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KOLEMEII.

## 1889.

FORT LEAVENWORTH, KANSAS.

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# United $S$ tates Gamalry 

## ASSOCIATION.

IEAVENWORTH, KAN.:

pepper and tobacco. in proportions varying with the stoch of ingredients on hand. The whole having been thoroughly mixpd with a piek handle, it was ready to be served to those desiring songething stimulating. but not hurtful, to rouse their fagrging enerabes, of soothe their excited brains.

During the war of the relellion the few posts existing in frizoma were occupied by Califormian troops, and it was all they cond do th keep possession of them and obtain rations enough to prevent star vation vanduishing the garrisons. Supplies were brought first trom Los Angeles across the Colorato Desert to Yuma, a distance of more than three hundred miles, and then began the tedious and uncertain journey to the Arizona pests. With such transportation as was furnished in those days, no dependence could be plated upon the arrsal of supplies at any spectifed time and each garrion was obliged to be as catertul of the stores it had. as thourh preparinge to undergo a protracted siege.

There was hat one saw mill in the Territory. which whe near Prescolt, the territorial capital, where the pine firrests of that region furnished ample material for it to work upen. In that vicinity lumber conhl be obtained for a little less than its weirgt ingolid bin it was seldom shipped elsewhere on account of the increased expense of freighting wer roads so infested by A paches that it was contidered an exceedingly fortunate thing to get from one station to another without the loss of some or all of the team mules.

There was not a stage line in the whole Territory athl had not been since the Buttertield drew off in 1861. I beliere the methl was carried on horseback firom Los Angeles io Preseott once a week. The other posts received theirs when the Quartermaster at Drum Barracks naw fit to semd out a pack mule in charge of a rivilan em ploye, carrying only the letter mail. As to newspapers and wher printed matter, they came be bull train, or some other equalle. swift converance, or, more frequently, failed to come at all.

The Territory formed a part of the Department of Calformia. headquarters at San Franciseo, and was under the command of General MeDowell. All the administrative business of the pepart. ment was conducted there, and it may he imugined into what a muldle affairs in Arizona frequently fell, when the ditfichlty of communication between the two places is considered. Eagh post commander was supreme oa his own reservation, and hid exactly ats be chose when he went off of it, provided he did mot trespar upon that of his neighbor.

All business transactions were conducted on a gold busis, and during my first three years in Arizona, the pay we received from the government never exceeded in value seventy cents on the dollar, and for a great part of the time it was as low as sixty.

Excepting the Pimas and Maricopas, the Indians were all called A paches. It might be truly sad of them at any time, they haso either just been hostile are now, or som will be. The Chiricahuas exeepted they were without horsex, salve thoscy they stole for food. The tact that they were not mounted mate it all the more difficult
*. .- to capture them in the monatains. They wore no clothing. except a brechechoth, and burdened only with their weapmins, which were light, when they started to run up or down a montain side, no soldier. burdened with his arms. elothing and aecoutrements. coold hope to overtake them. The color of the rock was such. too. that they were indistinguinable from them. Their numbers weine estimated at ablyot cishteen thousamd. They were noted fiertheir treachery and cruelty. Vntike the Indians of the Phans and the Northwest, they seemed to delight in lring and decoption, and the truth was not in them-or if it was, nerer came out.

The First Cavalry landed in San Francinoo in Janary, 1stit, or twenty-three gears ago this month. After a stay of a few weoks at the Presidio, the regimental Headquarters and five troops were sent to Drum Barfacks, near Wilmington, the somport of Las Angeles. Three of the troops had already been sent to trizona. one be one, on account of the scarcity of transportation at the dephet, and of water and forage on the roal. The fourth. Col. saxponss. was ahont on start, and being goung and in the enjorment of good health. and not knowing when I was well oft. as youne men seldom do. I resigned my office of rogimental quatermaster and foined him as the tiote lientenant of his troon!.

Our horses we received from the second (ablitimial favalre, and better ones for the work required of them I have never seen. The onle objection to them was their irresistible propensity tin burking when first mounted and this they diephayed to sude ab extent that the troop was seldom ordered to mount withont the air beine fillel for a few minutes with fying men, carhines and saluers in inextricable confusion. Howerer. we had no one serionsly injured and soon grew aceustomed to this exhibition of the "high whom of ridinge. although not provided for in our drill took. Our carlines were the old Sharps, using linen cartridges and perenswion (ajs.

I do not propose to enter here upon a detailed description of the march across the Colorado Desert and up the Gila River. The
length of the matetes ifas governed entirely bey the supply ot water and the presence or absence of sathe stome which. in that region. make life a burden and travelinus imposible. I part pe our ronte laty wer land lying below the level of the seat and somptimes we wished the sea might return and reclain it- own as it on ce did for Pharoan am his hosts. Sow inteloce was the heat even at that early seasen. and so searee and vile surh water ats we could ine to drink. that to be chgulfed and drowned by a tidal wase sepoled to our heated minds and horlies a - consummation deroutly to be whed." For want of personal experience the customs in worue in ferard to marching commands in that country were obecreal. Reveille sounded at about the only hour in the twenty-four when it was $\mathrm{p}^{\circ} \mathrm{s}$. sible to sleep. ami the march began at three or find oclock in the morning. The result of this was that men and animals were deprived of absolutely necessary sleip. and as the marches wert senerally short, the new eamp was reached at so early an hour that the whole day was spent in fighting tlies and other insects. and night came to find evergone mone exbausted than if the journey dad been made in the heat of the day atter a hight of refershing sleep.

From the time we left Warser's Ranche. in Calitimian, until we reached Maricopa Wefls, a distance of orer sun miles. We nevar saw anything which, even by a vigorous etfort of the imatrination. could be called a patch of grass

As we came. in the early morning, down the slope leading to the Wells, after an atl-night mareh across the forte-fise mile desert beTween that place and Gila Bend, our eyer were gladdened by the sight of a verdant spot which. to our weary souls. promised a pleasant rest: but a nearer approach proved it to be an illusion as decep. tive as the mirage of the desert. The green turt of our impigination was only a seanty growth of salt grass. cach hade of whigh was strong enough to stand alone and so rank with alkali that eren a hungry mule could not eat it and live
—.. Marieopa Wells. formerly a home station on the werland route. was the only plate between Fort Yuma and Tueson where the table fare ever rose above the sodden, greasy level of haton and beans. Owned by theonly firm of any impertance in the southern part of the Tertitory, and controlling nearly all the govermment contracts and freighting business the had their trans always on the roal and. in this way, could supply themodves amb their friems with all the necessaries and some of the luxuries of life-including the best brands of whisky and champagne to be obtained in san Fradecisco. It was a veritable oasis in the desert. and was, in many respects. a
reminder. to weary trurelers and sojourners in the lazd, of that great world outside of Arizona, tenderly and tearfully designated by the name of "God": Country."

The Wells themselves consisted of holes dug to a depth of three or four feet, in which the water from the Santa Cruz, a subterranean river, rose nearly to the surface. The water was so strongly impregnated with alkali that the porous earthen jars into which it was put when drawn. were incrusted on the outside with a solid white deposit of sodal and putash: but it was the best to be had in many miles, and, hal has it was, was always a welome bererage to thirsty souls choked with the impalpable dust of the trareleth roads.

Sear the Wells were the reservations of the Pinas and Maricopas. two Indian tribes always triendly to the whites and hostile to the Apaches. The Mariopas were the remnant of a once large tribe which had been nearly annihilated in a battle with the Yumas and Cocapahs a mile or two weni of the Wells. The whitened bones of the slaughtered Marieopas and their opponents that lay. piled upon the field when I risited it, showed how dexperate and destructive the struggle hat been.

Since their disantrous defeat the remaining members of the tribe had virtually phaced themselves under the protection of the Pimas, a tribe numbering nearly four thousand persons at the time of our entering the Territory. Aceording to their traditions, atter the subsidence of the great flood which destroved all the inhabitants of the earth excep Mosteacma and thove with him in the ark, Montezena made trom the red earth, the Pimas, and from the black ooze and slime the Apaches, their hereditary enemies. It was the boast of the Pimas that they had always been the friends of the white man, and that no member of the tribe hat ever killed an American. As to Mexicans they were not so positive. They cultivated their lands by means of irrigation, and upon them the fovermment depended for its supply of corn and wheat wed for forage at Fort MeDowell and the different stations along the overland road. They were the finest looking Indians I have erer seent atid. all things emvidered, the most respectable. They were intelligent. howpitable, and ready to inconvenience themselves at any time to assist anyone wearing our uniform; and have always remaned our firm and trusty friends.

At a point nearly opposite the center of the lima reservation, upon a high. rocky ridge of which a view could be had by the whole tribe, were displayed two objectes, the like of which. I venture to say, were never before exhibited in any Christian land. Rising from the stones, between which cactus plants of different kinde
lifted up their forbidding, thorng stems, were two rude frooden latin crosses, eight or ten feet high. ["pon each wats syspended the dried and shriveled body of a male Apache. with arms outst fetched and feet placed one upon the other. The living Apaches had been secured to the crosses by green rawhide thongs, which. shtinking and drying in the sun, had cut through the tlesh to the bonds, thus increasing the tortures of the vietims doomed to die a lingering death. Under the influence of the burning but dryingitin the bodies had not decayed, but with their dried bones and parchment skins.
had assumed the appearance of Egyptian mummies. The te they hung, a constant source of satisfaction to the Pimast and objectes of astonishment and borror to the passers-ly. These A pachers while making a faid into the Pima villages. had been captured alife. and the opportunity of wreaking vengeance upon their hated enemies was not one to be neglected by the Pimas. As torture was something seldom, if ever, practiced by their people. they were probably in a quandary as to what to do, when some one who had, perhaps. visited the old mission churches further south. surgested the flea of crucifying them. and the proposal wasaccepted and put into practice. with the results I have described.

Nearer the Wells two wooden head-boards marked the spod where rested the remains of two men of the old First Dragoons. who had fallen by the way on the terrible march malle by a part of that regiment under its distinguished commander. Colonel stepuks W. Kearny, in 1846, from Fort Leavenworth, Kansas, through New Mexico and drizona, as it was afterwards namet to California, of which her took military possession atter having defeated, with his worn and weary command, in three pitched battles, the fresh Mexican forces opposed to him.

Turning off from the orerland road we crossed the (iila and then traversed the thing-five miles of dusty. waterless desert between that and the salt River. We observed in passing that the sonthern edge of this vast platin was covered with a dense growth oft mesquite trees; beyond that not one wat to be seen. but in theip stead only greasewod and cactus of many varietis.s. from the cereux giganteus or "sumarro." towering to a height of thirty feet. with its outstretched arms curving gracefully upwards. giving it the appearance of a great green candelabrum, to the common prickly pear, sprawling raggedly over the ground. The land now covered with cactus had doubtlessly been highly cultivated, while the mqsquite was a part of the primeval forest of that region. Near the not thern edge of the desert we saw for the first time the immense irrigating
canals made by a pre-historic people occupying that section of country. concerning whom the Indians of the present day have neither knowledge nor tradition. These canals were of great size and length, branching out in carious directions, and evidently had. at some long distant periot of time enabled the people who constructed them. to cultivate thousands of acres of the land now justly characterized as desert. Ruins of what had been great adobe houses buitt on stone foundations, could be seen in every direction. The wearing down of the superstructures by the action of the elements gave to the whole the apparance of immense monumental mounds or pyramids. In places. the ground was strewn with axes. hammers and other implements. made of green stone, hard enoagh to turn the edge of a steel chisel, and yet, polished by their makers in some mysterious way, until their surfaces were as smooth as satin. Pottery of various kinds. from the plain. half-baked. porous material, to that having a brilliant glaze equal to some of the best modern styles, and onnamented with intricate patterns. or adorned with the simple but effective tretwork employed upon the templen of Greece, were found seatered about in the ereatest protusion. The colors. expecially the vellows and blacks. were as treshand brilliant as though the articles had been removed from the kiln only the day before

In spite of its forbidding name the salt River was fonnd to be a large body of fresh. sweet water. without alkali or other perceptible impurity and our camp upon its banks was a red-letter day in the calendar of our journes.

From the salt River a march of fifteen miles hrought us to our destination. Fort MCDowell. the newest, largest and best post in Arizona It had been constructed during the previous finter by a regiment of Californian infantry, whose time before being mustered out was thus employed. It was about half a mile hack from the Verde liver, from which all the water used by the garrison was hauled in a wagon. The parade ground, without grase or trees, was of granite gravelielosen packed, and as white and painful to the ryes in the blazing sun as though it had been whitewhehed. It absorbed beat enough during the day to keep the air throughout the , night nearly up to the temperature of the day, which for several monthe in the vear. averaged about $115^{\circ}$ in the shade. or would have done so. if any shade could have been found.

The company officers yuarters were of adobe built in one continuous line, fucing the parade ground, without any wings or rear extensions. Each officer was allowed one or two rooms, according to circumstances. and was permitted to use his quarters for drawing
room. bed rooml or kitchen, as be might think best. The rooms were about $12 x 15$ feet, with one opening for a door. but no windows except one facing away from the parade sround. The men's barracks were of the same style and material as those tor the officers. but their windowless ends faced the parade. 'The floors of the otticers' quarters were of common clay and were sprinkled \&ithowater as often as necessary to keep down the dust and moderathe the temporature to such an extent as to remder indoor lite emblumble. The principal objection to them was that they seemed to have some special attraction tor a species of villathous ame venomop red ant. which came up in warms through them in one onet atide another. overran the place, invaded the beds and held possession ptit them to the exclusion of their rightful ocenpants.

The roots were of mud put on to a depth of from ning to swelve inches, with the expectation of keeping out the water during the rainy season. Vontiortunately. in constructing the rowts. an prevent the clay talling through, a deep layer of horse manure had been latid upon the small sticks spread orer the ratters. and when the foods descended as they always did in Jamary and February and oceasionally during July and dugust, the water that poured through the roofs into the rooms was at first of a dark-brown color. then shaded off inte, a light yellow as the mul of the root dissolved and made its way through the lower stratum. On such occasion the oecupants of the quarters covered their bedding and other perinhable articles with rubler blankets and passed their time outhops. where. if there was more moisture. it was at least cleaner and best fragrant. For more than a year after our arrival at Fort MeDowell there was not a window or a door in any set of quarters ocempied b bachelor officers. The Commanding Officer, by virtue of his rank and control over the Quartermaster, indulged in the luxary of a wagon cover hung in graceful festoons befire the hole in the wall where it was intended at some future time to put a door ; the aproures for windows were covered with canvas or gumy salcks, With fiour crotches driven into the floor for a bedstend. a packing bos fior a table, a candle box for a chair, and a demijohn with its acompanying tin eup to represent the bric-a-brac of the establishment. the height of luxury was attained. Doors were not actually necessary for protection against the cold, but when we tound our romonst as we frequently did; invaded by rattlesnakes, centipedes of - finonstrous size and mien," and whole families of scorpions. with which the country was infested, there was a desire, almost a yearning. for something that might render their entrance a matter of greater dif-
ficulty. It was not altugether pleasant to wake at reveille and find one boots and stockings gone to become the playthings of a litter of festive pups. having so dittle regard for the proprieties of life that they not unfrequently distributed ones garments among two or three of the neighbors, whence they were recovered only ater a prolonged seareh and semeral redistribution.

It even ceacell atter a while, to be amusing to be aroused from slumber in the midhe of the nisht be the velping and smarling of a strugeline pack of dors and wolves tighting riment of one doorway. with the chathers of the bathe-groum keing thansferred to within the contracted limits of the alrealy crowden slecping room. The liability to step on a coiled or crawling rattlesmake in the dark was so. great that no one entered his rom atter dark without first striking a match with which to get a riew of his surromminge.

The first centipecle I ever saw. and it was nearly a foot in length. fell from the unceiled roof of the Commanding Otticer's sitting room upon the center of a tahle around which was asembled a party of otticur plaving eards. An cxpoling bombelall would not have scattered the sroup morequickly or effectively amd there was great joy over the death of the intruler. At that time our intirmation in resard to contipetes was limited to what we hal acpuired from our predecessors and according to their aceount the reptiles feet were ats remomous an the rattlers thage.

Opl wardrobes. which eonsisted of a fow mail, driven into the adobe walls, did not secure our clothing from invasion, as I discovered one morning on taking dinn my drus-coat. when I found within ite folls a whole family of about a dozen soopions, looking like bleached prawns. except that each had realy in his upturned tail a stinge propery prepared for produciner a lasting impression of warmth exceething even that of the climate of the eonntry.

The social life of the garrison may the deverihd in very few words-there was none. The visits of the paymathers at intervals of from thar to six monthe were the signal for the beginning of a saturnalia of drunkenness and rambling. which. we are happy to saly, is so much a thing of the past in our arms. that cren the recollection of it as it once existed were better not reviven.

From the foreroing details it may be imaged that life within the post hacked sume of the charms supposed to be essential to a happy existence, but reliet was not to be attained outside. The surrounding country was interesting only from the novelty of its indigenous productions in the form of cactus glants of a dozen different rarieties. Which nowe of us had ever seengr heard of before;
of trees like the palo rerde that no fire could ever burn; the mesquite, the dry parts of which were collected for fuel with a crowbar instead of being chopped with axes, whose edges it would break like glass; the useful but unlovely galleta grass, which was always mowed withan heary hoe instead of a seythe: whose shapp thorus would have perforated the intestines of any animal less fough than the Californian horse or Government mule. I have alwats believed that even they would have succumbed to its penetrating effects had it not always been ted in conjunction with corn and wheat mixed. which formed a glutinous mass that afforded a great degee of protection to the stomach. This grass, which was our only hing forage. cost about one huudred dollars per ton. The men tilled their bedsacks with it. but after the experience of the tirst man who hay upun one of them just long enough to spming from it and aall for the surgeon to bind up his bleeding wounds. they were beat on to something like smoothness, if not sotthess. betore being used.

What part of the country was not occupied by the neptiles and cactus seemed to be so well held down by the ubiquitoup and "perniciously active" Apache that no one was allowertorion halt a mile. away from the post in hroal daylight without a suitable escont.

Their tracks could be found every moming in ard around the post. They actually picked the bullets out of the arget at which the old guard were aceustomed to discharge their muzzle-loading muskets every morning. and prowled about with a view of picking ap old bottles or anything else of which arrow-heads could be made. They.occasionally shot men almost within the limits off the post. and yet no attempts were made to punish them. Whyp it may be asked. The following will serve to explain. General McDowela. had conceived and put into practical operation, the idea of having a government farm which should either produce all the grain required by the troops for forage, or, at least, such an amount io would enable him to regulate the prices of, that bought be the fovernment. A piece of bottom land lying on the river, near the pow. containing about half a section, was selected, an irrigating ditch everal milew in length. and, in places. ten or twelve feet in depth, was lug: the land was cleared of its dense growth of mesquite trees. hull bruah and cactus-mainly by the labor of the three companies ot the Fourteenth U.S. Infantry, and one tronp of the First ['. S. (awairy. constituting the garrison.

We had reveille about 3 oclock i. m. The caralry marched to stables, groomed their horses, and then returned to barracks for a sumptuous repast of bread and coffee, with, sometimes, h diminutive
slice of salt pork. At if a m. work on the farm began and continued withont intermission mutil noon, when time was allowed tor the coneamption of the bean or rice soup and bread which constituted the dinner. The work was resumed at 1 p . m and continued until six. At that hour the command returned to the pens, and the cavalry. after having sroomed their horses, were permitted to elose the day with a late supper so much like the early hreakfast that a confinsion in reckoning time was produced that rembered it difficult to distitiguish reveille from retreat roll rail

Such labre on such fiod a hare gevernment ration of the ponerest quality. without tresh repetables of any kind. in a heat which any decent thermoneter would hate resistered at $1: 35^{\circ}$ to $1+0^{\circ}$. in the sun. produced reveat sutteringe of erouse. Atter an hours work the men's garments were as wet as thengh ther hat what a river with them on, and they dried only when ather the days work. ther lay down in the night air to rest and sleep. In their exhausted and haif famished condition the men were emsily chilled and the fruits of such treatment som showed themselves in the apmarnnere of a malig. mant type of dysentery which tilled a sreat part of the wace in the new pent cemetery with the rictims of insutticient tinel, and overwork in a broiliner sun. I think some tittenen men died that summer. and were buried cither in their blankets or in rude coffins made of packing boxes from which the clothing had lween emptied. More than onee we assisted at the burial of soldiers who hat dome food service during the rebellion. whose coffins bore some such simple but
 "th latrs cavalry Trousers." - which had been phaced there by the orisinal packers of the boxes trom which the coffins were made. Requisitionsmade for lumber to supply the demands tor cottins were disapproved on the score of expense. It could be obtained in the vicinity only ly whipsawing it from green cottonwool trees, a lator to he justly appreciated only hy those who have hat it to do. Atthough the ofticers of the eommand did not work with the axe and whovel, as did the men. yet they had no adrantage in the quality of the food upon which they subsisted. They were allowed to purehase enough of it. such as it was. It was hack coftee. Irs bread, poor beef or poorer pork. with rice or heans, month atter month, for a rear and a half: Veretables were not to he had at any place within two handred miles. Potatoes and onions would have brought fabulous priees eombl they have been obtained. The Sulsistence Department kept no stores fire sale to officers except erushed sugar and, occasionally, poor hams and dried apples. For the frst half bushel
of potatoes I was qulle to buy in Arizona I gladly paid lars, and would have given sixts had it been demanded money seemed to have lost its power. It could neither exchanged for that which the human system craved. W, seurvy attacked the garrison, and the post surgem de purchase of anti-scorbutice, wagons were sent two hundren -iles and loaded with onions at forti-five dollars per potatoes and cacumber pickles at corresponding prices. was expensive, but it was the natural result of the so- ca cal measures originated by thove in authority. The wards, had tine gardens on a part of the farm land and had them the first year had work on both gone hand in late to begin a garden after the completion of the tarm.

Under such circumstances there may be some curiokity to know whether or not we lost many men by desertion. As a matter of fact it may be said deserters were few and far between. It was not because men willingly submitted to exist as they did. but that there was no apparent way out of the difticulty. There were hardly a thousand white people in the whole 'Territory. outside of the military posts, and of them it is safe tio say that abont seventy per cent were fugitiven from justice in other lands: men wh, could not have looked in a mirror without immediately drawing a pistol and shooting at the reflection. There were few settlementw at which assistance or concealment could be obtained. If a desenter reached the overland road, no matter in which direction he followed it. hee must bring up against a military post. To go south wis to invite murder at the hands of the Mexicans, and the interior was held exclasively by the Apaches. Had escape from the conaty been reasonably easy, I have no doubt that in a short time the oficers would have been loft with a small escort of a few old soldiers whose derotion to the service nothing could shake.

My first experience in command of a detachment or cavaly in Arizona may give some faint idea of the wifticulties , nder which military operations were conducted. One day at 1 ollock p. m.. jast after I had finished what by courtesy was called dinner, the commanding officer said to me, $\cdot$ I want you tol take thinty-five men of Col. Sanpobds troop, ten days rations and plente of ammunition and report to the commanding officer of Fort Grant hor seoutinge duty. Your transportation will consist of ten pack 中ules, which your men will pack, and you will escort a wagon train to the Salt River crossing. You will be out of this post and on the road before
sixteen dol
For once. ceaten nor hen, at last. nanded the dalld fitty bushel, and The remedy ed economioops. atter might have hand; but. was martinets of the old achool who could give orders of any kind, so long as obedience to them devolred upon some one else and had a habit of expecting prompt and exact compliance with them, I lost no time in setting out to make the preparations for which I was allowed four hours. The detachment and wagon train I could have got away with easily in half an hour, but the pack train was something as novel to me as a steam engine would be to a Kamtehatkan. The men, horses, rations and ammunition were soon in a state of readiness. After that came the principal part of the pro-cession-the ten bronco pack mules. By assigning one man to cach mule and allowing a large space to each in which to give fall play to his heels, actual tose of life was prevented, but enntrol over the animals was not gained for some time. The secomd act consisted in the bringing into the vicinity of a wagon load of miscellaneous articles which but one man in the command had ever seen, and eren he did not know the names of more than half of them. Strange sounds like aparejos, mantas, lash ropes, ete.. were heard for tha first time, and were fimally diveovered to have some meaning as applied to the things before us: but it took several minuten to realize the fact that it was only with the assistance of all this apparatus that a band of mules could be converted into a pack train. Imagine a ladedspan put on board of an unrigged ship, the sails. cordede. ete., thrown down on deck before him. and being told to be ready to sail out of port in a given time. and some slight idea of the situation may be obtained. An old sergeant who had served in A. J. Smithis troop of the First Dragoons during the Rogue River war, and had seen things like these before. although he had nevor used them. came to the rescue with all the information and good will he possessed. The aparejos were finally plared upon the mules in spite of their vigorous protests, and then came the real tug of warslinging the cargoen and securing them. Many here presert bave doubtless watched time and again a skillful packer handling his cargo, adjusting his lash ropes, making the diamond hitch, and finishing his work with the final indispensable kick and cry of "'sta bueno," and thought how easy it was to do. and discovered, only after repeated trials, that it was something to be learned only by taking hold of the ropes and conducting the operation to the finish -something which no amount of mere observation could teach and may appreciate the difficulties under which I was laboring, working against time. We put on the packa, bound them with the lash ropes, and, of course, like any other "tenderfeet," tied knots

Wherever it seemed they would do the most good. but for some mysterious reason, the mule was no sooner allowed to move off, than the packs slipped, fell in all directions except the one in which they were finally fired by the bucking and bicking of the frightened animals. Time was pressing; it was after 40 clo $k$ and not a pack had been induced to stay where it was put. but on the contrary, all were becoming rapidly pulverized and disintegrat 1 by rough asage. We all knew we could learn the business if qe only had time enongh, but under existing orders that was not to be had in the post for learning even a simpler trade than that of pocking mules. In this emergency my wagon train loomed up as the deliverur of the command. The cargoes, aparejos and rigging wope all thrown into the empty wagons, the vicious mules which 1 shofuld have liked to throw in after them. were safely and mounted, and the command sailed out of the post in "true cavalry style," conscious of a literal compliance with orders, and hoping to find time elsewhere for learning its new trade of running a pack train.

Knowing that the next day we hat to crosed a thirty-five mile. desert, the command was aronsed at midnight and the packing began at once. It continued in the same spot unfil is a. M., fir the reasons already given in our first day's experience. and I thought we might as well have a change of scene, fior the operations on the present one were growing monotonous, and mored out of camp. From 6 A. M. until \& P. M. We ${ }^{\text {wiwere }}$ on that hurning desert, beneath the blazing sun of midsummer, men and animals suffering from thirst - which there was nothing to allay. The scanty pupply of water in the canteens was exhausted early' in the day. Three days and nights more of similar worry and exhausting work and we arrived at Fort Grant, to the diggust of the commanding officer, who regretted seeing cavalry coming to his post to cohsume his meager supply of forage. He had asked for infantry, he being one of those who thought mounted troops would never be able to pursue $A$ paches in the monntains. Howerer, he made the best of a bad bargain. and the next erening, setting out from the popt, under cover of darkness, with one halt-breed guide, we started uppon a scout into the Pinal Monntains. There was one Mexican with the command. and. although not a professional packer, it was exasperating to see the ease-and quickness with which, assisted by a few soldiers, he packed those mules, and packed the cargoes to stay. It vas childin play to him, and under his instructions my men soon learned the art so well that we had little more trouble on that score with the light loads we carried.

For five or six nights we climbed the mountains on one side and slid down the other. leading our horses. battered and bruised ourselves among the boulders. pricked our flesh with the cactus spines we ran against in the dark. dodged the rolling stones kent crashing down by those above us on the trail, and nuffered for want of water which was hardly to be had at all. We marched all night and lay during the daty in the red hot cañons, their sides adding. by reflected heat, to the warmth of the sand on which we usually camped. without shade, and without having as much fire as would make a cup of coffee It was understood we were going to attack a large rancheria. of A paches and the greatest secrecy was absolntely necessary.

One atternoon, about an hour before sunset, we started from camp contrary to our custom of marching only by night. And had not been half an hour an the trail before the mountain sides were swarming with. paches tleeing to places of safety. We had undoubtedly been betrayed by our guide who, when we came near enough to the Apaches to make an early morning attack possible. had hecome alarmed for his own safety, perhaps, having been for Years a captive among the Apaches, and not having much confidence in strange soldiers. had perwaded the Commanding Officer much against his will. to make the move he did. The game had flown, and as with toot troops it was not thought possible to follow the A pacher rapidly enough to bring them to a stand, and as the mounted force wan mot considered sufficiently large to operate alone against them we returned to Fort Grant, a weary and disgusted command.

Soon atter my return to Mr.Iowell permission to make a scout against the lpaches living in that vicinity was obtained and the Troop, under command of colonel Sanford, started by the light of the new moon, having with it one civilian guide and one Pima Indian as a trailer. In the dimness of night illumined only by the light of a young moon, we broke a new trail over the Mazatzal mountain range and descended into the valley of Tonto'Creek. The next night we crossell the Sierra Ancha and camped in Meadow Valley. We were astonished at the character of thg country in which re found ourselves. The desert wastes of the Verde and Gila were replaced by high plateaus and deep valleys well nupplied with water. forests of oak, pine and walnut trees, and a luxuriant growth of grass. Everswhere were to be seen the ruins of the buildings of an ancient civilization - one no far adranced that the stone walls were laid with mortar made from the gypsum beds in the vicinity and as white and hard as Parian marble. We felt all the excitement of explorers of an unknown land and enjoyed in
$\bullet$
anticipation the surprises in store for us whenever we moved from one place to another.

While the rain body of the command was examining the surrounding country a small party of Apaches attacked the guard left in camp, but were quickly driven off. Hastily returning to the camp we started on the back trail of these Indians, our Pina trailer never delaying for a moment to hunt for a lost trach. and about 4 P. s., on rounding a mountain spur, we came in full vipw of quite a large rancheria of Apaches, utterly unconscious of of proximity.

The women and children were engaged in gathergng grass and sunfiower seeds of which they made almost the only brad they ever had. Making the most of the surprise, with a whoop and a hurrah, the whole troop charged, mounted, dow, $n$ the mountain side into the seething crowd of Indians, and the fight was on. our mon using their pistols and carbines, the Apaches relying for defens: principally upon their bows and arrows, although a few of them fad fire-arms. When the mounted charge had spent its force the mel dismounted. turned their horses loose and used their carbiness si well that in about fifteen minutes the affair was ended and we counted as the results of it fifteen dead bucks and a number of wonen and children prisoners. Another result was that in a day or two after our return to Fort McDowell, Delchay, the Chief of the (Coyoteron, to which tribe the Indians we had killed belonged, came to the post to make peace, bringing with him several hundred of his people. He made the most liberal promises as to future good be bavior, and as an unquestionable guarantee of his good faith, offered to bring all his warriors, abont three hundred, and join the troop, of our garrison for the purpose of attacking and capturing Fort Grant. This offer was declined with thanks, but it showed that the A paches had no idea that the troops of different posts belonged to the same army. but were regarded as independent bodies, hostile to each other, and simply holding places in the country for their own profit and advantage. In spite of his promises Delchay, with hls band, stole away from the post within a week and was engaged in his regular employment, murdering travelers on the roads and ptealing stock whenever it could be done. There was no reservation to which the Apaches could be sent when they came in and it was impossible to hold and guard them as prisoners, so the game of see-saw. fight and palaver was indefinitely continued.

With our one troop of cavalry we overran and routed the A paches. temporarily, at least, from nearly every part of the couhtry bounded by the Mogollon; the Verde, Salt River and the East Fork. As the

Indians had no permanent homes, when the pursuit of those who escaped from an attack made upon a rancheria stopped, fresh wickiups or brush shetters were put up, and the A pachos were again as much settled as before.

All our applications for civilians to hamble a pack train for us aso that we could continue in the tield longer, were refused by General Haleeck. who thought soldiers should do that kind of work for themselves. As our men were needed for fighting purposes we carried on our horses nearly all the food we expected to subsist on for twelve or fifteen days. This consisted sometimes of jerked beef, with the addition of pinole, a meal made of parched Indian corn coarsely ground and prepared for use by mixing it with water and sugar to make a groel. It quenched thirst, and appeased bunger, if it did not satisfy it. but, in a short time, became tiresome. Ite long continued use proluced intestinal troubles. and in other respects it was objectiomable as a steady article of diet. When possible we carried salt pork and hard bread. which were made to last without reference to the number of days or rations. That trick we had learned well in the Army of the Potomac.

All our scouting had to be done by night. Apaches were always on the lookout around the post during the day, and if a command attempted to start betiore sunset it would hardly get across the Verde River betore signal smokes would shoot up from a dozen mountain peaks, to alarm and warn the A paches of the threatened danger. As there were no mounted Indians in our vicinity, any dust raised during the day would produce thksame effect. There were no other cavalry troops to cooperate with us. Until late in 1867, the four troops of the First Cavalry were the only ones in all sonthern Arizona, and they were stationed at McDowell, Bowie, Buchanan and Calabasan. Those at the three last named posts had all they could do to hold Cochese and his Chiricahuas in check, and escort trains and paymasters along the roads from poist to post. The Chiricahuas were then atheir best. Well mounted, and using Mexico as a dopot from which to drair supplies they were a terror to all who traversed, or attempted to reside in, the country between Bowie and Tucson. As there were no other troops to cooperate with us, and the game must be played, we had to go it alone. There was no one in the Territory who had the authority to order the troops from different posts to execute any combined movements against the common enemy. Scouting was done or not according to the capriceor judgment of the different post commanders. Indians driven from the
field of operation of one command took refuge in another where the troops were inactive.

In addition to our continued scouting. we were obliged to furnish escorts for all paymasters coming into the Territory a duty which deprived the troop of a number of its men for a month or two at a time, and redpced its effective strength by just that number.

A supersthious belief peculiar to the Pimas. upon whom we depended for o The moment a Pima touched an A pache. dead or alive. or even killed, one in a fighty it was bad medicine to go a step farther. The limaj who thus contaminated himself was at once taken in charge by olley men whose duty it was to see that he drank water until romiting and purging were produced; that he was provided with a stick witli which alone he wis to touch his bolly, so that his fingers would not bed employed; that he tasted nothing containing salt, and that, upon his return to the reservation he was taken to a solitary place and provided with drinking water and pinole. After forty days of tast ing and inolation, the whole tribe went out in procession to greet and bring home the slayer of the hated Apache and celebrate the prowess of the hero, with general feasting añl rejoicing. As a superstitious practice it was harmless enough, and probably originated in the quarantine of some one who had encountered the ipnches during the prevalence among them of small pox or some other con-

- tagions disease; but it serionsly intertered with continuous operations against the Apaches, and compelled the command to return ${ }^{\circ}$ its post almost always atter a single fight, instead of keeping on with the good work.

In 186t, I Troop of the Eighth Caralry, just organized. joinel us at McDowell, and thenceforth we had more men tor scouting purposes, but no greater facilities than before. It was still the same hard work, scanty food and lack of coöperation.

Until General Cronk was placed in command of the Department there never was any organized or nystematic plan of campaign. Under his regime, in $180^{\circ}$, the seventeen troops of cavalry, two companies of the Twenty-third U.S. Infantry, with a sufficient number of Indian sconts, comprising the active forces, took the field with everything necessary in the "way of supplies, and pack trains bandled by civilian packers, to carry them, necessary for continuous and comfortable campaiguing. So large a command, operating in any definite district covered the face of the country with trails until it looked like a great cobweb. Fleeing Indians could not run away from one command without rusbing into the arms of another. Cap-
tured Apachen were placed on reservations and kept there a* much as possible. instead of being allowed to come and go at will on their own worthless promises of gond beharior. Much hard fighting and scouting had yet to be done, but ample means with which to do it were supplied, and there was a feeling that although inevitably delaged. final success and comparative rest must orown the work. Before that time, campaigning was unnecessarily wevere. performed under every disadvantage and in a desultory why. The only hope of ultimate peace seemed to depend upon the utter amilitation of the lowtile $A$ pache tribes - an apparently endlesw task fir the number of troops engaged.

It may not be uninteresting to relate here a singular experience I once had while in command of the troop and warehing for a wagon route from Fort Mr.Dowell to Fort Linenln. bow Verde. through an unexpored region. Having been sent out in the rainy season. the mal pais orer which I had to travel was of the con. sistency of tresh mush. The animals, which we hardly ever mounted. mired to such an extent that to make a distance of nine miles in a days journey wan considered good work. Quite a number of the animals had already died of hunger and exhamstion. when the Verde River was reached at a point where it mast be crossed, but could not be forded. A raft of large size was made of dry cottonwood poles, and when put into the water fionted as lightly as cork. The raft was partly laden with ransa park covers and other bugant articles, and two men starled with it for bhe turther bank. Theowater was as smooth as glass, not a ripple divarbing its surface, and the current apparently sluggish. When ahout the middle of the stream there was a cry from the mon. all "pening in the surface of the water, and the raft wont down baw toremost, never to be seen again. The men swam to shore, but neither the freight nor a stick of the raft ever came to the surface. or was seen again, although the stream wav carefully examined tor some distance below the scene of the wreck. The disappearame of that raft is a mystery for which no rational explanation has ever been offered. Another was built launched at a difterent phace and started upon its journey, but secured this time ley guys mate of lash ropes, which were carried to the farther bank by men who stripped to the buff, notwithstanding the falling snow, and wated, naked. on the other side until their clothing was brought over to them.

In December, 18 fis , I was the lucky recipient of a recruiting detail ordering me to New York City. No persuasion was necessary to obtain my prompt acceptance of it. and preparation for the journey of seven thousand miles were quickly completed.

At Maricopa Wells, as, suggested by the agent. I climbed very quietly into a buckboard, before which two partially hitched mules were held by the stable men. The driver, with lines in hand, followed as gently as though treading on eggs. The outer traces were hooked, the blinds removed from the eyes of the mules, when with a bound into the air which made every buckle and strap crack like a whip and nearly broke my neck, they started, and "lit" again upon solid ground about six miles from thé point where they made their rise. When they came down they were still going at full speed, and it was sometime before they were sufficiently blown to take an ordinary gait. The driver's only object in life seemed to be to keep them in or near the road and prevent them wandering off into the trackless desert.

We passed the Maricopa Mountain, and I bade farewell forever. as I hoped, to the colossal reclining figure of Montezima, one of the grandest pieces of natural sculpture in the world. The bold Aztec bead thrown back upon the mountain pillow, the rays of the setting sun projecting in high relief the clearly outlined features composed in sleep, presented a picture of dignified repose bordering upon the sublime. There he lay, waiting the coming of the time appointed for his shaking off bis death-like slumber, and, according to the Pima belief, commanding the Aztec Gabriel to sound the signal for ${ }^{\text {, }}$ the general resurrection of all those who had perished since the great fiood from which only Montezeya and his family had been saved.

Three days and two nights of torture on the narrow seat of a buck-board, without support of any kind for the back, the monotony broken only by occasional halts at the station for the necessary supply af bacon and beans to support life. and Fort luma was reached.
$-1$
The Quartermaster at Yuma having no other conveyance, hired ecivilian wagon for the transportation of myself and two other officers to the seacost. In this trap, which had no springs and whose seats were rough boards laid across the top of the wagon bed, we journeyed for five or six days across the Colorado Desert. Finally, after a disastroun wreck on the Jacumba Range, where we nearly perished of cold, we came down to the shores of the beautitul bay of San Diego, and, with a few days rest, the long nightmare of three years' service in Arizona was partially dispelled, if not entirely removed.
C. C. C. CARR. Captain First Cavalry.

## RECRCITING FOR TIIE CAVALRI.

THE following proposed method of recruiting for the cavalry, it is thought, could be advantageously applind also to the artillery and infantry, though the cavalry would undufotedy derive from it the greatest benefit.

The cavalry recruit should be a sonnd, active, and intelligent man, between twenty-one and twenty-five years of age. who can read and write and who knows something about hornes and firearms. He should be single and should not be allowed to marry while in the service. The majority of cavalry officers will say, "Yes, that is the clase of men the cavalry should have, but how are we to get them?"

Our answer is: Close every recruiting offce in the cities-..clone Jefferson Barracks as a cavalry depot. After, this is done find the number of recruits required for each regimenf of cavalry. and send an officer of each regiment to the country to enlist them. and send those he secures to his regiment. Officers on this sudvice should be held strictly responsible for every man they enlist: they should assure themselves that every man enlisted comes fully up to the requirements of a recruit; that he is well and favorably known by his neighbors, and that his parents, rolatives and friends know that he is going into the army. -

It is believed that men enlisted in this way will be deterred by family and local pride from desertion and other disgraceful acts, and that they will vie with each other in seeing who can return home with the best record.

It is not believed that a large number of these men would reenlist, but that they would return home upon the expiration of their terms of service to settle down-well instructed soldiers and better citizens than if they had remained at home. In this way the people would learn that they bave an army, and would soon look upon it as one of their most respected institutions.

This system would scatter well instructed soldiers, instead of deserters and convicts, throughout the land. In our country which relies so much for its defense upon an unorganized militia, this is a point of great importance.

The Government gives good pay to its soldiers, and it should get good citizens to receive it. Recruiting officers should not stick to the cities where they pick up the idle, discontented. floating population of the land.

It is believed that this system of getting recruits would cost much less than the present one, and a greatly diminished loss would be incurred by desertions, discharges through political influence and at the request of parents, and for the apprehension, trial and punishment of criminals.

Should this plan seem impracticable or too great an innovation to be carried into effect at once for the whole army, try it -say five years-for the cavalry and see how it works. Should it be given a trial, let it be done in good faith. The officers that are ordered on recruiting service will not be, as they are now, located for two years in cities. They will have to work, to travel, and to pay strict attention to duty. The government and their regiments should hold them accountable for every man they enlist. No ofticer should be allowed to enlist men for any regiment but his own.

I have suggested in outline a new plan for getting recruits. To show its details and practical methods, I will describe my idea of getting recruits for one year for a particular regiment. say the Eighth Cavalry. Sufficient money for the purpose is placed to the credit of the regimental quartermaster, to be expended under the direction of the regimental commander. Suppose two hundred recruits to be required. The commanding officer of the regiment details a competent officer with a suitable clerk to go to a certain section of the country, bay to Eastern Kentucky, West Virginia and East Tennessee. The officer sends to the locality be is to visit. advertisements and posters, setting forth fully what he wants, the troops and post for which he wants the men, and the time of his arrival. Is soon as the number of men required for one post or troop, or the number that can be olitained at one point, are enlisted, the officer sends them at once to their posts under charge of one of their own number. He should make them understand that they are to be no expense to the government until they have started to their stations, from which time all enlistments should date. He should show the man in charge of the party by railroad maps the route he is to take, and should tell him how his party is to be fed along the
journey. This should be by commutation of rations at 81.50 per day.

The post commander should be notified on what day the recruits will be at the post, or at the nearest railroad station or steamboat landing, and if necessary, he should provide the means to take them to the post. This explanation for one detachment will suffice for all. The men accepted should remain at home until the date of their enlistment, which would be the day on which they leare home for their posts.

Officers selected should be qualitied to examine recruits physically without the aid of a doctor. Single officers should be preferred for this duty. The regimental quartermaster should from time to time. upou requisitions approved by the regimental commander, supply the recruiting officer with funds to pay all necedsary expenses.

The men enlisted for one troop or post should be taken as nearly as possible from the same section of country, and should join, it practicable, at the same time. In this way the rigimental commander will know from the date of the expiration of their terms of service when to order recruits to replace them.

The adrantages claimed for this plan of recruiting are the following:

First.-Diminished cost.
Second.-A more orderly and easily disciplined class of men will be obtained. They will be men of good habits, and knowing that any shameful act will be known at once at their homes, will be deterred from desertion and other crimes.

Third.-Men can be obtained who are already skilled horsemen and tamiliar with tire-arms, and need only organization and military discipline to make them good cavalry soldiers. Men who have never, up to the date of their aulistment. been on a horse's back (and many such are now enlisted for the cavalry), seldom attain that firm but easy seat and that almost instinctive control of a horse by merely shifting the weight by movements of the legs, etc., which enable a cavalryman to give his whole attention to his weapons und to the commands of his officers.
R. F. BERNARD,

Major Eighth Cavalry, Brevet Colonel U.S.A.

## disclesion at fort meade, dakota

Captain Re A. Williaxs, Elghth Cavalry, sald: I think Colonel Behsard's suggestion to do away with Jeflerson Barracke very good one. It wat my fortune to be stationed there nearly two years in 18s1-St, when I was Depot Adjutant, and familiar with all the workings of that establishment.

Men were suppoeed to be brought in there and retained for a period of four montha with a Flew of being thoroaghly inatructed and then sent out to their regiments in a condition to drafted off after a duty. As a fact, when a call for recruits was made, they were sometimes other umes the men obtalned a fair knowledge of dsmounted drill and the manual of the carbine, all of which could be taught them in two or three weeks nt their post. As for mounted drill, there were not enough sahqes th be a vailable for instruction. The uamber of hormes was ligited to about ninety divided amoug four companies of instrurtion. nad the had to commence oure more at the beginatige. New men were constantly coming in aud it was almost imposible to keep up the squads in their differeut degrees of advancemeut. It mans bo argized that all thete things have been changed nace then, but che fact is detachments recently sent out show the same lack of instruction that they did in fact is that The barrack rovem is lusuffclent and the men are overcruwded. I haveknown at times more than : ${ }^{2}$ men to be at the Depot when there was not pruper room for inore than tho.
The post, as atatistics show, ts one of the most unhealthy in the army, the lower part of the buildings being merely cellars in the side of a hill. The recruit ts brousht in there and thrust among a crowd of undisciplined men. He has no amusements and no newriakes save such as he may plek up at random from those who come frum uo one knows where.
frequenters of the grog shops of Caroudelet. There he mects men who fiduce him to dine frequenters of the grog shops of Caroudelet. There he meets men who induce him to drink pis clothing to the illicit dealers in such articles, who hover around the post continually.

To show the extent to which the sate of clothing was carried on just before I went there. 1 noticed that when I reported, hal! the streetcar and omaibus drivers or teamsters in the city were provided with new cavaly overcouls of the latest pallern and wore them publichy. The reault of all this is that thenecruit either deserts or comes back from "absent without leave." to an inmate of the guard-house, where he makes the acquainiance of the worat characters in the service. I welieve that many a promising yuung recruit has been properly difeiplined troopy and as a consequence ther become dissatistied und wortiess, they demert.

It would be much better to sead these men out to their troops as som as they are enlisted. The queation of weeding out could be better dispowed of after the men joined.

Captain E. A. Godwin, Eighth Cavalry, said: Iagree with colonel Bervard in his ideas about recruiting, as expressell in the paper Just read. I do not doubt that the adoption of the method recommended by him would result in th. enlistment of a better clan of men and reduction in the total expensea of the army by reasou of a reduced number of desertions, reault would follow, viz: the better acquasintance of the people and the arny. At preyent it cannot be dented that many louk upon the enlistment of their sons in the army as almost a dagrace ; and I believe that it in generally considered that such enlistment is equivaleut to a eonfession that the young man is good for nothing else - it amounts to a loss of standing among his friends and acipuaincances. I canuist doubt that more famillarity on the part of the people with millary service as it exists in this country in time of peace would effect a marked change in their idead and opinions on the subject : and. besides other beneficial re list in the army. The number of yoang. Geranna who apply for enlistinent in the arms shows that they have not the same ideas regarding milliary service that prevall among Americans. Their education has been diferent - they have seen more of it and know more about ic, and do not dream of its being derogatory to their characters or standing. I do not wish th be andentood as implying that we have no good men now in the service: there are many; but it it deairable to have none other, and to increase, by all proper means, the nu mber of good men who would be willing to enlist. I am not in favor of localixing the army bs permauently as-
signing regiments to particular districti, and rectuiting for them onfr in aucb districts. The recruitlag party from a regiment should be sent to a diferent part of the country each year It is certainly true that the larger the town or city where the rendexvous is entablished, under the present system. the less can the recrulting offer find out about the applicanta for enlist ment.
The proposed plan could not posibly do auy harn : and If for one. fully belleve that it would be a vast improvement to more than one reapect.
disclision at port leavenworth, Kansas.
Brevet Lieutenat Colonel Woodhcill, Medical Department, sald: Tbe subject of Colonel Berisard's paper is one of fundamental importance and of corresponding interest to the army, and I believe this method of seeking a large part of its recruits (which. indeed, I have pub hicly advocated, to be essentially correct.

For most men of proper character the army is perfectly acceptable, and for the few of them who may become distalisfied, the motal control of home infuence would generally be a sufficient restruint
Cnder our pres

Cnder our present system nearly all of the men who are perfectiy desirable at eniatment are obiat many originally ; but have great faith in the elerating etfect of discipline, and and citizens. I would notslose all clty rendeareus, for many worthy men. born there or drilting thither for employment. masy be found in citics. but the rendezvous should be placed in more rospectable loculities and attention be drawn to them by copiols advertising

The corst of recruiting, man for man. will be greater by the new nethod, biat the aggregate number of men reyuired and their total cost will be less in the term of ave yearg.

The chief value. though not the oxteusible object, of depots for reeruits, is fo keep these by drafte of very newly enlisted men, as ciaptain Wilinams polnts out. Al Davids Island I have known meusent uway within a week of their arrival. Voder any circuanstancea the military Instruction they recelve is very small compared with that to be gained during the same period with aul organized command.and it is probable that men specially respuited. as colonel berSARD proposes, would receive barm rather than bencfit by service at the present cavalry depot. But if men should not pass througb a depot, thev should be critically reixamioed on arrival at their posts. as was formerly required, but is no louger allowed.

There are however, two points in Colonel herimard's scheme, admirable as it is as a whole, where inm sure it requires ameadinent. I belleve it would be a infstake that "the men enlusted be only two or three. With a good class of men properly distrituted, the aterage supply required would bot be more than two. or, taling account of reinlistuents, over one man a month in peace. This does not include desertions, whith will persist under the yresent aystem. The crippling encer upon a command of many ealistmeuts expiring simultaneously, would leed very troop commander to objert us an arrangemeat hat wrouli deplete blm of a considerable equad of old soldiers, and presumabiy of non-commisioned officers, at once. Squade simul. caneously enlisted motghe be sent to the same sost. but not morv so to the same troop together

The second point to which I except is the opinion that men can be properly selected without medical help. I speak from no deaire to unduly magnify my aftce, but. after a very conscientious line otficers when left to themselves, not ouly arcept rany men who should be rejected, but sometimes reject men for imaginary blemishes. Nor is evers physician compe rent to pass upon the qualincatious of a recrult. It requires a sperial raining to be agood millitary examiner, to recognize the ad rantages and the special defects that make or mar a mol dier's phyalyue. That is not the popular doctrine. but I think it to true

That there in abundant and excellent material for the ranks throughout the country wo a hed by going for it, but that will never go to the cities to enlist, I ami astiated by permonal obmervation.

A WAR REMINISCESCE.-THE FIFTH C. S. REGULAR CAV. ALRY WITH GENERAL SHERIDAN ON RAID TOWARDS RICHMOND, VA., IS 1864.

$A^{\mathrm{T}}$T the commencement of the campaign of the Army of the Potomac, in the spring of 1864 , the Fifth C. S. Cavalry. consisting of headquarters, band, and troops C, E. G, H, I and M, in all about 250 sabres, was attuched to the Reserve Brigade, First Division Cavalry Corpis.

The officers present with this command were Captain A. K. Abnold, commanding; Lieutenant Hastings, Adjutant; Lieutenant Maley, Quartermaster; Troup Commanders, Lieutenants Sweatman. Urban, Henley, Wilgon. Robbins and Fitzierald. Troops B. F and $K$ were serving as encort to General Grant; troops $A$ and-I). detached at Point Lookout, Md., troop L, not organized.

After the cavalry fight at Todds Tavern, May ith, and the action on the 8th, which resulted in driving back Fitz Lees Division to Spotteylvania Court House, the cavalry corps was withdrawn from the front and rendezvoused on the evening of the 8th at Aldrich's. on the Orange Court House and Erudoficksburg plank road.

Orders having been recioired by General Sheridan to seek the Confederate cavalry and fight it, the corps started southrard on the morning of the 9th.

Striking the telegraph road some distance north of Massaponix Church, it commenced ite nemorable march to gain the rear of the Confederato army, expecting thus to draw the enemy's cavalry away from Lee's lines, and into an open country where it could be more eadily overwhelmed.

The order of march was as follows: The First Division, General Merritt commanding, in advance; Custer's Brigade, as advance guard; Devin's Brigade next, and then the Reserve Caralry Brigade, Gibse commanding. The Third Division, Genergl Wilson commanding, in the rear of the First, followed by the Second Divison.

General 1). Gregig commanding: the rear guard being componed of regiments belonging to Davies Brigade of this Division.

Nothing occurred to mar the progress of the march until after the rear guard had arrived at a point near Mitcluells Shops, when Wickiamis Brigade. of Stiarts Corps, made it, appearance and commenced a spirited attack. The Sisth Ohio assisted be the First New Jorsey hathomely repelled it. driving the enemy back and inflicting serious loss.

As these events were passing in rear, the head of the column had reached Childsburg and at that point left the Telegraph road for that which leel to Beaver Dam Station on the Virginia Central Railroad.

Crossing the North Anna at Andersons Ford Deviscs Brigade and a portion of Gibrs' went into bivouac: (Crpteris Brigale and the remainder of Gibrs', consisting of the Fifth C. S. Cavalry and Sixth Pemnsylvania, marched to Beaver Lam Station for the purpose of damaging the railroad. Coming suddenly upon the station the command recaptured more than 350 of our men who had been made prisoners in the Wilderness, burned the store-houses and a vast yuantity of supplies, a od tore up the track for several miles on each side of the station. besides destroying weveral locomotiven and a number of cars.

After midnight the Fifth C. S. Cavaley and sixth lennsylvania returned to the bivouac on the North Anam. A portion of Jevin's Brigade was picketing the country on the roads leading up and down the river on the south side. Greanis and Wisans: Divisions had not yet crossed.

The Fith [ $C_{2}$ S. Cavalry had scarcely gotten pusaddled when its commander received orders to report to the Communding General of the Cavalry Corps. Procceding to Headquarters he found General Snemidan in a tent; seated near him was Geneval Maritt. Both were busily engaged consulting a map by the dim light of a candle. Atter reporting, General Sheridas informed Captain Ahnolin that he desired to more as early as possible in the morning so as to reach Ground Squirrel Bridge on the South Anna and there encamp for the night, and that he did not wish to be annoved by the enemy while breaking camp. He said he expected a portion of the enemy would cross the river above and get on his flank before he was well under way. Examining the map be pointed out a frd—known as Davinport's-and ordered Captain Arnold to take his regiment and seek this ford and hold it at all buzards until he wha reliesed by bis order, remarking that he was going to Haxall's Landing on
the James River. and that if he-Arxom-was unable to join him directly he could move towards the White House on the Pamunker via Hanover Junction, and from there join him: or if that was impossible, to proceed to Fortress Monroe and await further arders

Capt. Arxold immediately went to his command, saddled up, and moved out upon the roal leading up the river. H. found it blocked with troops, some mounted and ready to move. whers lying about trying to catel a wink of sleep. so that it was sometime before he could get his command through, as both sides of the road were thickly wooded. After marching veveral miles. the column came to the intersection of the mad leading northward. Turning ont on this road, it reached a point near the piver a little after sun rise. Seeing some tents standing on the bank. the advance guard mate a dash at them: These tents proved to be the camp of a detachment of Confederate engineers which was there for the purpese of repairing the bridge at this point, known as Davinport's, and which had been dentroyed by Kilpathick the preceding year. The advance captured the camp and destroyed the tools found in it. The men who were working on the bridge escaped and sought shelter in a strip of thick pine timber on the north side, from where they opened a sharp fire upon us. A troop was dismounted, and after lestroying the newly laid slecpers across the bridge, was thrown out as skir mishers so as to cover the approaches to it. the skirmishers replying to the enemy whenever be fired from his cover. During this skirmish sereral of our men were wounded.

Having some doubts as to this being the ford as the river ran deep and sluggish between its banks. Captain Arvolin commenced to look about for some definite indications as to the crossing. He found an old negro liting below the bridge on the bank of the river who informed him that this was the point used an a ford ever since the bridge had been burned, and pointed out a place of the other side which had evidently been dug out and used as a wagon road down to the water's edge. The point of egress on this side was not no well defined. Howerer, as the negro was very positive, sayiug "dat dar was no other ford about dese parts," the troops were disposed for the defense of this ford. covering the road which led to it from the north side.

They had hardly been placed in position when the head of a column of caralry, followed by artillery and a train of wasons appeared on the high and cleared ground in front of the bridge road. The cavalry crosed the road, noved up the river and disappeared behind the timber referred to above. As the artillery made its ap-
pearance opposite the ford a piece was unlimbered and placed in battery pointing towards the crossing. The cavalry and traina having passed, nothing remained in sight but the piece

Not understanding this movement and thinking possibly that ${ }^{2}$ there might be a ferd abuve. Captain Arvom detached Licutenant Whas with a platem to recomoniter in that direction. He proceeded up the river about three-finuthe of a mile and discoveren a newly made forl, crowed over and marched a short distance on a wood road. when suddenly, at a turn in it. he came upon the head of the cavalry column: the men were dismouted. most of them lying down holding their hosses by the bridle-reins. evidently awaiting further orders. Lientenant Whens turned about, recrossed the stream, and hatened back to report the result of his recomosisance to his commambing officer. For the moment Captain Arxold felt that he was in a very dangerous position. as. instead of having one ford to defend. he would have iwo. agatiost what seemed to him to be agood sized cavalry brigale backed by artillery. He wax in the act of making dispositions to meet this emergency-by moving with a part of his commanil to the upper forld. relying upon the thick timber on the south side to sereen his paturity of numberswhen the Adjutant General of the Brigade arrived with orders from General Sheribas to withdraw and join the main columm.

Detailing Lientenant Whasos to command the rear guard, he ansembled his skimishers abd gave orders for the wounded men to go ahead and overtake the main column. Which, accordinge to the Adjutant General. had not then passed Buarer bum. As soon as the command appeared on the road the piece of artillery whith had been placed in position opened upon the column. Fortunately the firing was widd and but one casualty occurred. . The command proceeded onward without interruption until it came to the intersection of the road it was on with the road leading to Beaver Dam. Here it was delayed by having to pick its way, single file, through obstructions -in the slape of fallen timber acoses the road and hurning fencea - Which obstructions had been made by the rear guard of the main column for the purpone of impeding the march of the enemy, who was supposed to be following.

The command finally reached Beaver Dam station and continued its march, hoping soon to overtake the main column. After march. ing perhaps a mile it was noticed that the wounded men who had been sent ahead had hated at an elevated part of the road. As the column came in sight one of the men rode back to the commanding officer and reported that the enemy was in front, about 400 yards,
occupsing the road and wood. The command moved up the hill. and through the thick nmoke from the burning fences and timber on each side of the road could be seen taintly the figures of men and horses.

Knowing that the force in rear would be som heard from and believing that he could make his way through the force in front which seẹmed to be small, 'aptain Arsobn moved forward with drawn sabres. taking the walk, then the trot, then the gratlop, and when within about forty yards from the enemy gave the command "Charge." The column went on with a rush, and as its head approached the enemy an officer in tront gave the command. ." Forward. Third Virginia;" the heads of the columns met and for a short time there was a general melee, sabres and pistols lowing used freely. However, owing to the narrowness of the road and great depth of the column opposing the command. it was unable to cut ite way through. It rallied on a hillock on the right about 100 yards from the point where the columns met. the smoke and timber somewhat masking its position. About this time firing was heard in the rear. which indicated that the rear guard was engaged with the enemg who had appeared at Davinport $*$ Ford.

-     - Finding now that he was in a tight place and expecting to be soon attacked both in front and rear by owewhelming uumbers. Captain Arsold threw out in line of skirmishers to feel towards the right and if possible to gain the left and rear of the enemy in his front, hoping thus eventually to escape. The Adjutant General. who was still with the command, volunteered to try and run the ganme let and bring aid to his support. The right of the skirmish line soon obtained a position on the flank of the enemy. keepins up a sharp carbine fire through the timber. Continuing this flank movement towards the right the command finally reached the rear of the enemy and held him in check, while falling back slowly, until it arrived at Little River just as the pioncers of the rear guard of the main column were about cutting the last sleeper that helt the bridge together. The command got over safely and the bridge went down as the enemy came up to it. The Adjutant General had gotten through all right and a portion of our brigade came to our assistance, arriving at the bridge just after the command corsied, and in time to help drive the enemy back from the other bank.

In this action the Fifth C. S. Cavalry lost two officers captured (Lieutenants Sweatmax and Wilsos), sixty-eight enlisted men killed, wounded and missing, and forty odll horses missing. Twn men were known to be killed outright and seven wounded. The
forces of the ellemy consistell of Gonmos Brigale in the rear of the command, and $\mathrm{W}_{\text {fekibasts and Lomax } s \text { Brigades fin tront: their }}$ united strength at least 4 , 000 sabres. besides artillery.

MoCembas, in . The Campaigns of stuarts Cavalty." page 410 . evidently refers to this action. when after deseribing the movements of Stiart's Corpis the day betore, he says: . laciving Fitz Ieee to follow the viemys rear $\% \quad * \quad * \quad$ stiart marebelin the night with Goromsts Brigate to Davingorts Bridgre where he crossed the Sorth Anna the fidfowing morning. The brigades Werr united at Beaver Dam Station, where the ememys ratr was dutin encounticrid.

Throughout this aftair the ofticers and men acterl in a horace. gatlant and disefiplined manner. and it was a subject of fongratulation that the casmatien were so small. considering our position amd the great odds against us.

An enterprising enemy should have amihilaten the command.
A. K. ARNOLD.

Lieutenant-Colonel First Caralry.


Require a corpral in can tronp xquad to catry one lariat. that by untins tioure a picket rope may be provided.

So much fir the horst
Arm the treenare witli the mablime and sabrealome A pistol is more dangerons in rand friend than fine and besides the extra freight of pistol and ammminten. the tronger should have no ehoice between firs arms. bit be taught to depend upon one alome.

He should wear the sabre belt with cartridge tox and be provided with the stewart attachment for the sabre. Whell mountel. the sabee should always be attached on the sadded either lie the Stwart attachment or worn under the left legot the trooper in a manuer well umderstomed by all cavalrymen.

The smallew posible amount of elothing shond be rolled in a bed banket. with robber ponelno outside and be strapped to the cantle. The overont. When not worn hy the trooper. should be strapped th the pemmel.

Wagron mains are turninhed tor general purpones on long marches.
 owh have an exietive long rathe carbine or rifte.
Monnterl trop-without sabres. however otherwise armed. cease to the cavaler.

To secure a more diective arm tor increased distances a moditication of the prewent springtied carbine is suggeqted, by diminishing the calibre trom 45 to about 35 or 38 : this. with the charse of powder now in use, would give greater range and fatter trajectory, and make it equal to the infantry rifte.

It would revilt in slightly reducing present treight and possibly. the size of the stock. It whould be as light at possithe consistent with strengeth. so as to be easily handled on horseback; in fact. the barrel might well be mate twoinches longer and the general make* up and finish be like the Springtiçd rifle furnished for the use of officers.

With a good breech-loading rifle or carbine, I do not faror the introduction of a magazine gun. Our breech-loading carbine girea sufficient rapidity of tire to ensure effectiveness, while a magazine gun would increase the rapidity of fire at the expenke of effertiveness, abd would practically result in an unnécessart expenditure and waste of ammunition.

Ten well ditected shots are worth more than bundreds of random ones, and effectiveness should be sought, rather than rapidity of fire and noisy fusilader.

Besides the other advantages gained by reduction of calibre is the possibility of carrying twenty-five per cent. more ammunition and the probability of securing a better proportioned and more evenly-balanced arm for our mounted service.

Experience has taught us in this country that the sabre may be dispensed with in ordinary Indian warfare, as they now use no similar weapon. Yet it is a historical fact that in 18.5i a battalion of cavalry, by an impetuous sabre charge, seattered to the four winds of heaven three times its number of Indians drawn up in battle array.
J. K. MIZNER,

Lieutenant-Colonel Eighth Cavalry.

## REVOLVER SHOOTING

CKILL in handling the revolver tor cavalry furposes necessitates a combination of acquirements in connection with its use, and the growing interest in revolver shooting, which seems to be manifested in civil as well as military circles, leads us to go somewhat into the details of the business, and to repeat many things which have been said betore, and which are evident to modt pistol shots.
The diticulties to be overcome in shooting a pistol correctly, are directing it properly at the object the instant the trigger is pulled, and preventing the pull of the trigger, the blow of the hammer and recoil of the pistol from deranging this direction till after the bullet has left the muzzle. Any one with ordinary nerves can, if allowed to take deliberate aim-that is, occupy two or three seconds in pointing the pistol after it is raised-soon become a fair shot by paying close attention to a few points.

One great trouble to beginners is pulling too much on the right or left side of the trigger, causing the bullet to deviate to the right or left. Another is Hinching the instant the ${ }^{*}$ trigger is pulled. Others find they hold the pistol so loosely that the recoil throws the muzzle up tefore the bullet gets out, causing an upward deviation, while some allow the biceps and triceps to romain so relaxed that the recoil swerves the pistol to the right or left before the bullet clears the muzzle. An ordinary observer, by giving close attention to these points, noting aud correcting the deriations peculiar to himself, will soon become a shot sufficiently skillful to compete, with more or less success, in the pistol matches frequently occurring in different parts of this country.

This, however, is but the A B C of what is required of a cavalryman in handling the revolver. It is what the first position of the feet and left hand, and the holding of the rapier is in acquiring the accomplishments of a master of fence. The next step to be attained in this line, is called "snap shooting," which is taking the least possible length of time to direct and fire the pistol correctly.

With the single action colts revolver. a di-mounted expert should. with one hand. tire five shots in tour amd oble-halt seconds with considerable aceuracg. This requires the trigeser to be pulled with a quick jerk the instant the pistol is properly directed. and pulled in such a way that the deranging elements do not change the direction of the pistol till the bullet clears the barrel. Let the pupil who has learned shap shooting on toot, mount a horse and put him at tull speed and he will tind that the problem asomes a phase. the solution of which becomes a tine art. There i but a tractional part of a second in which the object can lin caturht, aut this must be done the trigger jerked and the pistol held against all the deranging elements, or his opportunity is lost, never to return.

In this kind of work a fair shot should tire tive shet- in tive secomps. The difticulty in corking the revolver is added to considerably when the horse is in rapid motion. Our coht - revolver is an much inferior to some of the double action ones. an the ohd mazzle to the modern breech loader. It in particularly defiective for rapid tire, and it is next to impossible to bave a single days prace tice with a troop withont a number of these revolvers becoming dis. abled ; in tact, the defects and shortcomings of our revolver and its ammunition are so numerous, when compared to vther revolvers is the market, that it is a marvel how it has been kept in service no long. The calibre 45 , Smith \& Wesson. is. if anything. a more indifferenfreapon than the Colt s.

The bere revolver we know preminently suited tor cavalry purposen, is the double action smith $\&$ Wesson. catibre 33 . six-inch barrel. It is very aceurate tor over one hundred yards. more so that the Colt's. has great penetration. very little recoil, and uses tombeen grains of powder. Two of these revolvers, atter being uned for more than as year with but little care and cleaninge. having had over 2,000 rounds fired trom them and being smapped at least s.mon times. showell not a sign of weakness. With one of them it is easy to tire tive shotes in two and one-balf seconds. and we know mothing in the shape of a revolver that can compare with them.

The best authorities I have been able to comsult. dittier very widelyas to the hest method for teaching men to herome grood wat shots mounted. Inanarticle by General J. C'. Kel.tos. Assistant Mifutant Gemeral C. S. Army, recently published in the Jormalof the Catalry Assoclation an admirable urethod in given for this instruction.
sometime previous, however, to the publication of this artiele by General Kemon, we had adopted a different course, and as there in nothing like knowing the road over which you travel, we have made
no change in our plan of instruction, which we thithk has been attended with reasonable progress. It is based on the theory that suap shooting, either on foot or mounted, is bnly a quick aim, a quick jerk of the trigger and an almost instantunebus poise of the rerolver, so as to allow the bullet to clear the muzzle betore the revolver has been acted upon any more than possible by the disturbing elements.

We begin by teaching thoroughly in the gallery the principles of pointines aming and whoting the revolver with a charge of five graine of powder and a round ball, and atter five shots have been tired. have the recruit cock and siap his phetol unbaded as rapidly as possible for about thirty seconds. cantioning him to hold on the bull's eye as nearly as possible each time the trigher is pulled and grasp the pistol tightly: This is excellent training fir the muscles of the hand and arm, and teaches the recruit to aim and pull quickly. This. and in tact all the work connected with namp shooting will be simplified more than tifty per cent. Where the cavalry is armed with a good double action pistol, tiring about one-halt the jowder now used in our regulation cartridge. The reavon tor this secms obrious The pistol is intended tor close, quick work, and when it is necessary to shoot at long range we have the carbine.

This gallery work should be continued daily and the men oncouraged to take a quick aim and tive as rapidly as possible till they hare acguired the power of firing tive shots in six seconds with tolerable accuracy. Comnected with this gallery work there should be mounted exercises hell encll day. Five " $\dot{A}$ " targets on frames, a standing silhouette pasted on each. are placel in line twenty yards upart. baving their front inclined so as to make an angle of about forty-tive degrees with the line uron which they are placed. A track should be laid off about eight gards from the targets, and the troop marched by them in column of filew at a walk. trot and gallop, and the men required to snap their pistols at each sillowette as they go by. This whonld be raried by an ocrasional round of blank am. munition, the men being cautioned not to tive nearer to the horses' Leads than forty-five degrees, taking their seate ast the center.

Too mach tire in practice near the horses hoads, is apt to make them gun shy, and in this practice all the disturhing elements to accurate fire can be obtained in tiring to the right, left, tis legrees off the front. and to the rear: so that in actual sertice, if it is necessary tof shoot to the front, the problem presents no new phase. Atter a week or ten days at riding past the targets in file, the men should bed required to do this individually, and vary snapping the pistol

In the infantry we believe all, from the cuptain to the last prirate, should be a sharpshooter; in the cavalry, all whould reach the corresponding excellence $w$ ith the carbine, and in addition the necessary skill with the revolver, to fire, mounted, tive shots in a less number of seconds, horse at a run, and to hit the kneeling silhouette four times in five at a distance of ten yards.

Then when troubled times come again, as they surely will, with a regular army trained to this standard of excellence. it will not be said, as it was during our late unpleasantness, that the volunteers make as good soldiers as the regulars.
W. P. HALL,

Captain Fifth Catalry.

## THE NEW GERMAN DRHLL BOOK AND SOME DEDCOTIONS THEREFROM.

THE most important recent event in the mifitary world is the apparance of the new .. Drill Regulation for the dierman Infantry." adopted by the Imperial orler of Niptomber 1. 1888. The most striking feature of these regulations, whiseb are the result of carefal stady, based upon the war experiente of the foremost military nation of Europe is the complete abolition of all tactical movements that are not of practical utility in war The "pomp and circumstance of war" have been reduced to a minjmum. and the new tactical system in an extremely business-like method of tighting a nation's enemies. Drill, it is stated, is for the preparation of soldiers and leaders tor the stern duties of war. and the oloject of all exercises is their application to the field of battle. . . Simplicity alone promises success." and all superfluities are therefore eliminated from the drill book. Extra movemente for the purpmes of merely promoting unitormity. or producing a "fancy drill," are prohihited under penalty of the prompt dismissal of the otticer intuoducing them.

The coiperation of companies forme the great basin of the "fighting selool." The school of the regiment partakew somewhat of the mature of the division drill as given by Cros. with the addition of probleme and practical tield exercises. The manenvers of the regiment and brigade form the transition from mingr to grand tactice.

From the very beginning, the instruction on the drill ground alternates with instruction in tield exercises.

Notwithstanding the avowed intention of tho Prussian authorities to preserve the traditional discipline of the tr troops, the prescribed position of the soldier indicates at the outset that the traditional drill is now merely a tradition: and it is hard to find any remains of the cant-iron rigidity of the old $\operatorname{Pr}$ assian school in a position of the soldier which differs mainly from that prescribed by Liptos in the fact that it is easier and less constraibed. The position of the soldier must, above all. be such as to adpit of an easy and
unimpeded handling of the piece; and so little stress is laid upon the fancy "setting np" of the men, that the prescribed position permite the neck of the recruit to "protrude freely from the shoulders," the eyes straight to the front and not striking the ground.

The ordinary march is at the rate of 114 steps a minute; the attack march, 120. The length of the step is about thirty-two English inches. Most of the movements are executed without cadenced step, the men retaining the ordinary step, covering in file, and preserving silence. The double time is at the rate of from 165 to 170 steps a minute, the length of the step being about forty English inches. The double time is executed without cadence and as rapidly us is compatible with the preservation of order.

The men fall in at order arms. The manual is wonlerfully sim. plified, the only cadenced morements being order arms. present arms. and left shoulder arms. Making the execution of the manual audible by bringing the picce nmartly against the hand or lody or bringing the butt of the rifle sharply to the ground, is forbidden.

The lef shoulder is executed from the order; the present. from the left shoulder; and, conversely, the left shoulder from the present.

Loading is executed from the order, the left shoulder. or after firing. Ready is executed from the left shoulder. The piece is habitually used as a single loader; the magazine being used only by special orders. Draw cartridge and unload magazine are executed either from the left shoulder or order.

In marches, including those to the drill ground, the piece may be carried at ease, on the right or left shoulder. under the arm, or suspended by the sling from either shoulder. When marching in the cadenced step the command "Right shoulder antms" may be given.

The drill-book provides for firing standing, kneeling. or lying down.

Fix and unfix bayonets are uncadenced morements.
The "attack position" is very similar to the trail arms. in Upton's tactics, except that the piece is more nearly horizontal.

The above mentioned movements comprise the sum-total of the manual of arms of the German infantry. It will be obserred that such positions as carry arms, support arms, arms port, secure arms, reverse arms, and rest on arms, are entirely ignored. Bayonet exercise is tanght in the gymnsstic training of the men, and no mention is made of it in the drill-book. The oblique aimings are omitted, the front of the firing line always being perpendicular to the direction of the aim. As already stated, there are only three
cadenced movements in the manual: the other movements being executed with celerity, but with no attention to nice uniformity of time.

The regulations for skirmish drill are so complete as prectically to exhanst the subject. As soon an the recruit has made some progress in marching. loading and aming. and carrying the piece on the left shoulder, his instruction in skirmishing begins. The simpler morements are explained to him. leging executed ly tmined moldiers. He is then allowed to execute the moremente himedr: In order that his instruction may lee complete. an opponent is pitted agrainst him. He is instructed how to act at close and long ranges, and particularly how to utilize the inequalities of the ground to shelter himself and to impere his aim. The recouts are aken out into the country at least twice a week. in order that they may practice on diversified ground. The skirmishers are practiced in surmounting obstacles, (jumping atcoss ditches, climbing walls, fences. ete.,) and in stalking their opponents in the field. In firing lying down. the position is exclusively "prone." no back position being allowed. Carefuland minute instructions are given in regard to tiring from behind trees. breastworks, etc.

## the platuon.

The company is divided into three platoons; the platoons are divided into hatf-platoons; and these again into soctions. Fach section contains from four to six files, a file consikting of two men (front and rear rank). Each platoon consists of sixteen files at least. On a war footing the company numberd 250 men. The platoon is formed in two ranks. Each man touthes his neighbor with the elbow, without crowding him. The chlef of platoon (a lieutenant) is two paces in front of the center of hik platoon. A noncommissioned officer is on each flank of the front rank. the remaining non-rommissioned officers being distributed as file rlosers two paces in rear of the rear rank. The field musicians are seven pares in rear of the center of the rear rank.

The firing is by volley or by file. The file firing is either slow (using the piece as a single shooter), or rapid (with magazine). The signal to cease fring is given with a whistle. Which forms part of the equipment of the company officers.

The forward march, oblique march, and wheeling of the platonn are similar to the corresponding morements in CPros's tactics.

Column of files is formed by facing, from a halt or on the march. In the latter case the movement resembles "by the right (or left) flank" in Uptos.

The column of fours is unknown in German tactics. Column of sections is formed by each section wheeling to the right (or left). At the command "By sections, right forward, march." column of sections is formed in a manner resembling, in all essential features. the formation of column of fours by the command "Right forward, fours right, march."

Line is formed from column of tiles by facing. or by moving right (or left) front into line.

Line is formed from column of sections. by wheeling. or by mos. ing right (or lent') front into line.

Another movement, wheeling into line by sections. is almost identical with tepros's "On right into line." substituting sections for fours.

The changes from column of files to column of sections and the reverse are similar to the movements. Form fours. right (or left) oblique," and "Right (or lett) by twos." respectivels. in terms.

The change of direction in column of files or sections is similar to the change of direction of column of twos or formers in our tations.

At the simple command "Deploy." the skirmish line call be formed from any tormation of the platoon, and in any direction. The men merely move to the right and lett from the center. until there is an interval of one or two paces between every two men. To deploy on an oblique front, the command is. for instance, " Direction of the windmill, deploy!" At this command the center skirmisher moves in the direction of the indicated object. and the others, deploging to the right and left. place themselves on the same front with bim. Deployment at a halt, without gaining ground to the front, wexecuted by tacing and moving to proper intersal.

The movements, forward to the rear, oblique, and to the tlank, are similar to the movements prescribed in C'ptos. All flank movements in the face of the enemy are to be avoided. The difficulty of manœuvring under effective fire is recognized, and as in an extended line, and in the heat of action, the men necessarily get somewhat out of hand, group leaders are provided, (generally at least one to a section) from the non-commissioned officers.* Some non-commissionell officers, about one to each platoon, are not used as group leaders, but remain behind the skirmish line to assist in its general supervision.

- On a war footing. a German company consists of oue captain, one first leutenant, three eecout lientenanks, one frel worhd (similar to our first sergeant, but possessing morr authority.) one fiharich (an "ensign designate". on probationary service preparatory to pro motion.I one vice-folduebd, four sergeants, thirteen corporals, twenty four lance corporil two drummera, two busters ( who are alto ficrs, and two hundred and one privates. This or ganization eadily admils of a group-leader for every fire privates.
. Rushes." seldom exceed one hundred paces. Xo firing is permitted while adrancing, save in exceptional cases. ${ }^{\text {nd }}$ then hy order. The most careful "fire discipline" is maintained as long as possible. and the most explicit orders are given to the men on the firing line. For example: "At the artillery on the green blutif: rear sight 800 and 000 meters: Ready : Lim: Fire: Load:" or. "At the skirmishers lying down straight in your front: rear sight 501 meters: Fire by tile! "

In firing, the platoons are separated by a distinct interval. and kept well in hand. Two or three skillful entimators of distances are kept in the vicinity of the platonn commander. Volleys are limited to the begrinning of the fight, and to occasions when the platoon is not itselt under fire.

The skirmishers assemble by closing in on the center skirmisher. who either latts or continues the march, as directed.

THE COMPANY.
The captain is mounted when his company is combined with others.

Platoons and half platoons are numbered in the mompany from right to left. Sections are numbered in the phatoon from right to left.

## The Company Column.

The compans being in line at a hatr, in two ranks, the command is. "Form company column." at which command the second platoon stands fast; the first platoon faces to the left, the third. to the right. and place themselves seven and fourteen paces respectively in rear of the'second platom.* . Ill changes of formationifrom line to company column and back agrain into line are executed in uneadenced step. On the marel, the center platoon continuef the march: the other platoons execute the movement at double time.

At the cemmand "Close in, march!" the platgons close to four paces distance. This distance is exceptional, the normal distance being seven pacer.

- The formation of the company column illustratea in a striking mander tbe change to the rierman drill. The company column is now practically the same as offore, but it is interent ing to compare the simple method of forming it with that prescribed in the old dr 11 regula. cions. The company way formerly in three rauks, and divided into twy dirblans. At the com
mand. 4 Form company column." the first and second ranky of the leit division atood fant. and the rea rank. facing about. moved twelve paces to the rear, balted, had faced about. The frot and second ranks of the right divivion faced to the left and marched toa poattion six paces io rear of the left dirtion. when they haited, faced to the righa, and corered It. In a aimilar manner the third rank placedituelf in front of the third rank of the left diviston. the company being thus furmed inw a column of tbree platoons at six paces distance, each pla. toon being in twu rauks. The movement could be similarly executed on the right division.



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 －Risht（or hett，hy companies＂in the athon at the battation in

 loros．
 feld as athing of the pat in evident trom the retomion of the

 of the third platoon move at comble time and pate themaile in rear of the preceding phatoon．At the commatm＂．iquare．＂the learling platoon halts：the center platom whene hatit the right and hati to the left，and the third platoon faces atome The drill hook states that no care should be bestowed upon premision of move． ment in torming square：the great object is to get the matll in reati ness to tire atfectively as soon as pusible．
 move in line．the center platoon tander the the rist and hett atat marching in two columns of tiles．
 to $\cdot$ form in the shorest way




Fig. 4.


To charge with the bayonet, the company being at close order. the "attack position" is taken and the command rushes forward hurrabing.

Whenever obliged to retire in the presence of the enemy. the troops are required to move in cadenced step.

## 'I' DEPI.OY THE ('OMPANE AS $\triangle K I R M I S E R E R$,

It the company be in company column, the leading platoon deploys; if in line. a desigmated platoon deplove. The other platonns. in column or line, form the support. The skirmish line is reinforced either by extending the flanks or byinserting reinforcements in intervale of the line. No fixed rule for the distante of the support trom the tiring line is given: on drill it may be 150 paces. Supports are in line or column according to the rature of the around, the object being to get the best shelter. If at a thalt, the supporta may be either standing. kneeling. or lying down. according to the circumstances of ground and action.

## THE BATTALION.

The movements of the German battalion are fex and simple.
The battalion consists of four companies, alwaya formed in company column.

The normal formations are only three in nuinber; namely, the double columm. the deep column. and the broad colamn, as shown in the diagrams.

The double column is used for movements beyond the zone of fire.
The deep column is used when the hature of the ground, or the circumstances of the battle. require a narrow front.

The broad column is used in parades, and in battle when more breadth than depth is required.

Being in double column. to form deep column, the two companien on the designated side stand fast, and the other companies place themselves in their rear, moving in the shortest was.

Being in double column. to change to broad column. the leading companies stand fast. and the rear companies place themselves on their right and left, or both on the right or left. as indicated by the battalion commander.

Being in deep column. to change to double colymn, the two leading companies stand fast; the two rear companjer move to their poaitions on their right or left.

Being in deep column, to change to broad column; the leading company stands fast; the other companies move by the whortent lines to their positions abreast of it.

Being in broad column, to change to double column, two companies, side by side, are designated to stand fast; the others more in the shortest way to positions in their rear.

Being in broad column, to change to deep column, a designated company stands fast; the others (those nearest the designated company first mplace themselves in its rear.

When these movements are executed on the march. the companies described above as standing fast, contilue the mareh; the others move at double time.

The only other battalion frovements prescribed are the changes of direction while moving io columu. The change of direction of the deep or the double coldmn is made by the leading platoons wheeling, the others followng on the same ground. In broad column the company on the fiank towards which the change of direction is made, wheels at once, moves forward in the new direction a distance equal to the depth of the column, and halts. The other companies oblique in the designated direction, and when they have arrived at proper distance, wheel and place themselves abreast of the leading company.

No fixed rules for the deployment of the battalion are given. The deployment admits of many different combinations, according to the number of companies deployed. Circumstances may render it necessary to deploy the whgle battalion at once, but generally one or two platoons will form the first firing line, the companies from which they are taken following as supports, and the remaining companies as reserves, until the progress of the fight absorbs them all in the firing line. No fixed distances from firing line to supports and from supports to reserves are given, these distances depending on the nature of the ground and the urgency of reinforcing the firing line.

> the regiment.

The regiment consists of three or four battalions. The regimental commander gives only preparatory commands or orders; the battalion commanders give corresponding commands of execution.

The battalions composing the regiment are formed each in double column. If the regiment consists of three battalions, one is formed on the interval between the other two, either in their front or rear. If it contains four battalions, the battalions in the second line cover those in the first. The normal regimental formation is in one or two lines of battalion double columns. The interval between the battalions in the same line is twenty paces; the distance between the lines is thirty paces.

The regimental evolutions consist of simple morements forrard and to the rear. wheels, and marching by the flank, on principlea prescribed in the instructions for the company and battalion. The only reginental morement especially described is the change of front by wheeling; the change of front never exceeding one-eighth of a circle. The command is (for instance). "Regiment. on first lattalion, one-eighth right. wheel!" If the regiment be in a single line of battalion double columns, the tirst battation wheels to the right, marches a distance equal to the depth of the column, and halte. The remaining battalions move in the shortest way, and place themselves abreast of it. If (as is generally the case) the regiment consists of two lines of double columns. the firgt battulion. after wheeling. moves forward a distance equal to the depth of both columns. and the other batations take their places be the shortest way.

The manner of deploying the regiment is left entirely to the dis. aretion of the colonel. Circummtances very rarcly require the sinfinttancous deployment of all the batalions. In the general case of the deployment of only a portion of the regiment, the battalions retained are held in echelon behind one or both wings; in rare cases. behind the ceenter. The object. in every case, is the prompt reinfurcenrent of the firing fine, combined with the ohject of finding shelter for the reserves. On the advance. the deplofment is made on the leading battalion: on retreat. on the rear battalion. The reansembly is generally executed on the march, and if the direction of the mareh: otherwise. on the original line in the nost practicable way. The assembly formation depends on circumstapees, and is left entirely to the colonel.

## the brigade.

The brigade consists generally of two regiments. which are placed rither side by side. or one in rear of the other. In the former case, the battalions of each regiment stand one behind another. and abreast of the corresponding battalions of the other regiment. In the latter case, it the regiments have the same number of battalions, those of the second regiment cover those of the first; if they have not the sime number, the battalions of the second cover the intervals of the first.

The evolutions of the brigade are limited to the simplent movementa. and are lef entirely to the diescretion of the brigade commander.

The deployment of the brigade for battle is based on the principle of allotting a separate task to each regithent, whenerdr practicable; and the formation side by side is, therefort, preferted. "If cir-
cumstances require the formation of one regiment in rear of the otber, add the deployment is. consequently, made with one regiment. the battalions of the other take the best positions for deploying to the front, or (more frequentily) assemble as echelons behind one or both wings of the first.

THE division and corps.
The movements of the division and corps belong to the sphere of grand tactics, and depend on the generalship of the dirision and corps commanders. No attempt is made to hamper these commanders with fixed rules, and the drill regulations are silent on the subject.

## battle tactics.

A large portion of the drill book is devoted to instructions rela. tire to the conduct and handling of troops in battle. This part of the work is of peculiar value. The following is merely a synopsis of its most salient features:

On drill the natore of the ground should always be considered. and the movements regulated according to the terrain. But it should be borne in mind that the attainment of the object of the fight is even more important that taking advantage of natural shelter. Whenever practicable at drill, a supposed hostile line should be marked by flags and a few men. Proficiency in skirmish drill is the highest proof of the efficiency of a command.

Battles must be begun by the troops in extended order: but close formations are still necessary for the shelter and proper handling of supports and reserves. Enough skirmishers should always be used. No attention should be paid to keeping precise intervials on the skirmish line : even less regard should be had for accurate alignment. Magazine fire is used in the final preparation for assault, or. on the defensive, for the repulse of assault at close quarters. It is also used for the repalse of cavalry, and to oppose any sudden and immediate attack : also in firing upop a defeated and fleeing enemy. Great stress is laid on economy of ammunition, and all useless and ineffective fire is to be aroided.

Practically, the only movements of the firing line are forward and to the rear. Small oblique morements may be made. No movement by the flank should be undertaken for any distance. In objection to rushes lies in the increased difficulty of getting troops ont of cover as they draw near the enems. A continuous adrance should. therefore, be made whenever practicable. The troops fire while in motion only when retiring, and then only by order.

Infantry must be superior to opposing infantryin weight of fire or in morale in order to defeat it. If infantry has mnimpeded fire it must always repulse cavalry. Infantry which does not dare, through lack of confidence. to receive cavatry in a deployted line, when its own flanks are protected by the fire of echelons in rear. will not find safety in a square. Skirmishers should know that while running they are detenseless agaiust cavalry. Intantry opposed to infantry must aroid close formation. eren when threatedned by cavalry. Intantry whould be able to adraner on open ground agraipst hostile cavalry. unless the cavalry is aided by superior intantry or artillery tirẹ. or is so much superior in number that it can utack at the same time in several different directions. . square should bé formed only when the infantry is short of ammunition. or its morale is shaken by heary losses, or when its retreal over open gronmit menaced by cavalry. The cavalry must be considered as havitur gatined a great adrantage it it can compel the infantry to halt or take a tormation unfacorable to the greatest development of tire.

Artillery is superior to infantry at long ranges. At 1.000 meters the equality of the two arms begins to be felt. At short ranges the intantry is wuperior to the artillery. The intantry mast therefore take advantage of the cover afforded by the gropind, and close in upon the artillery as quickly as possible. firing first|upon such teams as may be risible, and next upon the cannoneers. Infantry may be eftective (by using "high-angle" firis) against artillery at long range, but at the expense of a great consumption of ammunition. Infantry should never feel itself called upon to ruplate artillery in competing with hostile artillery at long range.

The intrenching tool must be frequently used. but commanders. must control its use, instead of being controlled byt it.: The premature strengthening of the ground is a positive disadrantage, as it interferes with the free movement of the troops. Thet greatest use of the intrenching tool is on the defensive. It id mainly used on the offensive in strengthening captured positions. The intrenchments should consist of "rifle trenches." which speedily furnish cover tor the men. and, which may atterwards be deepened and strengthened it circumstances require.

In all exercises in time of peace the officern mist be in the positions that they would occupy in actual battle. The mounted officers frequently dismount at drill, in order that the men, being accustomed to seeing them on foot, may not be demoralized by seeing them dismount when under beary fire in battle.

The general remarks on the subject of attack and defense contain very little that is new to oticers familiar with the writings of Shaw, Home, or Leyley Grahay. The formation in either case should consist of a firing line. supports and reserves. The proportion of troops allotted to each depeuds on circumstances. The part which develops the fight should be as weak as possible. consistently with the proper performance of its duties: the reserve should be as strong as possible. Generally, in opening the tight, not mor than one-fourth of the men should be in firing line, and not less than onefourth in reserve. Care should always be taken to protect the fanks, the reserves being generally in their rear. The distances from firing line to supports, and from supports to reserve. vary These distances are greater in open than in closed ground. In open ground they may be 200 meters or more

It is not sufficient to carry the enemy's position. All villages. hamlets, woods, etc., forming part of the position, must be occupied. and the attack aninterruptedly continued until the enemy is completely thrust off the fiell. Further pursuit is not made by a continuation of the attack, but is conducted by bodies of troops especially deaignated for the duty.

Success depends on superiority of fire, and, as a rule, this superiority can be best brought about by flanking the enemy's position not merely the general position. but portions of the hostile line. All flanking movements must, bowever. be considered and prepared at the first deployment. Turning movements attempted with the foremost line of infantry already deploged are rarely successful, and canse a dangerous scattering of the troops.

An effective fire on the approaching enemy is the essential requifement of the defense. Extensire use of field entrenchpents should be made by tronps on the defensive: but the position should not be fully occupied until the direction of the enemys attack is ascertained. A good retreat can be made only under cover of an unshaken reserve; but the reserve must not be kept out of the tight when needed, merely in order that.it may cover a possible retreat.

In all movements the battalion is regarded as the unit, but large discretion is given to the captains of companies. A continuous waiting tor orders would make proper and timely action of the com-1 panies impossible." The company must keep its proper place in the battalion, and must retain connection with the other companies. Whole companies are not deployed until necessary; for, once deployed, the men are to a great degree out of the hand of the company and battalion commanders.

There is no general rule as to the number of companies in the first Iine of the battalion at the beginning of the dombat. Whether all faur companies are in the first line, or only one (dirided into two or three subdivisions from front to rear), depends on circumstances, and is decided by the battalion commander. Not the least of the battelion commander's duties consists in directing the supply of ammunition from the rear to those parts of the firing line where it is most needed. He is generally with the deserve.

The regimental commander gives a general direction to the whole regiment. but interferes with single companies ouls when it is necessary to do so to prevent a miscarriage of the general plan.

The cooperation of battalions fighting side by side is habitually governed by indicating an object in front. No altempt is made to keep them aligned, but the touch is, in gencral terms, indicated to the center, right, or left.
$\stackrel{-}{\text { regi- }}$
The regimental commander determines the nature of the regimental attack, the number of battalions for reserve. the proper extension of front, ete. He is generally with the reserve; but in the beginning of the fight he should be well to the front. in order to make his dispositions according to his own observation of the condition of attailes before him.

Only a brigade consisting of three regiments, or of two regiments and a "jaeger" battalion,* has the advantage of a division into three parts. When divided into two parts, the brigade commander must detail a reverve accoming to the object of the fight, which reserve should never be less than a batalion: The brigade commander whould be well to the front at the beginning of the fight; then, when the brigade is well engaged. he shouk be where he can best control it. The task of subdividirg the command according to the object in view forms the most important dity of the brigade commander.

The drill regulations do not attempt to hamper commanders with hard-and-fast rules, but leave very much to their diveretion. The latitude left to subordinate commanders is never allowed, however, to extend so far as to compromise the safety of the command or the proper conduct of the action. Care is always taken to preserve order and cohesion.

The concluding portion of the drill book is devoted to the subject of ceremonies, and contains nothing of real tactical interest to foreign officers.

[^0]Eren the outward appearance of the Irill book gives an idea ot the wonderfully condensed nature of the German infantry tactics. A small volame of 208 pages, practically the equiralent of an equal number of pages of C'pton's Tactics. containsall the drill regulations deemed neceseary. from the instruction of the individual recruit to the handling of a brigade. The only inference to be drawn from this fact is either that the Germans have. in their efforts to obtain simplicity, eliminated valuable portions of the drill. or else that our

- drill system contains a useless amount of mere ..embroider.:. Prob. ably the latter inference is the correct one. Without attempting to point out all the unnecessary or obsolete features of our present system, it is easy to call attention to some of the more prominent superfluities.

The simplification of the manual of arms is by no means the least important feature of the new drill system of Germany. When we reflect upon the amount of time consumed in every company in our service in mastering the extended and intricate manual preseribed by Upton, and when we consider further that our militia waste so much time in obtaining a nice execution of these movements, that (in many instances) they have no time to spare for skirmish drill and target practice, we cannot but regard a corresponding simplification of our manual as a "consummation devoutly to be wished." This simplification would be an easy matter. Carry arms is onnecessary. for the reason that all equally good basis for the manual can be found in the right shoulder or order. Support arms is useless. With a rifle that has a bolt instead of a hammer. this position cannot be taken, and in any case (ruch. for instance. as in successive formations) the right sboulder or order would answer equally well. There is no necessity for arms port. A sentillel in transmitting his orders could do so just as well at order arms or pa-- rade rent. In challenging and receiving the countersign. the sentinel does so at charge bayonet. and it is not clear that arms port is - of the slightest practical value under any conceivable circumstances. Surely, in advancing to an attack. either the right whoulder or trail is more natural and better. Secure arms is a mere relic of the days of the fint-lock muskel. Reverse arms and rest on arms are bits of fancy drill that never were ot any use. and should have been eliminated trom the tactich long ago. If German soldiers can march with shouldered arms in the funeral procession of a dead Emperor, a similar position should answer all the funeral purposes of the soldiens of our democratic nation. l'arade rest could be substituted for reat on arms. Probably no other movements in
the manual are so difficult tor the recrfit to learn wase tho pieces of lugubrious tactical nonsense. and when he has qiastered them. his efficiency as a soldier has not been increased one $\boldsymbol{r}$ bit.

Bayonet exercise, as taught generally in our army. is simply a laborions farce. Whether this exercise be retainet in the tactics or taught in a separate manual. as target practice in. matters little. While the bayonet is retained as an infantry weapon. the men should be instructed in its use. and thin can best be done (as the Germans do) by giving the soldiers casques. padded jackots and whalebone batonets. and pitting them against each other in regular fencing exercise. Paragraph 121 of C'pros's Tactics does not cover the case at all. If the exercise be of value it should aheays be "practicable" to have the necessary equipments. and the exercise should not be undertaken without them. The present system of bayonet instruction is about as valuable $a \times$ would be an attempt to teach boxing by laring the pupils practice the varioun parries and connters against ampty air, without even the benefit of lucid explanation as to their ohjects. I have heard only two excuses for our present system of bayonet drill: one, that it is good exercise. and the other, that it maken a rery showy drill. As to the firnt. it in sufficient to say that the same amount of time bestowed upon the gymnastic training of the men would probably produce better results. Ax the second. it cannot be denied that nothing in all our drill is no leantiful as a company or battalion with open files, executing in unison the volts.: passades, parries and thrusts: but if spectacular effect be the object of the drill. it would be well to place the kibalfy Brothers in command of the army. and velect our captains from the coryphees of the Black Crook.

With the Germans, as with un, target practice is tanght in another manual than the drill book. But unlike ours their liden of instruction do not "rum in parallel grooves." never meeting and never conveying to the mind of the private soldier the idea that they are for one common end and am. With the Germans. target practice and infantry drill arc almost inseparably connected. The oompanies are marched to the rangen, and when the tiring is finished they are marched back to their barracks. In the individual firing the men are in heavy marching order, exactly an they would come upon the battle-field. They have no ."skirminh rums" like ours. but they have a "shooting exercise" much more valuable than angthing known in our system of drill. As the gentlemen present may not all be familiar with the exercise, I may be pardoned for deacribing it at length as observed by myselt.

While I was in Berlin, last July, it was my good fortune to receive an invitation to accompany a battalion of the Kaiser Franz Regiment of Grenadier. Guards from the city to its shooting grounds at Schoeneich. The battalion went by rail to Zossen. (about 20 miles from Berlin), then disembarked from the train. and marched to the shooting grounds, about four miles distant. The march was conducted as though in a hostile country. Riding abeal with two fieldofficers, whose duties were similar to those of our inspectors of rifle practice, I came in sight of a long line of targets. which represented artillery and infantry. Op the thank. and concealed from the line by which the troops were approaching, were targets representing cavalry. The battalion wap approaching. apparently unaware of the precise location of the tangets. The "point" catie within view of the targets and halted; the advanced guard, havtening up, deployed: and, to my amazement, the artillery taryets opened fire! The conmander of the advanced guard gave the command. "At soo meters." and the sights were adjusted; then. "Ready, aim, tire!" A bunch of little clouds of dust showed that the range was short. In the meantione, the injantry targets opened fire. The advanced guard adjusted its sights at 900 . meters, another volley seemed to show that the range was correct, and file-firing began. My mystification at the apparent "shooting back" on the part of the targets was cleared up by the explanation that there were cartridges buried in the sand in front of the guns and fin front of the infuntry targets, which cartridges were exploded, by means of lanyards and triction primers, by men sheltered in pits. The advanced guard mored forward. Two other companies coming up from the main body followed as supports in echelon on each flathk, the tourth forming the reserve. The distance between the firing line and supports, and the latter and the reserve was about 150 yards. As the battalion advanced, the caralry targets came in sight on its right. The right echelot quickly wheeled half right, and opened magazine fire, which was continued until the cavalry was presumed to be driven back. when the company resumed its forward morement. The battalion approached to within 200 yards of the targets, the echelons were now on the extension of the firing line, the reserve reinforced the line, the whole battalion opened with magapine fire, and the charge was made, stopping short of the targets.

This concluded, the bits on the targets were counted and recorded. The shooting was not as good as that of our men, for the reason that a German is not naturally as good a marksman as an American, and the number of cartridges allowed each man per year for target prac-
tice is much less than the allowance in our service. But the drill was vastly superior to anything of the kind that wif have. The entire tactics of attack had been applied, and in conjunction therewith was target practice of the most valuable kind. It in, of course, impossible (and it is hardly necessary to add undesirable) to have on the drill ground all the circumstances of actual combat ; but in this shooting exercise the similitude of battle was as great as possible, while our "skirmish runs" do mot resemble a battle any more than they do a Fourth-ot-July celebration. Our soldien at skirmish target practice are in light marching order-in tact encumbered with nothing but their arms and ammunition-and every condition seems to be arranged rather with a view to obtaining a hifh tigure of merit than to accustoming the men to the circumstandes of batte. Instead of combining target practice with the battalion battle tactics, we devote a period to Cirton and another space of tipe to Blent, without any attempt so to combine them as to make of them consistent elements of a tactical whole. A step in the right direction has. however, been taken by the institution of summer camps of instruction at which problenis in minor tactics will introduce many of the practical teatures of war.

One feature of the German tacties which should be introduced and emphasized in our own, is the adaptation of all drill movements to the ground on which they are held. Such a thing has been seen in our service as a commander paying the most carefal attention to the intervals and alignment of his skirmishers. and|then halting the line near the base of a slope, and opening fire when his men could aim at nothing but the sky or the hillside, while tha reserves were on a crest in rear. in full view and without the slighent cover. It goes without saying that such perfunctory drill is hardly better than none at all. It should continually be borne in mind that the sole object of drill is to prepare soldiern tor battle. In skirnish drill, almost every movement should be made with reterence to a line supposed to be occupied by a hostile force, and with the double object of securing shelter and obtaining an effective fire upou the enemy. If the intervals are not accurately kept, and the alignment is not nicely preserved, no matter, so long as these two paramount ob. $/$ jects are attained. The drill ground should be regarded us a bloodless battlefield, and then. in action. the battletield will seem only like a bloody drill ground. In our present tactict there is no at. tempt to indicate the manner in which any given movement could be applied to the circumstances of war, except in paragraphs 359 and 745 .

With the Germans. skirmish drill is regarded as the highest test of the efficiency of a command. Yet with us. no such high importance has yet been assigned to it. It would be interesting to know: in how many cases during the past year the department inspectors: bave required skirmish drills. partaking in any degree of the nature of battleitactics, at the different posts inspected. and the degree of importance that they hape placed on it in estimating the efticiency of the troops.

A striking feature of the German drill system is the great independence of company commanders. Not only on drill. but in administration, the greatest latitude is allowed them. The police of the German War Department seems to be to select good men for captaincies, to beave to them everything pertaining to the companies as far as possible, and then to hold them to a rigin responsibility for the efficiency of their commands. Indeed. this is but one teature of the wonderful decentralization of the German system. to which some writers are inclined to attribute the military success of the Empire. The growing tendency to centralization in our service is, I think, recognized and deplored by most company commanders. The German captain has much of the independence of a colonel: an American captain is, too often, scarcely more than a lieutenant.

I trust that'I am far from being a blind wornhipper of the German military system. even in its tactical teatures: but the German drill system is certainly superior to our own, and there is much that we can learn from it. While in the matter of organization and armament we need some important changes. our greatest need is a change in the system of tactical instruction. Whether we copy from the Germans in tactical details or not. we should imitate them in recognizing the fact that drilling is simply preparing to fight. and that everything that does not have a direct bearing upon the duties of a soldier in actual war is a mere superfluity-mere embroidery which may be "magnificent." but which certainly " is not war." As our. small army is a model for the militia, and in time of war for volunteers, it is desirable that our drill be as simple and business. like as possible. If "simplicity alone promises success" in an army composed of regnlar troops, and drawing its reinforcements from men who have passed through years of military training. as is the case in Germany, still mory does it become a necessity in a country like ours, where all great wars will be fought by armies coinposed of men suddenly called from the counting-house. the work-shop and the plow.

ARTHUR L. WAGNER,
Firat Licutenunt Sixth Infuncry.

## LETTERS ON CAVALRY. BY PRINCE KRAFT ZI HOHEN. JOLE INGELFINGEN.

TRANSLATED HY colonel K. P. HCGHE:
inspectur general., I.s. a.
FIFTH LETTER.-EAVING THE STRENGTH OF THí INFANTKY.

$I^{\text {s }}$my last three letters I hare not mentioned dne of the results which is ohtained lys our cavaly, of a special seqrice which they do tor the infantrys. athid tor which that arm ot the service is espe. rially thankful.

It fatigues the enemys infantry and relieves our own infantry of a great deal of exertion. It thus cuables the infantry to accomplish long marches and so turthers the views of the commanders. Whoever has made a lay:s mareh in which each woml and every locality had to be carefully reconooitred and explored by the infantry of the advance gqard, appeciates that the constant hesitation and waiting tired the infantry more than the distance marched. Whoever will compare such a march with the marches we made in 1870 . when our infantry could marel as in time of peace until the dioment for entering the action. will appreciate the service which oar cavalry rendered our infantry. It our infantry had been compelled to put out distant patrols and to establinh a chain of outposts every night, then they would have been as slow breaking camp in the morning as were the French, and they would have leeen more tired by an advapge of nine miles per day that they were by mareh of eighteen mikes under the protection of a veil of cavalry.

It is evident that our infantry masses could sot liave made the marches they did. and that the combinations of the commanders would have been marred, Fien as these marches were dxecthted the exertions of the intantry wore very wevere. The Guad Corps marched from the Khine on the 3 d of A ugust. with about 30 .ond infantry for line of battle. Its canualites in action were 8.000 at Sk. Privat, and 350
at Sedan, and it numbered on the morning after the battle ot Sedan 13,000 , and on the day of the inclosing of Paris 9,000 men for line of battie. We thus see that it had lost 12.000 men by reason of casualties of the march. Had the cavalry not relieved them almost entirely of outpost and patrol duties; had it not equabled them to march in comfort as in times of peace, the Guard Corps might per. haps have reached Paris on the 19 h , of September without its in . fantry.

The marches made in 1870 exceeded in length those of any previous campaign. For example: the collective marches of the Guard Corps from the 3d of August to the 19 th of September amounted to about 555 miles, and for the troops which took part in the operations againet Montimedy about 58 s miles. In this time the corps had but four days' rest and took part in three great battles. The work of the other corps was about the same. Without the protection of the cavalry veil across our trout, such marches would have been im. possible.

Our adrancing intantry divisions always pushed out an alvance guard as a precautionary measure, which took powition behind some farorable accident of the terrain and put out outposis. But the only object of this alrance guard wan to serve an a support to the cavalry in case it should be driven in, and the outponts could limit themselves to placing guards and videttes in front of the villages. in order to prevent mischief on the part of the inhabitante. and to make sure that any reports, sent in hy the cavalry, might reach their destination with the least possible delay, even during the night.

As a rule, after the days march the infantry went into cantonment quarters; the marches and resting places were arranged solely with regard to the wants of the troops. and it was not necessary at any time to so change them as to cause extra exertion to the troops by reason of unforseen action on the part of the enemy. To do this it was necessary that the cavalry should reconnoitre and explore the country so far to the front that any approach on the part of the enemy would be reported at least twenty-four hours before any collision could possibly take place. If in exceptional instances the advance guard was pushed st far to the front. and consequently so close to the cavalry, that the possibility arose that it might not be able to assemble in readinest for action with sufficient promptness from the cantonments in the ricinity, then special instructions were given that the advance guard of the division should bivouac. The infantry of the emps bivonacked only on very rare occasions. and in fact only upon occasions of massing the troops just prior to, and
after the decisire actions, when cantonments could not be found for the accommodation of all the troops; before and after the battle of St. Privat; after the battle of Beaumont: and after the battle of Sedan. Even before the battle of Sedan the whole of the infantry of the Guard Corps was cantoned under gend roots. At the time of the (hange of direction in our mareh from the west th the morth the Corps diAmee were drawn close together and it was necessary for the Guard Corps 10 hicouac for a tew days becaluse the marehes for several days in succession were so long that the distributing of the different corps into cantomments was thought to be a greater hard. -hip to the troops than hivonacking.

On the 2sth of Augnst the corpseached to the position assigned it behind Bantheville and Romagne. on the Amben. The Twelfth Corps was on its right at Dun. These two corps cond not calculate upon any supmert hefore bon of the e3th, and it was posible that Marmanos, who was at Conziers on the eith (eighteen miles from Bantheville) might attack these two (orp) with the united strength of his whole army. At least this seemed the proper thinger to do, and what he must di it he wished to join Bazaine. These two corpe were directed to hold themselves in readinese for artion and to be cautious. A hivomae in position seemed necessary with the two villages of Romagne and Bantherille, on the Andom, in front of us. But while coming into position a clomblharst fell uon us and wet werghody through and through and soaked the groumd. Reposing rontidence in the advanced cavalry, who. in case of an approach of the enemy. would bring us the news in time to enable us to oceupy the position asigued us in ample time the Commanding General assumed the revponibility of allowing the infantry to canton in the two villages mentioned. In tint, the antive eorps found helter from the storm in the romy dwellings, stables an! barns of those villages.

It has heen established liy experience that constaint bivotacking, especially in bad weather. breaks down troops. The practical rule of the General staff. upon authority of Gencral v. Pexper, is that the worst cantonment is better than the finest bivoude. He who has hivouacked in pouring rain can realily imagine with what thanktulness our tired intantry secured the protection of a roof under which they might dry thieir things. To whom are these thanks due? To the caralry which was in front of it. near the enemy, and for its protection bid detiance to the storm and spent the fight under the "pen sky.

But the enemy was not granted such rest. Constantly threatened and harrassed by our cavalry, each moment forced to halt and
drive it off, he must spend a disproportionate amount of time in making a very tiresome march of a few miles. For instance. the French Seventh Corps broke camp early on the morning of Iugust 29th, at Boult-aux-Bois. It was constantly annoyed by our Clans and failed to reach its objective. La Besance, that day : but towards sundown we saw it go into camp at Pierremont. scarcely six miles from Boult-aux-Boix, and the weary infantry must then employ the hours of the night in cookiug and eating, and found little time for that rest which was so necessary to strengthen it for the exertions of the next day. It is not to be wondered at it such tired infantry neglected out-post and vidette duty and thereby afforded us opportunities to surprise and alarm their bivouacs. These alarms were visited upon the French camps in rarious ways. Fiversone knows how damaging such alarms are upon the morale of the troops: how much material in the way of food. cooking utensils, hagrage. ette. is lost; and how much the deprivations. hardships and suffering are increased by them. The reports of the French troops sutticiently testify to this. The most complete surprise was that of the Corp: of Failly at Beaumont. The destruction of thin whole army corps was the result of it. The French army was already weary before the beginning of the decisive battle of Sedan. parts of it were dis. couraged, and the bonds of discipline much disturbed, and this result is mainly owing to the work of our caralry. as it is also due to our cavalry that our commanders had such exact inffrmation of the movements of the enemy that they were able to beset him with certainty.

Upon the other hand the cavalry held all these disturbances far from our infantry. In the entire march from the Rhine to Parin our infantry was not alarmed a single time by the enemy. Eren the alarm signal was very rarely heard. In the Guard Corps it was heard but twice, on the 17th of August, and before daybreak on the 1st of September. Upon beth occasions the object of it was to collect the troops for an adrande against an enemy who was still sereral miles distant. and the order, which immediately followed the alarm, gave the troops time to arrange and secure everything quietly and in order before beginning the march.

On all other days of this part of the campaign the infantry was put in motion by the regular:"order of the dar." which was gener. ally issued the day previous.

In addition to the two harmas mentioned. the .r regular order of the day," prescribing the order of march for the 2 隹h of August.
was followed by a rounter order. as we were compelled to change direction to our right to meet MacMahos.

The movements of our infantry for forty-five of the forty-eight days' march went like clock work. It is not posibibe to calculate the economy effected in the physical forces of the troops by advising them hefierehand of what they have to do. by giving them a foreknowledge of the exertions experted of them, whon they can have their meals and rest without disturbance and it was due to our cavalry that our leaders were enabled to direct our infantry in this masterly manner.

It has occurred to me to classity the services of our eavalry during the lant war by adding a short recapitulation in order to make a hasy of these facta for turther statements.

First.-The cavalry divisions scouted the country far in front of our main army. hovered around the enemy's army and prevented its commanders from learning anything of our movements, while it kept our own commanders constantly informed of the movenents of the enemy. It "mabled our commanders "to give the law" to the enemy. as Chatsewter expresses it; i. e. only ta fight when and where we wished. That was half the victory betiove the action began. The anemy groped in darkness while ourdeommanders naw rearly. In a strughle hetween two persons one of whom can see and the other not. the latter must suffer defent. although he may be the stronger. Clyses robbed the Cyclop of his power by putting out his ere.

Srond-The cavalry divisions fatigued the enemy's infantry while they relieved our own of very much exertion. which enabled it to make much wreater marches than the enemy could. In conjunction with the division cavalry, they performed nearly all the outpost and patrol duty.

Third. -In one battle in which the victory was undecided, but the scales seemed to incline to the side of the enenty, the cavalry, in eonnection with the last efforts of the infantry, decided the battle in our favor.

Fourth.-In rarious battles and actions the davalry shared the rictory by a direct or indirect vigorous pursuit mad increased the results of the rictors.

Fifth. While the otber arms were engaged the cavalry took an active part in the struggle through reconnoitering, covering the flanks. etc.. etc.

Sirth.-One of the purposes of the cavalry in former times was to cover the retreat of defeated troops. Our caralry divisions were
not employed in this manner during our last war, because we did not suffior any decided defeats. In the single untiortunate battle (Coulmiers), however, they did all that could be expected or demanded of them.

It cannot be denied that the results of the operationis of our caralry would not have been so great if the enemy hat applied his cavalry in a similar manner. He held it back as a last reserve. to be used at the critical moment in the old traditional fashion, and it was repeatedly defeated. This shows rery clearly what great value must be laid upon the cavalry. It the enemy had employed his cavalry as we did ours, then there would have been an obstinate struggle between the cavalry prior to the main battle, and afterwards, the cavalry which had won the victory, would have been in condition to play the role ours did in the last war. I do not doubt that our caralry would have come off victorious, but would they still have had enough force remaining to accomplish the work which they performed? I think not, but I imagine that sucb a misfortune would have brought to us the conviction that we did not have too much, but too little cavalry.

## Lessening the field of cavalry work in battles thROUGH THE IMPROVEMENTS IN FIRE ARMS.

## sixth letter. - historical illestrations

THE instructive experiences of the last war give us a basis apon which to estimate what can be expected and demanded of the cavalry in the future.

The duties of the cavalry at the present time, as has been already remarked, are none other than they were in former campaigns. It is always to observe the enems, to veil their own forces, to take part in the final decision of the battle, to profit by the results, or in case of defeat, to cover the tetreat. Their duties are in some measure more stable than those of the other arms, especially those of the artillory, for the chief qlement of the cavalry, the horse, is less subject wo changes through new discoveries than fire arms.

The cavalry is under the necessity of passively looking on while very great changes are being brought about in its special sphere of activity, and while its field of usefulness, in connection with the
other arms of the service, is being increased or decerased; changes that alter or displace the centre of its movement, or the pivotal point about which its special exertions should be concentrated.

Let us tirst consider the part taken by the cavalry in decisive hattles. We hear the opinion expressed very generally, that, since the diveovery and intruluction of the intantry riflid arm, the days of Rossharla and Hohentitedberg canoot return for the cavalry. That cavalry can no longer attack - intact intantry" with any expectation of important results is held as a principle by the cavalry. and ouly a few days ago a cavalry commander of high rank stated to me that he had been tar from satistied with the manner of employing hiv cavalry in the last maneurres. becanse they had made it attack infantry that was rill intact.

The last war. however produced actions in which the cavalry wrung important resulte from tresh infantry In the war of 1566 the infantry was fully armed with rifled weapoms, but they were not all hreech-loalers. We see for example at the beginning of the battle of Custozza the two brigales of J'tiz and BejanoWiss. with a total of fittecu squadrons (at the maximum $2 . f(6)$ cavalry) puhed into ation, the Brigade Praz making a front utack upon the two intintry divisions of IIrmbert and Bixio while they were still intat. They rode down the skirmish line broke through nome kquares. and carried contusion and alarm ioto the third line. The most of the infantry sought and found shelter in the rows of trees in the highly cultivated Italian plain and opened a murderous fire upon the cavalry, which rode back again through their lines. What was the result of this attack? Thirty battalions of the enemy were not only presented from taking any part in the action of the day. but must cyen be reenforced by the Brigade Pistosa. The attack was made shortly after 7 oclock in the morning and at 4 oclock in the atternoon both the afore named divisions of infantry were still held before Villafranca on account of the impression made upon them by this ruthless attack of the Imperial Cavalry.

The cavalry was neither disabled nor destroyed. It remained in front of these divisions the entire day and so: impressed them that they did not risk an adrance to the assistance of the balance of the army. Ahnut io oclock in the evening these cafalry brigades attacked a second time and made prisoners of thonsands who were flying from Monte Croce and Monte Torre, took whole companies peisoners from these divisions, and finally became do audacious as to call upon the commanding general to capitulate. They were finally whecked by energetic fire from the enemy. This cavalry, amounting
to $\mathbf{2 , 4 0 0}$, without support from their own infantry, overcame 25.000 infantry of the enemy (Dirision Ifembert and Bixio. and Brigade Pistoja , and made more prisoners than it numbered. The result of this attack was of vital assistance to the whole army in gaining the victory: It is scarcely to be believed that the Austrians would have been able to hold the field of battle if this infantry could have been brought up to Custozza at the decisive moment.

Our attention is called to another part of this battlefield where another cavalry attack was made upon infantry. It was undertaken with a small force, but, in comparison with the force engaged, the results were greater.

Between 7 and 8 o'clock in the morning an overwbelming force of the Italian army forced back the Brigade Benko, which formed the Austrian right, and, getting possession of the position Monte Cbicor-Mongabia-Fenile, had a position which threatened the flank and rear of the Austrian line of battle very seriously. In was necessary to drire the enemy out of that position, and the Brigade Weimar hastened to the assistance of the Brigade Benco.

The Brigade Piret attacked the advancing enemy on the right flank. If the enemy had succeeded in establishing himself in position before being attacked, it would scarcely have been possible to drive him from it. Three platoons of Sicilian Clans did not allow the onemy the time to establish himself in the position he had just takon. They charged upod his infantry, breaking through the Brigade Pisa and fell upon the Brigade Forti. In the last named brigade a panic arose, and four of the five battalions were broken up and were of no more service during the battle. To be sure, the three platoons of cavalry were almost entirely destroyed, but what did the loss of two officers, eighty-four men, and seventy nine horses amount to in comparison with the results. They caused four battalions to disappear from the field of battle; they created a panic in the ranks of the enemy; they robbed the enemy of the time required to establish himself in the position he had won; and made it possible to recover a position, the possession of which would have onabled the enemy to win the battle.

This result was secured by the cavalry in the most broken country in the world; a conntry in which the cavalry was compelled to keep to the highway, which has many steep ascents and descents, and is lined, on either side, by vineyards, mulberry grores and stone walls.

In the battle of Königgrätz I saw a battalion of the enemy's infantry broken up by shells. A squadron of our dragoons at-
tacked it and captured three officers and serenty men. In the same battle an Austrian battalion, flusbed with success, broke forth from the north side of the Swip-Walde, for the possession of which there bad been a warering fight for hours, and appeared in the open ground. It had broken through the entire Prussiad line of battle, and took the direction of some timber lying off towards llneweowes. A single squadron of hussars, not exceeding one hundred men, took it prisoner. Sisteen officers and six hundred and sixty-five men (infintry) laid down their arms to one-sixth their 'number of caralrymen, and without loss to the latter. The battalion was surprised and attacked betore it could offer any resistance.

Thegreat cavalry contests about Königgriatz, with which it can be taken for granted all are familiar, have been spoken of by many military writers as resultless cavalry duels. But tho fact that a cavalry duel took place establisthes the consequent fact that the contending forces both recognized that the terrain was suitable, and the time had arrived for the proper employment of the special serviecs of the cavalry. That the employment of the cavalry was useless cannot be established. When the position of the Austrian army is examined, how it was posted at 4 oclock in the alternoon of the 3d of July, the great bulk of it being enclosed on threesides, it can not be denied that a great catastrophe, such as Sedan, soemed immi. nent. Already a great portion of the Austrian artillery had fallen into the hands of the enemy, and the line of retreat was threatened from both flanks. Then the cavalry threw themselves upon the enemy, true to their duty, to cover the retreat. As the Austriuns gielded, the Prussian cavalry was ordered to pursue. The cavalry anasses fell upon one another. It is not to be wondered at, that the Austrians were at first superior in force to the Prusians, for they were acting on the defensive aud were held in readiness, while the Prussians had to come up in column through detiles. But as additional Prassian regiments were constantly arriving lupon the field of battle they soon won the upper hand. But it must be acknowledged that tho Austrian cavalry effected its object just as well as the Prussian. Under the protection of the prolonged cavalty contest, sufficient time was won to enable the Austrians to reform and reëstablish their somewhat broken infantry. The broken battalions fled through Königgrätz, but the last to move off had ragained such an imposing bearing, that regimental commanders of our cavalry have told me, that, after they had driven the Austrian catalry behind the infantry squares beyond the Wsestar, they came upon infantry brigades of so imposing a bearing that it would have been fooliah to
attack them. So the idea of the Prussian cavalry, to reap the harvest of the victory by pursuit, was scarcely obtained. Imagine the result if the Austrian cavalry had not been there. The entire Austrian army would have been lost between 4 and $\overline{5}$ oclock: and. again, imagine the Prussians without cavalry; the attacks of the Austrian cavalry would perhaps have changed the result of the battle, as was the case on a later date at Vionville.

Of the cavalry attacks in the last named battle I have said enough in my carlier lettors.

To balance these successes of the cavalry as one of the arms on the battle field, we find the following failures in its efforts arrainst infantry in the latest wars. In the battle of Königrgratz, immediately after the successful attack of the dragoons, I witnessed an attack, on the opposite side of the heights, of an entire regiment of dragoons upon retreating.infantry while on the march. . After the regimental commander had found an heroic death, the regiment withdrew without having accomplished anything. The Austrian cuirassiers, who gained the advaptage in the opening of the great attack at Königgratz, were scattered by the rapid tire of the breech-loalers at Langenhof. A fer days before, in the lines in front of Gitnchin, two battalions of the Gremadier Guards could not be delayed a moment by the best and bravest attacks of the Austrian squadrons. The ground was covered with the corpses of men and horsee of the cavalry, while the infantry, upon which it made the attack, did not lose a single man.

To balance the fruitful attacks of the Prusvian cavalry at Vion. ville wo tind the unsuceessful attacks of the French cavalry at Woorth and at Vionville against our infantry. Concerning the French cavalry attack at |Woerth, an infintry otticer who was on the field related to me that it was male while our intantry was falling back after an unsuccepsful attack. This infantry was tollowed by a hail of bullets and projectiles, and every one felt that it would be impossible to reath the protection of the timber below.

Tired to death, but also true to the death, the entire infantry was falling slowly back. Sudfenly the muriderons fire ceased. Every one stopped through astonishment and looked round to see to what he owed his salvation, when he supposed he was certainly doomed to death.. Theg then saw that the French cuirassiers had sulvanced and masked their own infantry and artillery and prevented them from continuing their tire. These cuirassiers secmed like naving angels to them. Every man stood quietly in his place as he was and opened fire upon the cuirassiers who were soon broked up.

Of the attack of the French caralry upon the Prussian infantry at Vionville, an eye witness related to me immediately thereafter that as a regimental commander of caralry be had trotted forward in support of the infantry which was attacked, bat found that his assistance was not necessary; and that while be was adrancing, he had watched the struggle with close attention and had seen with great joy the firmness of their comrades of the infantry, and that scarcely any of them were ridden down; but that his heart bled at the sight of the powerlessness of the brave French cavalry against the firm and calm infantry, which did not even form square, but coolly deliverel its fire from the formation in which it then was. The French Cuirassiers of the Guard, excellently monnted, clothed and led, canc on with the greatest courage, determination, and procision, but under this well directed fire these fine troops were shot down in masses. The centre of the cuirassier line, which was directly in front of the infantry, was entirely destroyed. The two wings of the cuirassiers then took divergent lines;and shot past the battalion they had attacked, and after passing the akirmish line they had to run the gauntlet of the supporting companies. In a few moments there was nothing left of this fine carairy regiment but a few scattered horsemen, and there was scarcely a single infantryman who had been disabled.

The failure of the French cavalry which attempted to cut its way through our line in the battle of Sedan speaks still less favorably for the cavalry. They rode down, indeed, a part of the skirmish line, but did little execution, and the skirmishers then opened fire upon them to the rear and the attack was broken by the aupports, and the whole cavalry force destroyed. The Prussian infantry was only delayed in its advance during the time of the attack. Gallifet's cavalry saved its hodor, but exercised little or no effect upon the course of the battle.

In the same battle I had an opportunity to soolanstack of Prussian cavalry upon French infantry. The latter was not daunted, but advanced to meet the Prussian cavalry as far as the stone quarries of Illy, and opened from there a rapid fre that our cavalry could not overcome. Our shells so covered the French infantry that it finally had to withdraw again, but we could not venture to open fire until friend and foe were sufficiently far apart to make it safe for our own people. The cavalry attack, howevar, in itself, entirely failed.

In summing up our experiences, we may eay, that effective attacks of cavalry upon foot troops bave occurred in our late wars,
and will continue to occur in the fature oven if the cavalry should be greatly in the minority. As a rule, their efforts can only be crowned with success when the iufantry of the enemy is surprised, or has saffered in its power of resistance through an action, accident, or from some other cause. An attack in front upon intact infantry will seldom sacceed. As regards the episodes in the battle of Custozza, where, at Villa Franca and Mongapia, the cavalry was so unusually successful against intact infantry it must be acknowledged, that, for some reason or another, this infantry could not have had the full value of intact infantry. But even then this cannot be known to the cavalry beforehand, and the attack of the cavalry upon intact infantry must not be totally rejected, and it is well said, that the state of the action may be such that the cavalry, by making a sacrifice of the whole force, may perform a service for the army, as a whole, which will more than balance the sacrifice made, as at Mougabia and at Vionville.

We see further that, in the attacks of the caralry, so soon as they break forth in front of their own infantry and mask it, they stop the Gre of their own people and give time to the enemy to recover himself, and that then the attack is not only without result but gives an advantage to the enemys infantry (Woerth). They have greater chances of success if they pass around the flanks of their own intantry in order that it, and the artillery, may continue their fire until the moment of the rush, and thus continue the disturbance of the enemy's infantry until the last moment. It must always be the eftiort of the cavalry, if they enter the action with the other arms. to locate themselves upon the wings of the line of battle, in order to strike the enemy upon his flank, and thus permit the other arms to remain in action as long as possible.

One of our most capable generals, who, alas, was taken from us too soon, Freiherr V. Wechyar, wished to make the divisions of cavalry valuable auxiliaries in action by having them break through intervals between the advancing infantry, in order to draw upon them the fire of the enemy, and thus render the advance of the infantry easier. I can not agree with my highly esteemed friend in this idea, as I fear that by such a course our cavalry would sutfer a nselens butchery and our own infantry might be thrown into disorder by the overthrow of the cavalry. I am strengthened in my opposition by the fact that but little can be expected from an attack which is made with the previous conviction that it cannot succeed.

Wrchana's idea originated from the observation that I had also made in war, as well as at manceurres, that it was of frequent occur-
rence that the infantry quietly looked on as spectators and waited for the results, while the caralry made its attack, ithstead of moving up at a rapid pace and lending all the assistance it sould towards securing good results. But this habit, or better said, this vis inertiæ, had better be banished through better infantry instruction than by sacrificing the cavalry. 1 am leaving the theme of this letter, and I prefer to close it, but may perhaps touch upon this subject at a later date.

## THE PART WHICH THE CAVALRY WILL TAKE IN THE BATTLES OF THE FCTURE.

## seventh letter.

TWE difficulty which presents itself in securing the cooperation of the cavalry with the other arms in battle will be increased hercatter throngh the extending of the effective range of fire-arms. If the cavalry allows the moment to pass when the enemy is shaken and his infantry not intact, it must then halt and wait. Such a halt within the danger zone and under destructive fire is not possible. Shrapnel tire of the present day reaches over 3,300 yards, and infantry fire about 1,300 yards, but its effect upon amall objects is not important at that range and the percentage of hitn but small. Still it would be impossible for a deep column of reserve caralry to remain in position at a halt for a length of time, even at that distance.

The cavaliy mass designated to cooperate in the battle, must solect a position which will give an oversight of a wide district of country, and must remain 2,000 yards from the enemy's infantry line of battle, and 4,000 yards from his artillery line, so long as it considers that the time has not yet come for it to act. The enemy's infantry line need not necessarily be 2,000 yards in front of his artillery; a few hundred yards is all that existing conditions demand, since the infantry rifles have been made effective ati such great distances, and it can be laid down as a general rule, that the cavalry mast be held at a distance of $\mathbf{4 , 0 0 0}$ yards from the ememy so long as it is inactive.

At the distance of 4,000 yards it is difficult to determine the favorable moment for the cavalry to attack ; i. e., the exact condition of the enemy. Thick clouds of smoke envelop the field of action, lines are seen to swing forward and beck, choers are heard

in sections of the engaged lines, and with the thunder of the gans the noise is such that one shot cannot be distinguished from another, and no thoroughly reliable opinion can be formed as to the state of the action. The normal infantry formation is changed into knots and groups, and these groups are seen through the smoke to advance and retreat, and it cannot be determined who are triends and who enemies.

Granted that the cavalry recognizes the proper moment to attack, yet it has two miles to ride to reach the enemy. This distance is still further increased by the roundabout course the eavalry must take in order to pass about the flank of the line of battle. and if it does not previously know upon which wing it will be needed, it will nasally be held in rear of the centre of the line of battle. A part of this cavalry will probably have to march from, four to five miles on account of the changes in the formation, direction. etc.. etc. Even if it is accepted that this movement will be made at a gallop ( 444 yards to the minute), aineteen minutes will pass before it reaches the enemy; and if we take the trot as the average rate of speed of the cavalry mass, we see that it. would be orer half' an hour in reaching the enemy. In half an hour the condition of the action may have entirely changed. The enemys infantry may hare been fully reformed, his reserves may have arrived. There are hours in a battle in which nothing is changed, and there are times in which each minute presents a different picture. These critical moments are the only occasionswhen the cavalry can be sure of obtaining great results; the seizing of the opportune moment is a necessity. How is it possible to seize these moments if a half hour is necessary to reach the ground?

This query is the result of theoretical calculation upon the "tabula rasa." But there is no battle field which resembles the open field, and all theories thus grounded are of doubtful value.

Still greater delays can be imagined: bad roads or obstacles may cause a prolongation of the cavalry column, and atter passing defiles the command must be closed up, ete., etc. But there are orchards, timberland, hedges and villages, behind which the cavalry can approach and halt without suffering loss from the enemy's fire, because their presence has not been made known. In the most level terrain there are swates and depressions in which entire dirisions of cavalry may be concealed, and of which the enemy has no suspicion because he has considered it as a plain. I need only recall the well known swale in the plain-like field of Tempelhot, which has given so many fine opportunities in manœuvres, and has brought mis-
fortune upon many commanders who were not familiar with the ground. Such depressions cau be more easily used for an approach to surprise all euemy if his attention is held by the course of the action on a different part of the field. Once in a d dision mancurre $^{\text {a }}$ against a masked enemy I opened an offensive attafk against a position and developed gradually the whole infantry ditision. The cave alry, amounting to ten squadrons, a a ailed itselt of such a depression and approached, under cover. and rushed foryard so unexpectedly to the attack against the exposed flank of the endmy's infantry that not only this, but the officers of high rank who had been prescat at the initial adsance of this cavalry and bat then galloped to the line of the marked enemy in order to witness the action, were completely surprised and thought the cavaliy mast have sprung out of the ground. Cpon another occasion I had the task of attacking an enemy which was in position on a commanding beight. As I was moving forward on the low ground I came upon such a depression which concealed the troops completely. While the adrance guard and the artillery occupied the attention of the enemy in front, the main boly of the division moved to' the left, in this depression, and reached the right flank of the enemp betore he was aware of it. The commanding officer of the enemy afterwards said to me that he and his whole stati had looked their cyes almost out in the use of their tield glasses, and asked if my division had sunk int, the earth on the open plain.

The eonditions are quite different in battle; it is much easier to hold the attention of the enemy amodst the falling of shot and shell, than it is at manousres with blank firing. In the batte of Königgratz I ntood upon the high ridge between Maslowed and Nedelist during the artillery contest against the enemys artillery line mon the ridge between Chlum and Yedelist, which the Austrian historical bureau has stated contained 120 guns. According to the striking of our whots the dintance was between 1200 and 1300 yards. The tiwo artillery lines were separated by a deep open cut, or valles, without obstadles, but with corn standing as high as a man's head. Our skirmispers advanced straight to the front. through the corn on this colosal battery. The closed columns of infantry followed. The enemfs artillery was so entirely occupied with our batteries that they had not noticed our skirmishers advancing through the corn and did not fire a shot upon them. The battalion mawes of our third line first excited their attention, and we were afterwards informed by prisoners that they were greatly surprised that the Prussian infantry, thus in close order of masses, as if on parade, should enter the zone of their
artillery fire, and that they were preparing to open fire upon it when a destructive fire from our skirmishers was opened upon them at very short range, which shot down both gunners and horses and in a fow minutes our enterprising skirmishers had possession of sixtyfive guns. The others escaped. The position was won. If, in a coantry which is considered open, a strong line of skirmisliers can move straight upon the enemy, the caralry can likewise reach the flank of the enemy if they arail themselves of the accidents of the terrain. If, however, they attempt, as did the French caralry on the afternoon at St. Privat, north of the road from Ste Marie to St. Privat, to lead their cavalry forward through the intervals of their engaged line of battle and form by regular evolutions in front, thus inviting the concentrated fire of the intantry and artillery of an army corps upon them, then they cannot accomplish anything and will be broken up and driven out of the zone of tire. The same. will result if the cavalry attempts to debouche from a detile and form in front of a firing line; as occurred to the French caralry division which moved upon St. Privat along the road on the evening ot the 18 th of Augast while the strugg e was still in progress fior the possession of that village. My batteries, located on the heights between St. Privat and Amanvillers, availed themselves of the halt made by the enemy's head of column to get the fange very exactly and found it to be 1800 yards; then followed a quick fire of thirty or forty guns, and in a few moments the whole mass whas broken up and driven back. ' A similar lesson was taught to the First Prussian Cavalry Division at the defile of Gravelotte. By advancing through the line of battle the cavalry attracts the attention of the enemy before its time, and it is then compelled to adrance under a hail of shot and shell which must destroy it before it reaches its objective. If it trots around the wing, while tho enemy is fully decupied on bis front, it can choose the route and the point of atfack that will admit of our infantry and artillery continuing their fire until the moment of collision. By this course of action a surprise, and great results, are far more probable even if complete covering cannot be found in the accidents of the terrain.

There is still another element which offers furorable chances for the cavalry. Not only does the action when it is hot and has become critical, hold the attention of the enemy and prevent him from noticing the movements of the reserve cavalry, but, if they are noticed they may not be reported to the proper commanders, or it may so happen that the enemy|cannol turn his fire non it. The most favorable time for the decifive action of the cavalry in battle is un-
doubtedly at the moment when both sides bare put in their entire forces in order to decide the struggle. Then the infantryman fires _upon the enemys infantry whose shots whistle threateningly about his ears; the two artilleries oppose one another and do not willingly pive up a battery or even a single gun, which might turn the scale in this last effort, for a different objective; or the artillery may have received an order to make a breach for the infantry, or they may. have to concentrate all their strength against a threatened infantry attack. In short the other arms have, at critical moments, other, nearer. and at the moment, more decisive objects in view than the watching of the movements of the reserve cavalry in the rear. In such times, even if in sight. the cavalry can move ap nearer without danger. It need no longer hold itself beyond the danger zone of the other arms of the enemy. for he has something else to do than to watch the movements of cavalys, and it is no longer in such danger as if it were the only target for the shots of the enemy. True, it will still be the ball-catcher of the other troops engaged on its front and will not wish to remain behind them, but would prefer to be - placed "en echelon" in rear of one flank.; It is not vary dangerous to be placed as the "ball catch" if it does not come up closer than 430 yards to the second line of infantry. Isolated, stray shots, which have been aimed too high, will still strike the cavalry; but, it is not possible to find any place on a battlefield that is without danger.

So long as it is not known detinitely upon which wing the cavalry should be employed it will be better to leave it in rear of the centre. Besides. the nearer the critical moment approaches it will become more evident upon which wing the cavalry slould act. As soon as the gemeral situation admits of this detinite conclusion the caralry must be directed to that wing to take its position in echelon. Too much caution cannot be excreised to see that the cavalry does not get too tar from the tield of battle. It has always a strong inclination that way. which arises as much from the natural love of every good soldier for the greatest possible independence, as it does from the proper consideration of the fact that by taking plenty of room it is casier to fall upon the flank of the enemy, It must be considered that at too great a distance from the ficld ofders will not arrive so quickly, and during the carrying of these orders the farorable moment for the attack may have-slipped by. The ideal position for the caralry is that in which its leader can bold bimself in the immediate vicinity of the general commanding, in order to receive his orders verbally, in person, without absenting bimself too long or at too great a distance from his squadrons.

It must not be understiod by this that the commanding general is to give the cavalry commander the absolute order to attack, which is to be executed immediately by the cavalry. On the contrary, he sees in the gencral sithation that the moment is approaching when the cavalry can take payt in the action: with rerbal instruction concerning his views and purposes he anle:shes his wavalry leader. From this moment he mast leave all to him. The cavaly commander then conducts his command, under cover of the areidents of the ground, to the vicinity of the enemy's flank: watches, and probably waits some time, for the opportune moment. and then gives the preconcerted signal for the pre-inst facted cavalry to beak forth. Such a signal Serdiatz habitually made ly throwitur his pipe in the air. In the beginning nf my letter under reference to an open field, I asid that it was difficult to judre correctly of the sitation of the eneny and to choose the properinstant tor the attack at a divtance of 4,000 yards. But thinge are very materially changed in practice by the excitement in which every one finds himelf in actual battle: After the whole line has become engaged it otten oreurs that one or two isolated mounted men are entirely unnoticed berause the whole attention is directed to the enemys masses. In my own experience I have had a few striking examples of this. I buce roble to some infantry which I thought to be some of our own fallinat back before the enemy towards the leff flank of my artillery. With the view of baving the commander coper the left of my artillery line I rode towards this infantry, still keeping my attention on the action of our own batteries. Shddenly my orderly called my attention to the fact that we were in the enemy skirmish line. Irecognized in the supporting battaions, notwithastanding the fact that $I$ am somewhat short-sighted, the faces of officers whom I had contertained in my quarters two years before. The enemy's riflemen had paid no attention to me. When I started back at the top of my speed for my own command I heard the balls whistle about my cars for the first time.

In the same battle a cavalry detachment came rery close in on our flank and rear, both to our and their own surprise. The commander had ridden up to within about fifty paces hefore our infantry and artillery opencd. I saw the major of hussars and tris horse fall; the horse was dead, the detachment was broken up ant entirely destroyed. No one troubled himself about the fallen major: we all had something else to attend to. I learned later that he worked himself out from under fift dead horse, and. finding himself quite unhurt, made his way, on foot, through our troops and succeeded in
reaching his own side entirely unnoticed. In the battle of Sedan, during the long camonade, a battery made its appearance which Hanked our artillery line. I agreed with General $\mathbf{H}$. Pape that the fosition of the battery and the fall and bursting of the shells seemed to indicate that this was a German battery, and in fact must be one of the batteries of the $\mathrm{Saxon}_{\text {or }}$ Twelth Corps. He then sent his adjutant, $v$. Resistadt, with two hussars to explain to the battery its error. They rode through a ravine and found themselves in the midst of the French. As they turned to ride away at full speed they were noticed by the enemy, who fired after them. All three came back mahurt, and but one horse was wounded. I could (ite many cases which have been related to me in which single homemen have observed the enemy in his immediate vicinity without having attracted his attention, and this becomes easier in exact ratio with the incerased violence of the battle.

An enthusiastic cavalry leader, giteal with a quiek eye sight, rill find. in almost every case, some opportunity to approach in person very near to the enemy, and there await the favorable moment for the cavalry attack. ILow he makes this attack, and when the special moment has come, the commandilg general must keave to his judgment. for there is no rule by which it can ${ }^{\circ}$ be foretold.!

The commanding general will do well not to let the cavalry leave his grasp too soon. certainly not before it has been definitely shown upon which wing it should be employed, or until it in established beyoul a doubt that he will not need it as a support for his centre. Let us consider the result of the enemy breaking with his centre the middle of our fighting line of infantry. If be succeeds, he will pierce our line with broken organizations and in bad order. Should the caralry fall sudenly upon hime while he is rakel with shot and shell from both flanks,-we will certainly be ridden down and the hattle will be reistablished. This idea occurred to our commanders at Vionville, when they retained a part of the cavalry behind the thin line of infantry of the Third Corps as a sort of second line, and sent only a part of the Fifth Cavalry Division and the division cavalry to the great cavalry struggle on the left ring.

Because the cavalry did not attack in masses and make decisive charges in the latter part of the war of 1870-71, many seem to have rome to the conclusion that they could no longer do so. But in the latter campaigns of this par the conditions were so abnormal that it was no possible to deduce any rule for the application of the cavalry arm from them. The enemy were often four times as numerous'as
we, and he carried a ritte which had a range three times that of ours. His army had such an extended front, that our infantry lines, if they fought never so thin, musti be outflanked by him. Then our cavalry. which was more numerons than that of the enemy. had to be detached far upon the flanhe in order to oceupy the attention of the wings of the enemy's intantry line and to prevent it from enclosing our engaged intantry. The cavalry can only act in this manner against an enemy whose hastily collected and uninstructed masses do not have the same value in action as diseiplined and instructed troops have. It the caralry must be employed in making demonstrations upon the extended wings of the enemy it cannot be on hand for the attack when the decision falls in the centre. Some very fine isolated cavalry attacks occurred in 15تい-il ; such as the attack of Colome at Poupry. and isolated reqimental attacks at Orlear. Later, in December and January. the activity of the eavalry was greatly contracted by frost and ice, and limited almost to demonstrations and observation. It was so in the campaign on the Hallue, of Bapacie and St. (quentis; in the second campaign of the Loire, which, ended in the battle of Le Mans, and in Werders campaign which resulted in the battle of Lisaine. But such seasons are exceptional. Because these last campaigns are the clearest in memory many have permitted the idea to become fixed in their minds that the caralry, as a general rule, can only be made valuable when used as mounted infantry.

Supported by these war experiences. I have come to the conclu. sion that the part of the davalry in an offensive battle, notwithstanding the extended range of the other arms, is still. unler certain circamstances: very decided, and that future defensive battles will present many farorable opportunities for the attacks of cavalry. The theoretical development leads us to the result. that. in an offensive battle, the cavalry must pass over a distance of from three to four miles, at rapid gait, before it passes to the attack. This distance is very considerably shortened in the defensive. for then the cavalry mass can be held in readipess for the attack very much nearer the battle field. In most cases the condition of the terrain, and the general military situation of the field, will designate. in adrance. the place where the cavalry must make its attack.

In choosing a defensive position the commander has it in his power to gain a thorough knowledge of the ground, and to determine where an attack wonld be most likely to occur and where such a thing wquid be one of the possibilities, etc. Opposite to the recognizen place the cavalry is brought up and formed, under cover, to await
the opportune moment to attack. The distance of its-position from the field of action is not so great as in the oftensive: besides, when the attacking force adrances it approaches this cavalry, and when the engagement becomes serious, and the fire becomer destructive. then enters that comdition in which the cavalry cease to be a target. the cause the enemy has other work on his hands. With the lessening of the time required to ride to the attack. the seizing of the right moment becomen proportionally easier. The hest position is generally a high commanding ridge from which the atacking side can be watched and behind which the cavalry is held under cover. From such a pesition it is casier to observe and judge of the condition of the enemy, and to seize the moment when his organizations are broken. Often there are very fer moments between the decision and the bow. To make this decisive it must be execolted, as in the offensive around one of the wings, and fall upon the flank of the enemys line. in order not to mask the fire of their own side. but to admit of its being kept up to its full extent until the moment of contact.

Our battles of the last war offer us little experience in the employment of cavalry on the defensive. We had too fen defensive hattles. In thowedefensive actions which occurred during the blockades of Metz and Paris, at Noiseville. Bonarget and Mount Valerien, the continuous lines, walls and ditches of our fortifications on our front, and the nearness of the fortifications of the enemy before us, excluded the action of cavalry masses; and at Lisaine we nee the io. limiting the activity of the eavalry. We can, however, consiler the attacks of the Brigade Bredow at Vionville. the Dragoons of the (inard at Mars La Tour, as well as Colomb at Poupry, as defensive attacks. But they were not so in the full sonse of the word. for the battles were not defensive battles in which the caralry was put in position beforehand, but the momentary coplition was an improvised defensive in the warering of the action. But in the battle of Königgratz we sec a defensive caralry attack made by our enemiss on a grand scale. There the heary masa of Austrian cavalry made a successful attack, in close order. in spite of the breechloading neodle gun and the rifled artillery. It was made quite eviNent on this occasion how great the superiority of the cavalry is in the defensive. The Anstrians were able to succeswfully attack with heary masses and the few Prussian regimenter which arrived anccessively from long distances and across defiles, were driven back by the shock until the mass of the Prussian cavalry was increased sufficiently to resist them. But the purpose for which the Austrians
had made the attack was accomplished; it had saved their infantry A wider distance was established between the lines of the contending armies, which was swept by the colossal line of artillery which the Austrians had established in the meantime, and those of the Austrian battalions that had to fly betore our victorious troope were able to save fhemselves behind the protecting fortress of Koniggratz without being disturbed further by the Prussian infantry. If this attack of the Austrian cavalry did not transform the battle into a victory, the reason is to be found in the fact that it could not be made around the wings, and was not assisted by the full power of their other arme up to the last moment, partly because the terrain would not admit of it, and partly because the fire of the other arms had already almost entirely ceased.

From all that I have said in this long letter it appears that I am of the opinion that the cavalry can in the future take an important part in battles if they are so led as to strike around the flanks, and thus allow the fire of their|own line of battle to be kept up until the moment of contact. The demand enters here, however, that the cavalry must be able to pass over four miles at rapid gaits before they make the attack. Can this be done? It must be done it they will be applicable as battle cavalry. They can do it if they are systematically trained until their wind is good. When I personally inspected the squadrons in detail as division commander, I required them, under the weight of full field equipment, to trot and to gallol, at the speed fixed in the regulations in going through their evolutions, and the latter gait was to continue for at least six minutes. Many squadrons galloped for ten or eleven minutes continuously. Then they closed with the regulation long charge, after which they made an attack as foragera, and then they formed and dismounted to see that no horses wer blown. They had thus trotted and galloped from four to five milep and then attacked, and were still in condition for action How to obtain this condition I will explain later.

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## EHHTH J.ETTER

YOHR objections to the contents of my last letter complete rather than oppose what I hate said.
I entirely agree with you that the sphere af action ot the catalry has suffered comsiderable narrowing by the increased range of modern fire arms. Who can deny it" The reonlute attack of the Austrian cavalry at langenhof. in the bathe of koniggratz, was broken and thally stopped be the fire of the lerusian intantery Thin support gave time for many approblhing I'russian cavalry regiments to come up. (wontor the action. to rain advantage and the Austrians were driven hack. The l'russians were compelled to stop the pursuit as somt as they came upon anbroken hatations of in. tantry ready tor action. and a line of artillery placed in position In tormer sears -uch an attack of the Austrian cavairy would have thrown the l'rusian cavalry hack upon the intantry and would have -wept the field w the Bistritz and meeting there the Prussian rearve cavalry resmente as they were letiling: aroose would have Ariven them hack inte the streatio. Or. should the Prussian reserve reximents hace detiled at the right time and hate been wormed for action, they wonld have driven the dustrian cavalry back and overthrowimali the cavalry, intally and artillery which they met in their eonser ar tar as the Elbe

It Fionville the Brigale Breden penetrated the intantey and atiblery line of battle, and was driven batek when it cume upon the vemys cavaliy. which was greatly superior in numbers. but the French did bot dare to pursue as far as the Prussian line of latele. The cuirassiers of the guard who dared to do so on another oecasion were destroyed hy a company of infantry deployed in open order. At Mars La Tour the Dragoons of the Prussian Guard penetrated the Freneh intantry mase and brought it to a latt, but could arecomplish mothing more. So trophies. no squads of prisoners. -rowned their effiorts as so frequently happened in firmer centuries. When the oreat cavalry contest. which took place to the west of Mars La Tour. Was decided in favor of the Prussians, who maintained possession of the battle-field. they coudd not fall upon the right flank of the French as did Skydiatz at Zorndorf: but were obliged to content themselves with bringing it to halt through threatening its Hank, and th, thus place a great zone between the contending lines. whereby the equilibrium of the conteat was reatored.

The day is passed for such brilliant results as the caralry socured at Rossbach, Leutheh and Zoradorf. but it has not passod for equally bold deeds. If we leave the brilliancy of the result out of sight, it is difficult to decide to whom to award the credit of the greatest gallantry, whether the troopers led by Sevilit\% at Rossbach, who, being fully conscions of the superiority of their leaders. looked upon the poorly organized and bady led imperial tronps as an easy prey, or to the troopers led by Bredow at Vionville or by Aderswaldat Mars La Tour, where, in order to save their own infantry, these gallant troopors threw themselves upon the French infantry, although it was armed with the irresistible, rapid firing Chassepot rifle. In any caso, we are compelled to esteem the selfsacrifice of the cavalry of $1870-71$ as highly as that of the cavalry of the Seven Years' War.

But the most zealous adrocate of the cavalry must grant, unconditionally, that battle action of cavalry has reached its extreme limit when it encounters intact, mell-instructed, well-led, morally unbroken infantry that cannot be taken by surprise.

The great narrowing which the cavalry has experienced in its field of effectiveness in battle compels it to locate the pivot of its activity elsewhere, viz: in pursuit, and in reconnoitering and outpost service.

The experience of the last great wars gives us full knowledge of what we may expect of the caralry in this direction, as well as what we may demand, and I cannot refrain from insisting that it is very dangerous to demand more than can be expected, because one might foster illusions that would be followed by a very bitter undeceiving.

So far as pursuit is concerned, I have previously mentioned that in our last wars activity in this field was often paralyzed by the conditions, especially when whole armies capitulated and nothing was left to pursue. In many actions, however, the cavalry did their whole duty in this respect, especially when it related to pursuit during the battle, as at Woerth and Orleans. The numerous trophies and prisoners which they took, gave ample evidence of this. Rules cannot be given for such duty. The cavalry, when ordered to pursue, can know but little of the situation of the enemy, because the long range of modern fire-arms holds the lines of battle at a long distance apart, and, therefore, renders it difficult to gain an insight into the situstion inside of the enemy's lines; but the cavalry must override broken, fleeing troops, and capture those who bave lost their order and cobesion, not stopping antil they are opposed by troops still in good order, who form a sound rear guard to cover the
retreat of the disorganized part of the army. The more trophies and prisoners the caralry capture, the sooner will the direct pursuit come to an end, because these cause delays, and the escorting of trophies and prisoners to the rear weakens the cavalry.

If the direct pursuit bas come to a stop, and at so distant a point that no infantry is at hand in order to set it in motion again, then the indirect pursuit must begin by threatening the flanks of the enemy's defented army, in order to compel him to continue his demoralizing retreat without rest and without giving him an opportunity to reestablish himself, until a new lease of life is gnally given him by his receiving fresh troops. Theoretically we cannot possibly designate what is to be desired, or expected in such coses, for in each instance the conditions will be difterent. In practice our cavalry has accomplished so much in this way that it has even surprised ourselves.

After the battle of Woerth this has been mised by many. MacManos's army assembled at Chalons, to which place part of it was taken by rail-the distance being 110 miles in an air line. The pursuing cavalry of the Third Army was halted in the vicinity of the Meuse until the operations against the army of Bazaine had been decided. The touch of the conemy was thus lost.

After the action of Artenay and Orleans and the capture of the last named city on the 11 th of October, the Second and Fourth Caralry Divisions pursued the enemy for forty miles. to the Sauldre and towards Blois and Marchenoir, when a fresh force of the enemy.n infantry put an end to their further adrance.

There is but a single instance in thiv war in which our cavalry had an opportunity to reverse their course of action and putan end to the enemy's pursuing us; and this was atter the loss of the battlo of Coulmiers. How they executed this mission is well known already (vide staff history pages 418-19).

When one considers the operations as they occurrod and reflects, that if the French had had at Coulnicrs a dispowable force of cavalry superior to that of the Prussians and had overthrown it, the large French army would hare been in position to continue its march upon Paris, instead of remaining halted for three weeks behind the Orleans wood, he will place a just raluation on the role which the caralry played on that occasion. We see, however, that the cavalry is now more hampered in its operations in pursuing an enemy, under existing conditions, than it was in former times.

After the battle of Leuthen the cavalry cleared all Silesia, and also Upper Silesia, of the enemy. In late wars the cavalry pursait
is brought to an abrupt end whenever it is no longer assured of the advance of infantry upon which it can rely for support, and which must attack and break the, enemy again if he attempts to bold a new position. After the battle of Woerth the caralry of the-Third Army remained halted in the ricinity of the Meuse as long as the army was beld in that district, and the Commanding General did not dare to send the caralry dirisions alone and unsupported still further into the heart of France, where they would be constantly surrounded by franc-tireurs, gardes-mobiles, and newly organized troops. Likewise. General von der Tann when be determined, in October. to hold his detached army in position about Orleans. did not permit the caralry to go beyond the wood of Marchenoir and Blois to the west, and Salbris on the Sauldre to the south. A "conp de main" upon Vierzon, or eved Bourges, for the purpose of destroving the workshops and the lines of supply for the newly tormed corps. was not considered possible. As a general thing we find the cavalry divisions did not separate themselves more than two or three days march from the body of the army when it was halted. and they never, willingly, abandoned their connection with the army in rear.

This has frequently been made the subject of reproach to our cavalry. Even writers who belong to cavalry consent to this reproach. I will postpone the analysis of these reproaches until my next letter but will here remark that they should be addressed to our army commanders, for the cavalry pushed out just as far as these commanders authorized it to go. and eath one undoubtedly had good reason for not wishing the cavalry divisions to go so far ont that they would lose their connection with the army. It the cavalry divisions are to remain in communication with the main boly of the army. then from two to three days march must be held an the maximum diatance to which they can be pushed to the front for varions reasons. The presence or near approach of the infantry exercises a strong restraining influence upon a population naturally in sympathy with our enemies, and who. without such restraint. would capture our eoouriers and patrols. ete. Cavalry operating entirely alone can ugt dispense with tire weapons. The guns of the borse artillery as well an the carhines are otten called into play, and re-supplies of anmmition are necessary. for without them the cavalry could be rendered powerless by a rery insigniticant de. tachment of infantry favored by special conditions.

The intelligence which the adrance cavalry should bring in concerning the enemy is quite important even if it arrives at headquarters in the night ancceeding the day on which the patrole. or sconts,
bare made their observations. This is scurcely possible it the distance exceeds fifty miles. This belongs, howerer, to the other field of duty of the cavalry, the reconnoitering and scouting service. Practice in the last war shows us that the cavalry. When brilliantly fulfilling this duty of theirs. was very rarely more than three days. march in front of the army. The most distant detachment was that of the cavalry of the Third Army and of the Army of the Meuse, when they were put in motion towards Chalons after the battle of st. Privat.

When the most distant patrols discovered. on the $3 t$ th of $A$ ugust. that the camp at Chalons had been abandoned. they were. in an air line, between forty-five and fitty miles from the army. This distance must naturally be lessened. when. by reason of the presence of the enemy, the caralry meets with obstructions and resistance. Cjon the arrival of the army before Paris we see the advance patrols of the cavalry were only between thirty and thirty-tive miles in advance of the army.

The extent of country that the cavalry can independently cover suffers considerable contraction by a prolonged halt of the army. for during such a halt the enemy finds time and opportunities for planning enterprises against isolated caralry. We see. for instance. that when the cavalry bad to protect the rear of the blockading army at Paris it was found necensary to push out infantry for its support, in Normandy as far as the Epte and to the west as far as Dreux and Rambouillet. We thus see. that as a gemeral thing the cavalry can only be inclependent when in connection with infantry. and on the other hand. the infantry only feels secure when in connection with cavalry. The mutual support of the two arms is more necessary now than it was formerly.

In opposition to all the principles and rules which we may deduce from the application of the cavalry in out last campaigns it can, with apparent fairness, be answered that the conditions were abnormal and cannot be accepted as models, because the enemy did not employ hin cavalry in the same manner we did. In the carly part of the war and until after the catastrophe of Sedin the French commanders beld their caralry in reserve and spared it for use in battle.' In no single instancédid a French cavalry division reconnoiter at a distance in front of the army, and it must be conceded that conditions might. have taken quite a different form hall the French made the same use of their cavalry that the Germans made of theirs. The German cavalry would then have found their work very mach more difficult. but that would not have altered the correctness of the
principles. If the French cavalry had been emploged as skillfully as was that of the Germans, the results would have been then what they will be in the fature, when the cavalries of contending armies are equally well employed.

In the future both armies will send forward their gresat caralry masses in order to push ont their feelers, their officers' patrols, to examine the enemy's strength and position and discover his intentions. These heary masses will come in collision and contend for the possession of the terrain. Finally one of the opposing masses will gain the adrantage, aqd driving the other back upon its infantry will secure to the commander of their own side the same strategical superiority that the German cavalry did for their army commander: in the last war.

When the operations have led up to a decisive battle, at the opening of it the cavalry of each army will be in rear of the other two arms, but will seek to share in the tinal decision. If they should both choose the right point and moment, they will again fall upon one another, and only after one of them is driven from the field will the other be in position to act against the other arms.

The successful side will then seek to enhance the victory by a pursuit, the weaker will seek to cover the retreat. If the latter still has unbroken cavalry at his disposition after the tirst two contests. it must be employed before the otber arms. and only after it has been overthrown will the victor be able to make a profitable pursuit against the other arms.

After this direct pursuit has ceased it will then be the duty of the defeated army to prevent and delay the indirect pursuit, which the cavalry of the victor will undoubtedly undertake, as far as the dexterity of mancurre will enable their inferior numbers to do so.

Of the four cases, cavalry divisions are used in attacks upon the other arms in but two of them, and in those only after they have first brushed away the enemy's cavalry. The other two cases refer to actions between cavalry troops acting independently. The probability' presents itself that caralry will generally find itselt contronted by cavalry, and although it may endeavor, and even succeed occasionally in attacking the other arms. yet in most actions cavalry will be employed against cavalry.

What will the critics then say about useless caralry duels, private battles that caralry have fought independently, isolated actions not connected with the army as a whole? As though it lay in the will of the leader to avoid such cavalry duels, and as if they did not
result from the very nature of things. Perbaps these critics desire in order to aroid such duels, that in the next war aur caralry should run from the foe, take refuge bebind the infantry and abandon the entire field of observation to the enemy, thus giring to bim at the beginning and without a struggle the strategical superiority. Were this to happen the caralry would deserve the most severe criticism, for upon it would rest the responsibility that our commanders were under the sad necessity of fighting with their eyes blindfolded.

## PROFESSIONAL NOTES.

METHOD OF EXAMLNING HORSES AS TO SOTNDNEss

Lecture delivered at the United Service Inatitution of India. br G. J. R. Kivinent, Ear.. F. R. C V. B., Asmistant Superintendent Horse Breeding Department. Journal Cnited Service In.
atitution of India. No. 73 .

1. Lead the borse gently out, and if possible be should have been standing in the stall some hours, and let him stand for $a$ short time; observe whether he points with either fore foot or restr any particalar leg and the attitude he assumes when standing.
2. Trot him steadily away from and to you. While trotting away look for lameness or stiffness behind, especially when first starting, observe whether he flexes bis hocks well and equally. whether he goes close or straddles. whether he rolls in his gait When turning watch the hock action, and the motion of the loins On coming towards you look for lameness or stiftiness in front; for close action, brushing, speedy cutting, toes in or out, dishing, carriage of head, star gazing or otherwise, or neck awry; should the oxaminer think that the horse goes lame at first, but afterwards fail to detect unsound action, he should tie the animal up for half an hour or so to cool and then trot him again, as lameness is frequently evanescent and passen off with exercise. and ly allowing him to stand he stiffens on any unsound limb.
3. Halt the horse and walk quietly round looking over him, any glaring unsoundness will thus be detected and save the trouble of further examination.
4. Advance quietly to the side, and facing towards the horse's head, oxamine with the right band the withers and back for fistula or saddle gall, thence bring the hand down. along the shoulder blade. observing if there be any wasting of the muscles in this region; feel the shoulder joint for enlargement, heat or tenderness. The band now passes to the knee feeling for scars, capped knee, heat or en-
largement indicating inflammation of joint, then along the front of the cannon bone for sore shins, the fingers feeling along the course of the inner splint bone for splints or knee sparin. on to the front of the fetlock for heat, swelling, etc., over the pastern for ring bone or inflammation of coronary band. to the hoof looking for sanderack. to the toe for riginess, or bulging. and feeling both feet to detect any difference in temperature.
5. Turn round and with the left hand feel the point of the elbow tor capped elbow, and looking at the horse's side for girth gall, pass the band down the flexor muscles to the back of the knee. below the knee for speedy cut spavin, or enlargement of check ligament. Hexor tendons, or their sheaths. and skin disease, and then to the tietloek: while doing this look down the inside of the off fore for -peedy ent, brushing and sanderack in the inner quarter of the hoof: at the tetlock feel for wind galls, sesamoiditis. apráin or inflammation of joint, and skin disease (rat tail); if thought warm feel the oppovite fetlock for comparison: examine the other tetlock: lift the foot and observe the heel for cracked heels. grease. horse pox: latoral vartilage tior side bone; sole for undue concavity. convexity or flatness and notice if the hars are cut aray, or the wole pared, and if the frog be in gool condition and there be be oftenaive odor of thrush: ohserve the description of shoe if thick ofr thin, if the heels are thick. if it is a bar shoe. tip, high heeled or ordinary. if any mail or mails are left out. if worn or turned up at the toe, if shod to prevent brushing. if heels of shoe and toot-are wide or wired in and contracted. it the animal has talse quarter.
6. Give the toot to the attendant to hold and pase to the near hind. tacing wowards the head, notice the loins and flank to see if there be any wasting of muscles. pass the right hand orer the stiffe joint and along the tront of the tibia the theck. examine for lone spavin and loge spavin: compare both hocks with the right hatd, and notice any heat or tenderness: look if the animal be a vallion, rig or gelding, and examine the serdum, prepuce. or mamme (if mare) for wartn. melanosin, hernia, dropey mammitin. cte., then look along the inside of the off high for farey buds, sears along the lymphaties or enlargements from lynyphangitis. In the hollow of hocks feel tor skin disease (sallenders); below the hock as in the fore limb, being careful not to confound enlatgements from heel ropes with ringbone.
7. Turn round and with the left hand feel the tendon achilles and the point of the hock for capped hock, and in froot of the point of the hock for thorough pin. hack and below the hoek for eurb. be-

- low which as in fore leg. Stand back and look from the point of hock downwards for curb; pass behind and compare the hips, quarters, and buttocks, and feel the tail for melanosis, note the carriage of the tail to see if there be any injury; observe the anus and its shape, in a mare the ragina for melanosis, etc.

8. Order the attendant to drop the near fore leg. Go to the off fore and proceed as with the near fore and hind.
9. Stand in front of the horse; compare the eves, as to whether one is smaller than the other, the sides of the chest. shoulders, knees; fetlocks and hoofs; stand on each side and look diagonally at the hocks to detect spavin.
10. Put up the jugular vein on the near side, look for farcy buds on the neck and the sides of the face, and for scabies, feel the submaxillary lymphatic gland for enlargement, examine the membranes of the nostrils for glander ulcer, healthiness or otherwise of color. and polypi, also for nasal discharge or offensive odor. Examine the mouth, the teeth for age, irregular growth, parrot mouth, the tongue for torn tongue, the sides of the mouth for bit bruise, or offensive odor, the mar teeth for irregularities, poll for poll evil, eye for triangular lid indicative of opthalmia, torn eye lid. warts, weeping. etc. Then placing the animal in a proper light, with a black shade (or hat) look diagonally and struight into the eve, noting opacity or white specks in the cornea, into pupillary opening for torn corpora nigra, lenticular or capsular cataract, glaucoma, parasite, or scar from operations for parasite, and amanrosis; note the color of the membrane of the eye-lid. Proceed to the off side and repeat the inspection. Be careful to examine both sides of the mouth for age.
11. Put a man up, and observe if the horse gives in the loins when being mounted, and if he crouches when starting; if so back and turn him to test for weak loins. Then gallop till fairly blown. if - plough or an ascent be available all the better; halt him suddenly and put your ear close to his nostrils, and listen to respiration for roaring, whistling or broken wind, etc., and observe if hurried respirations subside quickly to normal or not.

## SMALL ARMS PRACTICE IN RUSSIA.

The Russian Staff publication of 1884 * still governe in that coun. try. The methods prescribed therein appear to give natisfaction and we have no information that any change is intended at present.

We find that the Russian practice is to conduct all preliminary instruction in the use of small arms acoording to dimikar principles. Gur curiosity is at once attracted to the revolver three patterns of which are used in their army: and of which severnl hundred thousand have been furnished hy an American firm.

For instruction in the use of the revolver the regulation requires a 'areful knowledge of the mechanism and care of the weapon and most elaborate pointing and aiming drills. Every motion is practiced in detail and it is only after a dozen different excreises that the recruit is finally supposed to be able to perform the act of rapidly aming and firing $\cdot$ with a shap." This idea of rapid firing is, in the Russian mind, six shots in something less than thirty seconds, and the soldier invariably closes the left eye and looks along the sightes with the right. Thus the Russian thinks that " nnap shooting" is taking about tive seconds. to a single shot. In reality the "anap who" takes no more aim, as we know, than the thrower of boom"rangs, base halls, stones, or any other missiles, and be averages more than one shot to the second of time.

The annaal allowance of ammunition is twenty-four rounds, of which eighteen are expended in dismounted practice at twenty-five and forty paces; of the eightcen. twelve are fired without limit as to time, and six in thirty seconds. The remaining six rounds of ammunition are fired to the right front and to the right rear; four shots at a walk, and two at a gallop. The aim throughout. of course, is to make a meager allowance of ammunition go as far as possible, but it would seem to us that they waste even a large portion of that want supply, in dismounted deliberate firing. Two shots at two distances will certainly not give the recruit the practice necessary th support the recoil of his weapon. While firing rapidly with his liorse at speed.

Out of 346 pages of firing regulations, these ten pages, given to the revolver. cannot impress us that we have mach to learn from that nation of the world which. next to nurselves, has placed the $\because$ atest store on the revolver.
iWe are indebted for tranalations of important parts of thit work to First Sergeant ThadeEts Wilu, Company I, Sixth Infantry.

We may very thankfully turn trom this foreign manaal to out own new edition of small arms firing regulations. Whatever mas. be said of this book it must be conceded that the points of mosi vital interest to the cavalryman have been filly yielded to him. Let us now make something out of our cavalry competitions.

## THE SERVICE REVOLNER.

From "Arming of Gunners and Drivers.' by Najor Euts Bakik. K. A., in the Proceedings of the Royal Artillery Institution, Mas. 1s8s.
I am strongly of opinion that both the gunner aud driver should be armed with a revolver. but not one either of the regulation pattern or of the bull's-eye, long-range shonting. American type anit 1 will briefly state the reasons for this opinion.

What gou want a revolver to do on service is to rive a man: system such a shock. the very instant the hall strikes him. that his nerves are at once perfectly paralyzed. and he is unable to complete any movement he may have already commenced. There is very little satisfaction in putting bullets into a man which are certain to kill him, if you cannot succeed in stopping his speating or cutting you down. I remember an instance which, though not to the point as regards being on the detensive. will illustrate what a service revolver cannot do. In 187! I saw Captain M.. of the Bongal Cavalry, empty five barrele into the back of a Ghazi ( whow was ranning "amuck" through the camp). at less than five yards range without - stopping him. A Martini-Henry bullet pierved him as well. and yet he kept on till brought up by an infantry bayonet. I examined the man myself afterwards and found the marks of all six bullets in his body.

I consider that a service revolver should throw a heary hall of abont .5 -inch or .55 -inch diameter, and I am half inclined to believe that a flat head to the bullet would be an advantage. Three or. at the outside, four chambers are ample. and there slould be a simple and ready means of simultaneously ejecting the empty rases and reloading.

## REVUE DE CAVALERIE.

January, 1889:-General Bruyere (1772-1813) with a portrait The Three Years Service of Caratry. Studies in Caralry Field Service by General Verdy de- Vernols (translation). Schools and Masters of French Equitation from the Middle of the Fifteenth Century to Our Onn Times.

## REVUE MILITAIRE BELGE.

No. 3, 1888.-Napoleon and Carnot, by General Wantermanf. An Improved Field Outfit for Military Signalling, by Wapfelaert. Notes on Indirect Fire. Description, Theory and Lise of the Hannot Tachéometer.

## PROCEEDINGS OF THE ROYAL ARTILLERY LNSTITCTION.

- Volume XVI, 1888-The Màxim Automatic Machine Gun. The Arming of Personnel of Horse and Field Artillery.-Page 1. The question of Draught in Mountain Batteries.-Page 55. Letters on Cavalry.-Febraary. The Employment of Scouts by Field Artil-lery.-March. Passage of the Myitgne River of the Shan States. -Page 151. The Maxim Gun.-Page 155. Extempore Ramps for Entraining Horses.-Page.175. Long Distance March.—Page 178. Personnel and Equipment of a Mountain Battery. Letters on Car. alry.-April. The Arming of Gunners.-Page 22i. Arming of Gunners and Drivers.-Page 231. Letters on Artillery.-May. Rates of Marching. Letters on Caralry.-June. Horse Artillery.-Page 349. Letters on Cavalry.-July. Letters on Cavalry.-August. Mountain Artilery-Page 519. Combined Action of Field Artillery and Mounted Infantry.-Page 52n. Letters on Infantry. - November. Notes on Mihor Tactics.—Page 569. Letters on Infantry. -December. Mountain Artillery. Notes on Minor Tactics.-Page 601. Proposed New System of Carrying Ammunition in Horse Bat. teries. Letters on Infantry.-January, 1889.


## JOURNAL OF THE ROYAL, GNITED SERVICE. institution.

Volume IXII. No. if. 18s:\%-The Propelling Machinery of Mod. ern War Vessels. The Military Defences of Victoria. Hodern Mil. itary_Rifles and Fire Tactics. Coast Defence Systems from Foreign Sources. Russian Infantry Tactics. The Organization of a Staff for Military Railway Work and of a Central Management for the Control of Rolling Stork in War Time. The German Army Act of 1888.

JOURNAL OF THE INITED SERVBICE INSTITC'TION OF INDIA, VOLCMEXVII.
No. 7.3. - The Bulgarian Army. Horses for the Army in India. The Higher Education of our Non-Commissioned Officers. Cavalry Conventionalities. Letters on Strategy. Field Mancuares.

## JOURNAL OF TIIE MILITARY SERVICE INSTLITLTION

December. 1888. Military and Naral Maneuvers.-Compulsory Education in the Army.- Extracts from Minutes of TV. Military Philosophical Society.- Powers and Duties of the Different Officers of the Army at the time of James $I$.

March, 1880.-Organization and Training of a National Re-serve.-Field Manœurres.-Revision of the Tactical Gaits for Our Cavalry.-Letters on Infantry.-Letters on Artillery- Firing at Moving Objects.

## PROCEEDINGS OF THE UNITED STATES NAVAI. INSTITUTE.

Volume XIV. No. 4, 1888.-The Necessity and Objects of a Naval War College.-Noter on Steel Inspection of Structural and Boilor Material-An Essay on the Tactics of the Gun, as Discoverable From Type War Ships.-A Stady of Fighting Ships.-Naval Admin-istration.-A Proposed System of Messing the Crews of Our Men. of.War.-Noter on the Litersture of Explosives.-XVIII.

Vol. XV. No. 1. 1889.-Naval Reserve and the Recruiting and Training of Men.-Sheathed or Unsheathed Ships.-Letter of Cap- . tain A. T. Mahan, U. S. N.-Naval Coast Signals. Notes on the ${ }^{*}$ Literature of Explosires.-XIX.-Progressive Naval Seamanship.

## HUDSON'S ARMY AND NAVY LIST.

March, 1889.-The list gives rank and post office of every officer of the Army, Navy and Marine corps. It is issued on the fifteenth day of each month, and is very accurate.

A System of Drill for Ambulance Corps. By William D. Dietz, Assistant Surgeon U. S. Army. (The Medical Record, Volume 34, No. 13.)

Notes on Bearer Drill with Hand Litter, Ambulance Wagon, Etc. By Jobin Fan Rensselaler Hoff, Captain Medical Department U. S. Army.

The organization of the Hospital Corps U. S. A. has presented numerous important problems which are slowly reaching solution. Sucbian organization does not mean merely the permanent transfer of so many cooks, attendants, etc., from the line of the army to the medical department. What has actually occurred is, practically, the organization of two regiments of special soldiers, for the training, disciplining, feeding, clothing and general care of which, the medical department has become responsible. The Surgeon General, Who is chief of this new corps, early appreciating the fact that his department had been supplied with an auxiliary, the uses of which medical officers were lafgely unfamiliar with, issued a "Provisional Manual," outlining, in general terms, a method of instruction for the Hospital Corps. As the name of this manual indicates, it is evidently intended simply to provide saggestions, to embody principles, the application of which will ultimately crystallize into a more perfect work, resulting from the experience of those medical officers interested in this consumamation.

The systems which we notice are intended to fill this want. They differ widely in their methods and will probably provoke considerable discussion. The first commends itself upon the score of simplicity, but omits many things that are necessary in a "system of drill." The second is in reality a "drill book" of forty-six pages, and would make the dill of the Hospital Corps a rery precise matter.

## MILITAER-WOCHENBLATT. SERIES OF 1888.

## tactics of cavaley.

Penetrating Cavalry : Charges. Recent Experiments Made in Camp Krasnoe - Stelo.- Page 1671. Establishment and Organization of Native Caralry in Finland.-Page 1899. Lecture on the Organization of Cavalry, held at St. Petersburg.- Page 731. Remarks on Russian Cavalry. by a Russian. - Page 1156. The Increase of the French Cavairy- Page 57. French Cavalry Mancurres in 1887. - Page 82. Cavalry Mancuvres in the Odessa Department, ( with map).-Page 51. Drilling and Manœurring of Cavalry, at Full War Strength.- Page 643. Instruction of Cavalry in Minor Tactics.-- Page 117. Letter of Rittmeister X.. to a Friend About the Instruction of His Troop in Minor Tactics, During the Winter. - Page 2\%91. The English Mounted Infantry.-Pages 704 and 1964. A Few Words About Cossacks. - Page 1340. Tactical Problems of French Covalry- Page 1071. The Instructions in Target Practice for ('avalry, of January 13, 1888. - Page 484. Tactical Instruction in Cavalry Mancurres in the Camp of Chalons, in 1888.-Page 2019 . The Mancurres of the Russian Caralry in Division No. 1, During the Summer of 1887 (with map)-Page 793 . Manceurres of the Cavalry Division No. 9. During the Winter.-Page 1050.
horsemanship. care of horses. eto.
Branding or Rubbing In.-Pages 113. 219, 236. 39ti. Long Distance Riding in Denmark.-Page 1880. Reduction of Weight of Horse Equipments-Pages 326. 783. Statistics of Sanitary Condition of the Horses in the Army of the Netherlands.- Page 1660. Forced March of Three Horse Batteries in France.-Page 1864. Steeple Chasing and Riding With Fxtended Front. in Russia. - Page 140. Flour-water Food for Horses.- Page 167 it. Horses of Officers in Hol-land.-Page 1376. Census of Horses A vailable for Military Service in Russia.-Page 132\%. The Horses of the English Cavalry.-Page 308. The Horses of the Russian Cavalry.-Page 376. Projects for Improvement of the Mounts of the Cossacks. -Page 1725. Swimming of Horses.-Page 1623. Endeavors in Switzerland to Improre the Breed of Horses.- Page 1312. Races of the "CampagneReiter Cluh," in Vienna. - Page 328. The Sources of the Efficiency of the Horse.- Page 1365. Forage Rations for the Public Herds.Page 699. Forage Rations in the Norwegian Army.-Page 988. Remounts in France.-Page 2311. Remounts in Russia-Page 123.

Swimming Across Rivers, by Russian Cavalry and Infantry-Page 1960. Assistance of the Italian Government in Procuring Mounts for Officers of Its Army.- Page 287.

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miscellaneove.
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The New Carbine of the Spanish Cavalry.-Page 189.2. The French Repeating-Carbine, Calibre $8 \mathrm{~m} . \mathrm{m}$.-Page 2:95. New Head Cover of the French Cavalry.-Page 124. Fur Coats for Officers of the French Cavalry.-Page 808. Boots for Mounted Officers of the French Army.-Page 1292.
series 1889.
New Year's Reflections on Caralry.-Page 90. Instruction of Drivers of Field Artillery.-Page 194. Edurance of Cavalry Horses and Systems of Riding.-Page 270.
$\qquad$

MEMORANDUM.
At a meeting of the U. S. Cavalry Association held at Fort Learenworth, Kansas, on Janduary 7, 1889, the tollowing resolution was unanimously adopted:

Resolved, That the thanks of the Association are ilue to Captain Otro L. Hein, First Cavalry, for the energy and zeal with which he has conducted the affairs of the Association up to its present condition of asefulness and assured success.

## JOURNAL

## OF THE

## Ønitcd $\$$ tates Gavalry

## ASSOCIATION.

I $\because$ blished rearterly
HY THE I SITFB STATEA CAVALRY ANSOGIATION. fort leavenworth, kansas.


## JOURNAL

## UNITED STATES C.VALRY ASSOCLATION.

rol. II. $\qquad$ No. 5.

3
(.AVMlAM W.AR LESNONS.

$\mathrm{Mr}^{1}$H.IT ALI SCIENOE is composed of elements in perpethal evolution, just as with a large body of troops en mote. each stublivision in its daily turn, marches at the head of the columm.

Thus we have had an intantry day, with its improvements in smallarm fire and battle formations: these, it was sad, meutralized the grwer of artillery, swept cavaly off the fieh, and virtaally revolutionized warfare. Then came the day of artilkery, with its monster cannon. marvellous range, hattering power and penetration. And now we are witnessing the dawn of a cavalty day: that it will le a day of surpising achievement and wide departire from soms rusty traditions who an doubt?

It may he presumed that in the next war the indepemdence, boldmes and rersatility of the cavalry will be marked features. In these respects the American War. INit-it, was aboved all recorded campaigns. remarkable. The tendency of forcign whitere to quote from the listory of that conflict. and the recent changes in the organization and instruction of European caralry. based upon our experience then, rember it important that the record of that experience should be uecurate, and that American military studente should give due weight to the war lessons of that period, as well as to the results of later Europeañ campaigns.

Aside from the official reports, there are but few works hearing upon the cavalry operations of the last twenty-five years. Amons the more notable contributions to the literature of this subject are the "Cavalry Letters" of Prinz Kraft ze Hohendone-Inimifinifes, of the German army. - The protessional standing of this writer. the uttractive form in which he expresses his views, ant the cotse with which he discusses the details of the three arms. have given to his "Letters on Cavalry ${ }^{*}$ a world-wide cireubation and in some resperets. perhaps, undue weight. For he does not claim to be of the true cavalry faith; and the limitations he imposes on the use of monnted troops indicate that he has failed tosarasp the areat possibilitien of the arm, and that, therefore, hik cavalry precepts should be taken ram grano salis. I assert this all the more confidently. as a derman cavalry officor, acknowledged by Prince Kraft to be oof the highest rank and of the greatest experience, both in war ant in the instruetion of troops in time of peace." also takes issue with him on somewhat similar grounds.

Prince Kraft briefly reviews the fied service of cavalry sillece 1861, laying stress upon the use of the German cavalry in lato. and referring te A merican methods with regard to "raids or independent expeditions."

When it is considered that from 1860 to 1 nsw. here have been in Europe but few instances of deviation from the manner of usins cavalry prescribed by Napqeon, it is not surprising that a modern European writer, not a caralpyman, should incline to a conservative use of the horse-soldier, emphoying him as a sort of borly-guard to his comrade of the infuntry, or as a butler to wet the bathe-banquet, pre vent intrusion, stand behind the host during the repast, and remore the dishes at its close. Surelyaniliary service must be performed, hut it will not, in future, constitute the whole duty of the cavalry. elet the lessons tught by Sherhin. Stcirt. Whans ainl Forbent. in this country, have been harned in vain. While these bessons emphasize the ralue of mounted troops an a sereen, ob obtain intelligence and to perform the functions of ". Divisional" ravalry. before, during, and after a battle, yet they also demonstrate their value as an independent force, operating at a distance, cutting an elloms communications, anticipating his occupation of' strategic points, and engaging his infantry, with improved tire-arms, on more adrantageons termas than ever before

I know that some military critien are apt to convider any reconmendations for the development of indrpendence in an arm of service
as due rather to an excessive esprit de corps than to a desire for the general interents of the army. How far do facto juntify such a recommendation here?

Judged by the war tests of 18bit-88, Prince Kraft is excusable for underestimating the value of independent cavalry expeditions and dismomuted fighting: during that period there was a dearth of both. But had he more thoroughly studied the operations of the $\mathbf{3 0 0 . 0 0 0}$ horsemen who. from 1861 to 1865, swarmed over the vast territory of the Cuited States, and who. unfettered by but not unmindful of tradition. passed so successfully through the cpucible of war. I am sure he would have modified his remarks on "Raids" and "Dismounted Cavalry": cortaindy he would not have treated the first subject with an allusion to it* poetic side, according to the gallant Vos Boreke.* nur so contidently declare that fixe hamdred good intantry call oppose the dismomed troopers of an entire cavalry division: with every proppect of success.

It is fortunate for Germany that another distinguished officer, (General Von Schmidt). held different views as to the importance of fighting on foot. He said: "We cannot conceal from ourselves that in the last campaign ( 1870 ) we appeared in the field totally unprepared in this respect, and the partial auccoses which we gained were due merely to the want of cohesion tin the newly-formed troops of the enemy and to the acknowledged bravery of our regiments, and not to the instruction which they had received.

Great cmphasis has been laid upon the unfavorable bearing of improved small-arm tire upon the use of cavalry: on the contrary its Falue has. thus. heen enhanced: for with the beeerh-loader came an improved morale of the cavalry soldier and in his hande, the masazine gun has achieved its greatent trimmphes. Cacalry is all that it has heen, and more: it moces abreant of taktical reform; more than wer it is a strategic factor; if it now reldom thunders down in ponderous masser upon the front of an infantry lime of battle, it may, yet, dash with equal etteret upon the hostile flankn. If more peetry in the past, there is full meanure of glory and usefulnems in the future.

Prince Kraft has confined himself to a consideration of the auxiliary use of cavalry; as he saya, very truls, the dutien of cavalry in that respect must be performed with more precision than ever. To this end. howerer, the -individuality of the unit and the independence of the mass must be cultivated Make your caralry

[^1]a self-reliant body, and its value as an anxiliary force will be in. creased. But it must be able to "cut loose," athl it must know how to fight on foot, like the harsemen who. in 1shis. charged over the entrenchments at Selma and Five Forks. It cavalry amals there cannot be found more important, more glowions fats of arms that these; yet one was an "analiary," the other an "independent ${ }^{*}$ operation; and in one day those troops, each of them. charsed mounted with the arme blanche and on foot with the brecelh-loading carbine

Let us briefly review the salient features of the cavalry operat tions during the Gettysburg campaign. and note how far they go toward proving the superiority of the so-called "hybrid" varicty of cavalry over soldiers taught to leave their sambes only under protest.

## actiliary orerations.

The campaign of Gettysburg is unique for the rariety amd im. portance of its cavalry service. The strategic points of that service have already been diseussed in this Journal:* it is my purpone to touch upon its tactical features. Within a period of thirty days there occurred:

1. A great cavalry battle and reconnoissance in force (Beverty Ford, June 9).
2. Frequent combats in the performance of sereening and in telligence duty (Aldie. Upperville. Middeburg. Jume 15-2l).
3. The occupation and retention. by cavalry: of a cometed prosi tion, in the teeth of a very superior fince of the enemys infantry (Oak Hill. July 1).
4. At a critical moment, the reinforcement of an infantry line of battle by cavalry. (Seminary Ridge. July 1 ).
5. In a hattle crisis, a cavalry division wiedding the balance of power (Near the Round Tops. July 3 ).
6. The defeat by cavalry of an attempt by an equal monuted force to gain the rear of an arms. during a geteral enfagement. (Rummel's Farm. July 3).
7. Beverly Ford.-It will be remembered that atter the battle of Chancellorsville, the opposing armies rested for a time near Frederickaburg, on opposite sides of the lappahannock. Early in June. 1863, General Hooker suspected that General Lee was moving a part of his army northward, and to determine this he ordered a reconnoissance-in-force across the Rajpahannock. It hapjened that

[^2]the enemy cavalry prepared to execute a similar movement, on the same day and by the same genaral route. The loion force comprised 7.0 an cavalry. 3.000 infantry and twenty-tour guns, under General Pleasostos. The Contederates undar General Stuart, numbered about 8.500 cavalry and twenty guns; and these were orentually re-inforced by a division of infantry.

A part of Pleazontoxs duty was to develop the enemy's intantry as well as to engage an equal force of cavalry. Two small brigades of intantry, had cherefore, reported to tim as reserves and to hold the tords behind him in case it became nevestary for his cavalry to leave the Rappalannock river far in rear. Now-a-days such a provision would be, considered. in this country at least, supertluous and a rethection upon the seltsupporting eharacter of the monnted arm: then it was juntitied be the rules fore such an operation. cavalry methobs being still somewhat old fashioned.

On the night of June sih. Pheasonton bivonacked on the north bank of the Rappahannock river, near Beverly and Kelly's Fords, which are eight miles apart. Stcart's forcen were encamped on the south side, at and between those fords. witf two brigades thrown well out to the left of his headquarters on Fleetwood Hill, just in front of Bramly Station. It was his intention to crose at Beverly and the "pper fiods next morning, and divert the enemy's attention from the movement of Lees infantry towards Pennaytrania. Stu- * art. ighorant of Preasontus's proximity. contented himself with a mominal ohservation of the river: with a view to athearly crossing, fiur hatteries of his horse artillery were parked almont on the verge of the river, within atone shrow of his enemy. Just at dawn, under cover of the theg and the moise of the dam, one-half the linion torect, muler (ingati, crosed at Kellys Ford, while the remaining portion, under Braorb, dashed upol the astonished Confederater at Bevorly. threw them iuto confusion. and would have taken a rich prize. had not the death of Coloned Davis, who led the attacking foree. Checked the ardor of pursuit. and enabled the surprised foo to withlraw his guns to the shelter of the timber. Of far greater walue than captured guns were certain papern, found in the abandoned desk of the artillery commander, which furnished much of the information for which Pleasonton had come. Bat he could not witheraw without crossing sabers with the southern: horsemen, who, under the inspiring presence of Stiart, soon presented an imposing front. Strart had the advantage of position; the ground, intersected by ravinen and low stone fences, and interppeped with groves of large treen. rose gradually in the direction of Brandy Station. A
pause by the Union troops for formation enablel the Confederates to concentrate upon Burord's column.

Brford's advance was stoutly contested for four hours, but ultimately Stcart's men were forced back upon Brandy Station which Grego was rapidly approaching from Kellys Ford. At this critic:al moment a fresh Confederate brigade was thrown in and fiercely attacked Bufords right. Grego had just connected with Brembd, after a warm engagement with the enemy's right and rear, and the combined Union effort was beginning to tell when Pleasonton, at. 4 P. x., having "developed" a distinctly superior infantry furce. ordered a withdrawal. This was accomplished leisurely and without interruption, the last of the Cnion cavalry recrossing the river at $\% \mathrm{P}$. M. The determined character of this engagement is evident from its duration of ten hours and its casualties of 932 C nionists and more than 500 Confederates; on both sides the lows in officers was large. While there was some dismounted fighting. the operat tions were principally mounted and the large number of serere saber wounds attests their hand-to-hand character.

Never before nor since were the conditions so favorable for a cacalry duel. Men and horses were in their prime. the numbers on posed nearly equal, the infantry on both sides exercising a moral rather than a physical support. From a careful examination of the official testimony- Cnion and Cohfederate-and my personal recollections of the fight, $I$ draw the following conclusions: (a) That the combat at Beverly Ford may serve an an illustration, on a moderate seale, of the great cavalry battles which are to open future campaigns; (b) that the dismounted fighting in such engragements is as the leaven to the mass, giving consistence to the character of the action, adding importance to the results, enabling advantages of position to be retained and valuable time to be gained; (c) that the Confederate cavalry, caught napping, endearored to repair its fanlt with promptness and gallantry; it had. however. been chected upon the threshold of an aggressive movement, and its leader was taught a lesson, which nooner or later is learned by the general who undervalues his enemy.
donastreet, who was present with his corps near the ncene of this combat, has asserted that, "after stiart had repulsed the force thrown across the river, we might have fallen upon the force and crushed it, and then put ourselves in position, threatening the enemy's right and rear, which would have dislodged bim (Hooker) from his position at Fredericksbury and given us the opportunity for an effective blow."

General Lonostreet's poilt is not well takell. What was reported by General texe as a "repulace." was simply a mithidracul. for reasme uncomected with the condition of the action, and it is mo longer seriously clamed that the retirement of the C nion fioree was not made in perfect order. Had General LeE attempted to fall upen Pleasontos, the latter wobld, doubtens. have retired promptly, as the mobility of his force would have enabled him to do; and even if the "ertushing" result had been produced. the loss of a division of cavalry and infantry, more or less. could hardly have had a serious effect upon the fortunes of the Conion army.

It has been waid that Beverly Ford ". made the Federal cavalry." True. it there received its first diphoma: but the outpost duty on the Rappahannock during the previous winter, the monted rehearsal mader Avereif at Kelly'r Ford in March, and the experience of the sronemas raid in ajpil were stepe in its education whell led th its graduation in Jane.

It has also been asserted that Pleasostosis reconhoinsance was not as fruitful as desired by General Howner. Nevertheless. acting upon information made up from the papres captured with the denk of Strart's Chief of Artillery (which gave indinet evidence of Lee's intentions. from the examination ot prianers abll from other truits of the action Hooker was combled to so divjose him army and anticipate the movements of the enemy as waid his sumereson in achieving a triumph at Gettyburg.
$\xrightarrow{2}$. Sorerning amil Scouting.-Tle caralry operations from June Oth until Jume $2+$ th. When Strart. With three higales, started ujen an indepembent (xpedition into Pennoysania. were marked by wund methods. Stiart guarded the Hanks of Laeks army vigilantly, aided by the mountain wall which ran parallel to the Contiderate line of march. Pleasostos. veiling the movemente of the Army of the Potomac. successtully disputed the possesmion of the principal prases through which either army might be molested en route. These combats were spirited, now mounted. now on foot, as the nature of the ground seemed to reguire, and were remarkable fior their number of casualtien--. Suermas's favorite test of the carnevtness of a fight.
3. Buford at Oak Hill.-No battle of modern times has been more thoroughly analyzed than dettyourg: and as the evidence is -ifted the impartial critic becomes impresed by the extraordinary hearing of the cavalry operations upon the wane of that struggle.

While the opfosing armies were approathing the field of battle the principal Confederate cavalry general-Stiant-"in the exer-
cise of a discretion given him by General Lee. determined to pass to the rear of the Federal army and cross the Putomac at Seneca Falls, a point between that army and their capital. Including the brigade (Jenkins') and battalion (White's) of cavalry, which composed the van-guard of the army, over one-half of the cavalry wus left in position to be used by General Laf. * $*$ According to the same authority, the force with Stcart numbered 4,000 . That len behind about 6,300: of this force only the brigades of Joses and Robertson belonged to Stcart's command and were subject to his order.

Fitz Lee says, "The boldness of General Lees offensive strategy: in throwing his army upon one side of the Potomac. while leaving his adversary upon the other, made it particularly necensary for him to know the morements of the Federal army. Stiant. with his experince, activity, and known ability for such work, should have kept himself interposed always between the Federal army and his own, and while working close on Meade's lines, have been in direct communication with his own army commander.: Stcart left behind him two small brigades under Robertsos with written instructions $\dagger$ intended to cover all contingencies; but this provision proved inadequate.

To this day there is great difference of opinion an to where the responsibility should rent for this loss of tourh with the ['nion army. The testimony appears to fix the respoinsibility (1) upou the Army commander who, under the circumstances. gave the "discretion" spoken of above: and ( $\because$ ) in a moditied degree upon the Cavalry Chief himself, who exercisel such diseretion without leaving behind him a suitable force with orders to report th the (ieneral-in-(Chief. It is easy to criticise after the fact. and these comments are purely impersonal and given for what they may be worth in comnection with the study of a famous cavalry war lesson.

General Meade assumed command June 28th, and on the following day directed a general udrance. His cavalyy was ordered to the front to feel for the enems, whose general location in the Cumberland Valley, between Carlisle and Chambersburs. Was known to Mrade. Greon guarded the right flank. Kitpatrice covered the centre, and Buyord, with two brigades (Gambie and Devin) horered well in advance of the left of the army, which rested near Emmettaburg; the Regular Cavalry Brigade (Merritt) being in rear at Mechanicstown protecting the wagon trains. On the $\mathbf{2 9 t h}$. Bu:-

[^3] the Emmettsburg roati, and reached Gettysburg about 11 A . M.. $\cdots$ just in time." as he reported. "to meet the enemy entering the town. and in grod season to drive him back before his getting atiothold."

- It does not appear from the correpmolence of the 3uth between Meabe. Rex Nobde and Boford. that cither of the two tirst named then thought ot Gettyshurg as a probable battleground. Late on that day Revsobs wrote to Butterfieli, . If the enemy advance in force from Gettyshurg and we are to tight a detensive battle in this vicinity. the poxition to be oceupied is just north of the town of Emmetinburg." General Meane. in a dispatel to Revnolds, dated Tume 30th. 11:30 a. m., acknowledired receipt of information an to Befords arrival at Gettyburs and says: . Whether the holding of the Cashtown (iap is to prevent our entrance or is their (the enemavs) adrance against us. remains to be seen. $* * *$ I have pinshed out the cavalry in all directions. to feel for them, and wo soon as I can make up my positive opinion as to their position. I will move again. In the meantime. if they adrance agatinst me. I must roncentrate at that point where they show the strongest force. Sour present position ras giten more with "t rive of an "deance on Gittysiburg, than a detensive position.

The contederate commander had. on the ereninge of the $\geq 8 t h$. learned of the movement of the L'nion army morth of the Potomace. amb decided to concentrate his owia arme near the puint at which the news reachei him. (hambershorg: hut on the 3oth he was as merertain ats his opponent where the hostile fores would mete. The question was derided hy Gencral Brarb. That oftieer. as we have
 send ont soouting parties. By nishtithl he had learned that Hamis ooppo of three divisions ( Andersons. Hetio amd Pender, was masked at Cashtown. nilue miles distant, with pickete in sight of his own: that Eweta's corps was crossing the mountains from ('arlisle, and that Lomistemet was hedind Hidi.. Brforb phaced his command, about 3.500 effertive men. in position to the morth and west of the town. with the Chambersures. Fairfich. Mummastown. Carlinle and Harrisbarg roads picketed well to the tront. Gavales's brigade on the left connected with Devis on the right of the ChambersburgCashown road "pon which videttes were posted to a distance of four miles ont. Although the orders to Brembat this time did not require anything more than to give General Meade and the commander of the nearest infantry (Raynobs) the earliest information of the enemy's movemente. yet Bu porb seems th hate had no donbt
as to the proper thing to do. He was the first Coninn general on the spot, and he then recognized, as others did at a later moment. the natural advantages of the ground for defensive purposes, and made his arrangements to hold it. This spirit he imparted to his brigale commanders, and that night warned them that othe enemy will attack us in the morning." As the Comte de Paris says. "This first inspiration of a cavalry officer and a true soldier. dewided. in ceery respect, the fate of the campaign. It cas Bcrord tho selected the buttlefield where two armies were about to measure their strenyth.

With the earliest dawn (July lat) the adranced vidette on the Cashtown road reported the enemy's approach. Methis division ot infantry, 7,000 strong, preceded be a clond of skirmishers, mosed upon Beford's cavalrymen: attached to Hetils command were vix batteries of field artillery. Toward Cashtown the road was aray with the men of Penderis division. to whom Getty shurg seemel unoccupied, except by a few horsemen. But behind the first ridye. cast of Willoughby Run which crossed the road on which the Contederates were adrancing, Bcrozd's dismounted men hugged their carbines, their horses being screened from riew by the depressions of the ground; deducting the horseholders the available fighting force under Gamble and Devin did not exceed 2,500 men.

The preparations to receive the confelerates are well whin the diary of Captain Dana, Eighth Lllinoin Cavalry:
"When I reached the outposts about sumbise. I could see the rnemy's skirmish line adrancing showly and reaching from right to beft acrons the Cashtown road, and as we thought, for a distance of a mile and a half, concealed at intervals by timber. but widently a continuous line formed for adrancing. A short distance at the rear of this skirmish line, in the open road in our front. were columns of infantry deploging into the woods, evidently torming their line of battle. I' immediately forwarded a report of my observations to headqnarters, then, dismounting my entire company and sending the horses to the rear, called in the pickets and formed the first line with twonty men, including myself: * * The enemy advanced steadily though cantiously. Our first position proved to be well taken; in our front there was a large open field. Scattering my men to the right and left, at intervals of thirty feet, and behind post and rail fences, I directed them to throw up their carbine sights to 8010 yards, then taking rest on the top rail we gave the enemy the benefit of long range practice, from a much attenuated line. The firing was rapid from our carbines, and at the distance induced the beliet
of four timen the number of men arthatly present. ais we learned trom prisoners taken soon ather.

Tinbabis battery Second Artillery umder Lieutenant Camef, tas posted just in front of the ['nion reserves. on the right and left of the road and oproded fire about $x$ A. m. Heary skirmishing ensued with damage to the confederates. who were more expesed that their opponents. General Insti was decoived hy the warmoth of his receptome and it is saith has sine admitted that trom the character of the defense and its rapid and effective tire he sulposed that he had intantre in his front, and, therefore alvanced slowly in order to give time tor the remainder of the eorps to chose up. At s: 311 a. M. the loion cavalry had tallen batk sume gon yards: the ellomy was be".wming more aggreswe while the artillery and smallarm fire became continuons.
 men. strenghening a weak ofot or ansiously seanning the Emmettshire roal for sigus of re-intionement. Never betore had he realized the full sense of the historic Waterlom cry, "Oh! that night or Barcher were come:" He hat been in commanication with Ressolis, and knew that two linion corps were en route to his support. It this moment ( $: 3.3$, A. M.). the signal officer reported Reynolns' headyuarter that in sight. Buporin exdamed. . Now we can hold the place." Rervonds and statf came uf orl a fallop, and with a saty wave of his hamd, Rexsolds satid. "What is the mater, John?" Beforb replied, "The devil: to pay!" Both dashed to the tront to rewnaniter and were recoived with cheers by the hard-pressed catatiors. One-half of Cabefs horses and a number of his camoneers were killed or diaalbed. Contederate troobs were mpidy coming into prosition. and it was evident that at any moment the Seminary
 Rersobse, First dorpe rame on the grombl, dropped quickly into
 tisillanle antumaed the oproning of the second chaptor of the ntrife.

The subsequent events have pased into history. . How atter the arly death of Rexsolds a fieree struggle ensued between the corps of Holl and Ewema. on ome side, and botblabay and Howard on the other. which resulted in the rout of the Eldeventh, and the derimation of the first Corps. How Burort, at 3:20 p. M., sent word t. Pleanostun that a tremembus battle had been raging since ! : 30 A. N.. with varying sucress. In my opinion there seemen directing head.
4. "Stemminy the Tide" at Semıury Ridife.-...At 4 p. M. General

Howard sent wordto birord to ifoto Dovblepays suppit. The Union lefl was menaced by fresh tronp of the cnems. One at Beford's brigader ( Devin) was watching the extreme right of the Eleventh Corpse and the other (Gamble), with which Brforf was present in person, was posted on Dochledary, left rear. When the cavalry commander recuived the order he " rose in his stirrups upon bis tip wes and exclamed. What does he think I can do agathet those long lines of the enemy out there? Very well. I will sed what I can do, and like the true soldier that he was. he moved his command out in plain view of the enemy and formed for the charge The enemy veeing the movement, formed squares in erhelon, which delayed them and materially aided in the escape of the First Corp. if it did not save a large portion from capture."*

Regarling this incident Browns reported that. . Neeing our troops retiring and their need of assistance. I immediately rushorl Ganple's brigale to Dotemebay's left amd dismounted in time to render great assistance to our infantry. and to check and break the enemys line. Mytroops at this place had partial shelter behimd a low stone fence and were in short arbine range. Their tive was perfectly territic, causing the enemy to break and rally on their second line. which made no further advane toward our position.

General Ganble says: "Our men kept up the tire until" the onemy, in overwhelming numbers, approached wo near that in order to save my men and horses from capture the were ordered to mount and fall back rapilly to the next ridge. in the laft of the town. where our artillery was posted. The stand which we male argainst the enemy prevented our left Hank from being turned. alll saved a division of our infantry."

The force opposed to fanmate was Lane: North ramolina bri-
 portedt that "We ( 7 th, 37th. esth, 1 sth and $33 / 4$ Rogiments, wort ordered to the right of the road and formed on the extreme right ot the light Division. Ifere I ordered the Seventh Reximent to deploy, as a strong line of skirmishers some distance to my right and at right angles to our line of batte. to protect our hank. which was exposed to the enemr's avalry: Pettitirews and Abcurer: bri gades were in the first line, immediately in our front. We were soon ordered forward again after taking this position. the sirventh being instructell to more as skirmishers by the left Hank. In ad vancing we gained ground to the right. and on emerging from the

[^4]woods I timad that my line had passed Arroer's. and hat my entire front was ummasked. We then moved about a mile. and as the Sev. enth Regiment had been detained a short time. Cdonel barbotr threw out forty men to keep back some of the enemy's eavalry which had dismounted and were annoying us with ha enfilade fire. We moved across this open field at quick time until a body of the chemy's cavalry and a fow infantry opened upon us from the woods, subsequently occupied by Pearam:s hattalion of artillery, when the men suve a rell and rushed forward at double-quick- the whole of the enemys force heating a hasty retreat to Cemetery Hill."

Breiond, having checked the Confederates in his front. placed his command on the extreme latt to wath and tight the enemy should he makt another attack, and in person went to Cemetery Hill for ohservation. While there General Hascork arrived. Hancork reported that $\cdot$ at this time the First and Eleventh Corps were retir ing through the town. clowely pursued hy the enemy. The cavalry of General Breorn was oceupeing a tirm position on the phain to the left of (iettysumes, covering the rear of the retreating corps."

It may be well for the student to consider certain peculiarities of the cavalry actions of the first day at Gettysburg. The full value of the prize for which Breorb strove at dak Hill in the morning was only realiged long after the hattle. The dispositions made by him the night before to meet a formidable onset of infantry; the womplete nature of his methods of obtaining information of the "nomys movements: the skillfal concentration of his limited fore hetween the town and two hostile army corpe, approathing from different directions: the good julgment of the officer in charge of the first skimish line in opening fire at the extreme range of his narbines: the gallant and effective handling, by Lientenant Cadef, of his two sections under the concentrated fire of twelve field-guns at elose fuaters: the chatacteristic tenacity with which the dismounted cavalrymen held their ground, having "to le literally dragged back a few hundred yards to a position mone secure;" the ral love of fighting shown ly wome of the Third Indiana Cavalry, who. found horseloblers. borrowed muskets and fought side by side with the Wiseonsin regiment that came to relieve them;"* these all (a) to whow the superiority of such cavalry methods with a fine per ronnel to direct and execute.

The athair of the aftemon. when Gambif: cavalive brigade was interposed and literally . stemmed the tide." was, perhaps, of equal

[^5]importance with its earlier service. One purgese of both actions was similar to that at Woerth and Vionville. in the Franco-Prussian War, viz: to gain time for reinforcement and to neutralize an impending flank attack big superior force of infantry. The tralitional methol for such emergencies. a mounted charge and fromtal attack upon an unbroken infantry line of battle, was tried there: at

- Woerth it was a miseratle failure at Vionville it succeeded : in both instances the percentage of loss was tremendons: it was in the nature of the gambler's hast stake. but. nevertheless. (according to European precedent) was considered the only thing to do. I do mot assert that Bcrords method wongl have been better at Vionville. than Bremow's more brilliant feat. but the French and German experience in 1800-1 left the question open. and therefore makes the lesson of Gettysburg dodbly instructive. But methods are valueless withont men to demonstiate them. Among the great marshals of cavalry Joins Berord stands in the "first set of tours." His persomal character was pure as his professional reputation. Hin sobriquet of "Honest Jons" fitted him like a glove. He adored sincerity. and when upon his death-hed. many months atter Getlyshurg. he received the commission of Major General, acoompanied by an antograph letter from Presilent Lascons, acknowlentging the value of his serviges, the dying hero, evidently considering the relative bearing of sympathy and serfice upon this loug deferred reward, turned with a faint smile to a friend. and whispered. " bese he mern it? ${ }^{*}$

5. Cacalry neur the Round Top.-Early on the moming of July2d, Breorib was ordered to retire to Wengminster in rear of the centre. This deprived the l'nion left of caralry protection until the next day (July 311 ) when the hrigades of Firssworth and Mfreitr were sent to take position to the lett and front of the $\cdot$ Romal Tops. and. under the direction of Khatratr. to attack the enemys right. Farnswortil reached the ground before Merbitt - whe had filther to mareh-and commenced skirmishing with the foree in his from (Homds infantry division under Geheral Law). Lasisitheet was meditatiog a renewal of the unsuccessful attack of the preceding day upon Meade:s leth. In front of Law all was quict; ill rear Leesartillery was preparing the fied for Proketts chatge and the time neemed auspicions for a cooperative movement. It this moment Farnswortifx horsemen appeared amd. Law says. $\cdot$ a new danger threatened me on the right." From that moment Law was on the defengire. Merritt. Aismounting part of his brigate. theatened to turn Law's fank and daused him to detach largely from his matin line and form a new one facing south. dbolt 3 p. m. Law put in
fresh trouln in Merritts fromt athl regained some lont gremud. soeving the weaknese of the conterlerate main line. from which had been drawn sis resments of infantry and thre hateries toconfront

 The nature of the sround and the lamalfol of cavalry available for the purpose made this a most timelhardy venture. The oriker was obeved with a opirit that exerited the almimation of the enemy. . It was impowible (says Latw) to toe our artillery tory alvantage, owing (1) the erose quarters of the attacking cavalry with our wow men the leadinge oqualron- foreing their horser up th the very muzzles of the riffer of our infantry. The First Vermont triking the skirmish line. only. rode throughit it into the open valley in rear of our main line. In-tead oif moviner directly upon the batterice the cavalry divected its course up the valley towards Gettyshorg."* This was Fiaswworth. in perwon, at the head of a small reqiment rapidly Wwinllines as it moved. to the proportions of a platom. In spite of his varnest protert be had been ordered by kifithick to attempt as gallant and as hopelens a task an that essayed at Pablaklava. With hostile infantry and a hattery in rear, law s
 there seeme.i mo way but hut straight torward, through a labyrinth of low stome fences. wer seep and rocky ground: eren then he saw another hostile resiment moving out aroos his path. At first the leoperation of fanswortits charge delayed the enemy fire, but ouly for a moment. His little column melted away under successive volleys: amd tinally. with one or two companions. be reached the human larrier acros- his path and refusing to surmender fell glori-- Haly, a aacrifice to am impracticable order. It was now 6 p. M., the sraml assault ot Paremp had tailent and looth sides, weary of the truagle, weloomed the territic thunder storm whichedosed the great hattle.

According to the Confederate athority already quoted. . General Longistheet aware of the danger that threatened our right from the athack of Khrathickis division. came over to my position late in the athernoon amb expressed his satisfaction at the result. We had all day beld our tront line, gained the evening before, and with tropes drawn from that line had repubed Kilpataick on our right Hank. It seemed was. on the Confederate right, that there was at least a little spot of silver lining' in the cloud."

On the C'nion side the agreressive operations of the cavalry had
accomplished an important diversion. The Contederate textimony shows clearly (a) that the two small cavalry brigatex of Mereitit and Farnswortil so fully engaged the attention of Law's intalley division that its support of Pickett (at one time contumplated by Lonostreer) was out of the question, although such timely sujport would have rendered the fumous assault of more arail eren if it had not seriously affected the general issue; (1) that an ative eonpuration of the Union infantry near Kilpatrick upon Jaws attenuated front would have had a good chance of turning the Confederate flank and of "doubling up" Longetreet:s already disinterrated corps. It is fair to ansume that mounted operations alone would not have been so succersful, af the combination of the vigorou- fishtings on foot by Merbitt and the threatening mounted demonstrations by. Farnsworth - although the latter were carried to excess.
6. Rummel's Farm. While the Cnion cavalry was threateming the Confederate right. Stcart, having returned from his raid tow:ard Harrisburg, made a vigorous effort to reach the reat of the Army of the Potomac by way of its right flank, hoping thus to aid the jemeling assault-by Pickett. In this he was thwarted by General D. Mc.M. Grega, commanding a division of Meanes cavalry. The detailof the struggle between these two powerful forees have leeen elsewhere told by a participant.* It is sufficient for our purpose to mention that Strabtis command comprised four brigades, aggregating about $\mathbf{6 , 0 0 0}$ mounted men and that Gregit had three brigades, numbering 5,000; with each division were three batteries of homse artillery. The ground was mot unlike that at Beverly Ford and (as on that occasion) the Confederates had, at first, decidedly the advantage in position. There was some preliminary skirmishing athd ahont $: 3$ p. m. (when Merritt and Fabsworoti were hammering at Lee's right and Pickett was trying to penetrate Meades centre, Stiaht formed the fighting with Genisi. The brigaden of Hampons and Fitz Inee in column of squadrons moved in magnificent array upon the ['nion position, their drawn sabers flashing it the sun. Cister. with his strong Michigan brigade, moved rapidly and solidly to meet the Confederates, while certain detachments of Gizai; command prepared to make a dash upon the enemy where it wan likely to do the most good. The artillery un both siden made it hot tor the opposing cavalry mases until they became merged in the hand-to-hand combat which ensued. It was such a caralyy meler as would have delighted Mirat. So evenly matched seemed these enemies that tior some minuten neither side gained any advantage. Gencrals, subal-

[^6]terns. men and homes seemed chrulfed in a hooly whirlpool. Every posible wappon, natural and artiticial, was utilizetl. Sabers, piwols. fixts. He very weth and hoots of the horser had a part in this terrible strite. Cowher increased tonion pressure and a somewhat divided anthority: in the manasement of the brigater of Handron and Lee those command crombled away and finally retired from the field. The eanahtion repment-abmit ten per cent. of the force engagedimlicate the serarity of thin finur hours eontest. General Hamptos was severoly wonded: Captain Wabten Newnabi, in a dash for a wothern hatle-flar. Was received by its learer upon the point of his -prar-he:al. which struck Newhatie in the face and hurled him to the Eround. After the battle a fatigue party detailed to hary the dead .. found two men. one a private of the Third Pemnefania Cavalry. We other a Contederate, who had emt eath other down with their saloes and were lying with their teet together, their heals in opposite directions and the hood stained saber of each still tightly held in his wrip." It another point were fomal $\cdot$ two men, one a Virginian. the other a Thind lenneylvaia man, who fought on horseback with their sabers mutil they finally elinched and their horses ran trom under them. Their heads and shonders were meverely eut and when thund their tingers. though stiff in death. Were so firmly itnledded in each others flesh that they could wot be removed withont the aid ot firce: :

There incidents indicate the medieval ferecity of the individual fighting combected with what creter called an unsurjasoed charge on masic. It was one of many encounters, it our war where tho - hybrid " horsematm emulated the heary cuiransier of Mrest.

## indepenidevt expeditions.

Having eited the Gettysburg eampaign ay illastrative of the varied emphoment of modern cavalry in anxiliary operations. I had intembed a similar treatment of the Wilson raid in dabama in 1865. to show the varied possibilities of the arm as an independent fines. hut I have atready exeeded the limits which whould be accorded in a single number of a professional periodieal to une writer, however important his subject: therefore. I will conclude this sketch with a word or two on the subject of Raidr.

The lessons of our war. in this respect. mark mang failures as well as brilliant suceceses. ont of twenty-five or thirty well


equipped and imposing independent expeditions then made by vas alry, perhaps fifty per cenf. failed. But the suceessful expeditions had such an important bearing on the campaigns of their respective armies, and the want of specess in other canes was so evidently a matter of ill-timed movement, incompetent leadership, or incom. plete preparation, that through the Raid a new strategic factor was introduced and a new tactical element-ablmost a new arm of service-was created. (had this is mow generally recognizod throughout Europe. A refiable British* authority says that suld operations have "caused the American Civil War to be lookel upwn as a turning point, or the beginning of a new chapter in the hin tory of what caralry may be trained to achicve." .. There can bu. no doubt that in all futupe campaigns wherever there is a numcrous and highly organized boly of cavalry on cither side and when the country which is the theatre of war is favorable, cavalry raids will be one of the most important duties of the cavalry arm." A distinguished German-Captain von Widpers - write: (in 1879), "In a future war the divisions of Cicrman cavalry would not wait tamely on the frontier, as in 1850 , before commenc. ing hostilities, they would leave merely to a fer regiments the task of forming a sereen and would at once inrade the enemy's country with a mass of available davalry in many directions." Americait cavalry war lessons have also made a deep impression upon the young Emperor of Germany. if we may judge from his recent con. versation with Mr. Bigelow, and perhaps we may credit Captain von Widdern with the giff of prophecy. The serongest endorese. ment, however. comes from Russia. Since $18 s^{2}$ she has male .. the American system" of armament and instruction her own. Lang distance marches of large bodies of cavalry have been a comspienous feature of her preparation for " the next war.

Prince Lonenlone ntands almont alone in his apparent beliet that
 European requirements. Id his letter .. Ought caralry Rails t. have been made in $1870-71$, , after defining a ruid to mean ann in. cursion made by a large mans of cacalry, during which this force is not only made independent of the regular command of the army. but is also unable to count upon any daily support from the latter. and is thus absolutely detached and left to itself," he cites a number of occasions in 1870-71 where it was claimed by other German writers that their cavalry mbithave been used adrantageously in this manner, and endeavoef to show that they are mistaken. In

[^7]$\rightarrow$ this discussion Prince Hohes lohe in handicapped (i) by his apparent satisfaction with what was then accomplished by the German cavalry. (2) by his assertion that caculry shoma never wander far from the infantry in the interest of their mutual dependence, and (3) by his theory that cavalry can never engage infantry on anything like equal termas. Among other examples considered by him. in the same connection, are certain suppositious descents upon French gun founderies and depots at Bourges aud Le Mans. He maintains that such raids would have failed there from the strength of the enemy's garrisons (composed partially of new troops), the hostility of the local population and the fact that one of the places was fortified.

By an interesting coincidence Wilsos's Alabama-Georgia Expedition. in 1865 , turnishes evidence of the feasibility of such unusual "perations as those instanced by Prince Kraft, if undertaken in the "American manner," with troops similarly trained and led. With 12,000 horsemen, organized into three dirisions, under such able leaders as Long, C'pron, and McCook, on March 25, 1865, General Wilson made a descent, by several roads, into what General Sarbman termed* "the bowels of the Confederacy." With great celerity, and a precision of execution worthy of the German Geveral Staff, this force, within a period of three weeks, attacked and captured, in -uccensinn. the eities of Selma. Montgomery. West Point. Columbus, and Macon. together with military and naval foundries a war vessel just completed. 60.000 prisoners and their arms. large quantities of ammunition and 300.0100 bales of cotton. All this in spite of strong and well manned earthworks. the vigorousentiorts of the famous partivan Formest at the head of cavalry and infantry, and the bittor lustility of the inhabitants of that resion.

Sot the least valuable part of this war leswon is the record of the extraordinary cersatility of the command. There were brilliant mounted charges. desperate fighting on foot against infantry, and assaulta upon permanent works worthy of a - forlorn hope:" while the details of bridge construction or repair, the crossing of wide and deep streams, and the ingenuity generally displayed in improvising means to an end must ever excite the admiration of the military student. A staff officert who accompanied the expentition is fully justified in claiming that it was "a legitimate military campaign, planned and executed with rare ability, directed against fortified pointa defended with all the resources of military art, and in the

## - War Records.

"The Campalgn of Selma." Yajor Honta, Cincinneti. 18\%b.
aggregate by vastly superior numbers." Priner Krart has the advantage, perhaps, of knowing just how tormidable the French tiortifications were, while I can better extimate the quality of the force. that overcame somewhat similar difficulties in America. In assuming that Germann can be trained to equal any wolders in the world I fear no German contradiktion; I also claim, without a shadow of patriotic prejudice, that the lesson's of the last wenty-three years fail to show cavalry operations of equal holdness, versatility and independence as compared whth many of those which occurred duriner the four years immediately preceding; and I further assert. respectfully but firmly, that the cavalry system favored by Prince Khat will never produce such important results in any country.

An erroneous impression prevails abroad that the average theatre of war in Europe is not adapted to the practice of American cavalry methods, on accoupt of its more dense population ants scarcity of timber. But it wan a peculiarity of our great war that every existing condition on the face of the carth becamer, at one time or another during those erentful four years. a factor in the problem. As a result of A merican and European experience, therefore, it seems possible to create a cavalry superior to any yet known. Of such a quality, for instance.might be a force composed as follows: One thousand men from twenty-five to thirty yars of age medium size and weight, each possessing the physical training of the German soldier, the, natural individuatity and intelligence of the American volunteer, the elantic discipline of the American regular cavalryman, and the horsemanship of the North American Indiath: armed with a light brecthloading detachathe magrazine carbine. small-caliber bullet and smokeless piowder. together with a hort. sharp saber, in the une of thich the sohdier is expert : monnted on medium-sized, hardy. active horses. lightly equipped. With the tactice of a Sueridan and under the leadership of a Merbitta a Wif. sos. an CPTos or a (rotrkes, such a concentration of human power and mobility might roam over an enemys conntry. execoting. at will, its function as a piercing eye. a quick ear. or a hesom of dextruction; with the addition of two caisonless field-guns and a small pack train for supplien, this model command might produce results which, under the Franco-Prussian system. could not be accomplished by a mixed corps of $\mathbf{5 , 0 0 0}$ infantry and cavaly.

I am firmly convinced that the cavalry of the near fiture will be conspicuous for its independent employment; that the changes in its organization, armament, and instruction will combine' in the new force qualities heretofore divided between two arms of serviee: and
that results commensurate with its increased power will therefore be expected from its use. The increased independence of cavalry will necessarily affect the tacteal use of infantry: that arm must be more self-reliant. General sherpasis claim that the infantry of an army in the field whould be able to protect itself in camp and on the march will become a maxim. Even that costly auxiliary corps of warchariots - the field artillery-under the bolder practice of the present day has learned to depend for safety, in an emergoncy, upon the rapidity of its fire and the gallantry, of its personnel rather than upon its tactical "supports."

The morabof all this, it seems. is that we cannot afford to rest our faith too dosely upon the lessons of a single campaign or the traditions of a single country, but that we should avail ourselves of the universal Past in our military preparations for the Future.

THEO. F. RODENBOLGH,
Colonel of Curalry (retired),
Brt. Brig. Gen. U. S. A.

The introduction of the loose as a factor in warfare lost as the time of such introduction is in the retooteness of antiguity, doubtess cansed a change in war tacties. rather than in the weapons used. The introduction of gunpowder. however, caused a change in weapons as well as in tactices and it is only since its introdurtion that licavy ordnance. as we now understand it. became possible.

Striving always for something with which to strike at a distance. the advantages to be derived from a light weapon for mounted use were early reengnized. and the pistol is one of the first of fire weapons to be invented and put in use. Crude and imperfect as these weapons were, they contained the germ of our modern revolver. And if wo greater une wat made of them than history indicates, and if they were gradually replaced by the saber, it is not because the idea of their use was erroncous, but because their mechanism was so impertect and the powder so wret hedly poor that their effectiveness whs necessarily very low. This, together with the litter prejudice of the knight against all use of gunpowder, would naturally turn attention to the saber, and foster its use in preference to the pistol; and so we find the saber still kept as the weapon for the mounted man. to be supplemented perhaps by the pistol or carbine as an auxiliary weapon.

And naturally enough. when fied ordnance had been perfected in so mach as to make an organization powsible for fich purposes, the cannoneers and drivers would be armed with the saber, aloo, an they would naturally be horsemen and might at times be called upon (o) operate indepememty of their fied pieces. For it mont be understood that, as near an I can determine. the first field batteries were more similar in their nature to our horse hatteries that to our fied batteries, and the cannonero were all monnted, there being no . Aher place then provided them upon which to ride.

But no matter what the cause may have been. we now have our modern tield artillergmen armed with the saber, and rarely, if ever. are the pistols used as part of the equipment. and I ask the guestion. of what earthly use is this saber, and is it not time for its atolishment and if any weapon whatever for defense is to be used, -hould not the revolver take its place?

It will doubthess be conceded that a light artilleryman's business in to serve his piece so an to be of the groatest use against an enemy, whether in opening an engagement in support of some weakened or threatened part of the line, or in helping to cover a retreat. For su-h work the cannoper munt be on foot, and mast put forth all his power in his proper work. Does the saber help him then? Or
rather does it not impede his movements and waste his strengh. if. indeed, he wears it, and dpes he not, as is uswally the case. have it strapped on the limber or caisson? And. if the battery is charged. and the sabers are on the pen, of how much use are they in the hamd to hand engagement with either the infantry or cavalry that may have orerwhelmed it? The cannoneer is on foot and we all know how feeble is the saber in such a case. The drives. it is true. are mounted, but how can thoy use the saber when their horses are harnessed in pairs and hitched to a limber or caisson? In both cases the saber is not only useless, but an impediment, and should therefore be done away with.

So true is this, that during our late war. I am told be foom authority. the sabers were never taken into the field in the general case. They were left behind with the baggage train. it. indeed they formed part of the equipment at all. only cough being taken along with which to arm the eentinels that formed the guard over the picket line and park.

And here again, of what use is the saber? The sentinel is on foot and can only reach the length of his arm plus the length of his blade. A good club would be of just as much use, and an a club the average artilleryman would use his saber if called upon to use it at all.

But how would it be if the artilleryman was armed with the revolver instead of the saber? Would he not then have something that would be of benefit to himself and to the whole batcery in ang. hand-to-hand engagement. or as a sentinel?

The writer is well aware of the disconcerting influence attributed, to a multiplicity of weapons and that it is clatmed that the artilleryman should have his field piece, and that alone, upon which to depend not only to overcome the enemy at long range, but at close quarters as well. It is well known that it is stated that during the war the revolvers had to be called in because the men would begin to use them when they had no businens to and when they should have yet been serving their gans. But is not this the fault of discipline and not because of the want of value of the revolver in its proper place? Cannot the men be tanght to une both and to understand that the revolver is only to be used as a last resort to save their battery and themselves from being overwhelmed? I think they can, and I think a well disciplined hattery can be kept at their guns until the guns are useless and then fall back upon their revolvers rather than a eponge staff oba handspike or their naked hands. as they generally
did luring the war: no better off than the early sapage in spite of all our modern improvements.

It may be said - in fact, is said by wome - that our future battes will be fought at long range, and that the artillery particularly will never come again to close quarters. Is that so? Ape we of the artillery to be relegated to the observance of magnificent distancen only, to pound away at long range and never to feel the shock of anything elwe but the shot and whell from our enemy's artillery and the sharp-- whoter's bullet. aloo from long range? My reading does not tell me so. From what I can sec and from what I read and believe, we of the artillery will have to "drive in" on the adrancing skirmish line and force ourselves home as close to the enemy an any one gets. We may have to do without support at times. or with but a weak one, and we whould have a weapon with which to strike more than thirty inches begond ones hand when occasion serves, and when our guns can no longer be used.

The writer is perfectly willing to acknowledge that he may be called "a crank." In fact, he is one on the subject of the revolver, if a thorough belief in its usefulness is what makes him one. But how did he become so? Let him say that he was piot always thus. He once beliered "that it was deadly as to ones friends but harm. less as to ones foes." as no many now believe. Let him way that he was converted by practical experience in teaching the use of the revolver to monnted men. while in the cavalry, and from an opponent. became an adrocate, firmly believing that the revolver is the weapon with which our mounted service should tey armed. and in the use of which they shomld be most thoronghly taught.

But in the use of the revolver no half-hearted measure should be tolerated. Better not have it at all than have it in the hamis of thone who only half try to develop its usefulnes. True emough, all our men cannot be crack whots in their experience with this weapon, but they can be taught to be fearless and free in their riding and charging. They can all be tanght to be fairly skillful, if not expert in its use. and men and horses can be taught to fear no line of men or of horsemen if we would but put ourselves to the work with a love and zeal. instead of trying to find a way how not to do it.

And if this is true of the mounted man firing from the unstable equilibrium of his horse's back. how trae mast it also be for the cannoneers of our artillery? They would be on foot, would have the firm earth for their support and could and urould be able to deliver a rapid and accurate fire whell called upon to do so.

Therefore, let it be asked, is it not time for us to do away a lit. tle bit with history and tradition and - for the artillery at least - do away with an obsolete and innocuous weapon? Is it not time to open our eyes to the present and to turn them twwards the futhre and try to see what we most need for prevent or tuture waits. rather than to sleepily plod on. content with what has been. making no effort to adapt ourselves to changed combitions, hugging to our hearts the traditions of the past, vainly hoping that they will serve us as guides for the future.
C. D. PARKHCRST,
*
have been asxigned, that be may always have ample and ready means at hand for identification. in cases of desertion.

By this methot it would be made practicable to furnish atach post in the army with a photograph and full description of each recruit enlisted within sixty days from the date of his enlistment.

In casen of desertion it should be made the duty of the compatiy commander to report at once to the Headquarters of the recuiting servire the man's name. etc.. to enable the superintendent to furnish each recruiting officer a photograph from the original negative in his poseswion. This would guard against the possibility of the man enlisting again under and ansumed or fictitious name. While in some cases it might be possible for a deserter to reenlist. hy so changing his personal appearance as not to be recognized from his photograph by the recruiting officer. yet he would still have to stand the serutiny.of all'his late comrades in the company from which he had so recently deserted. Upon his reenlistment a new picture would be taken of him. and in its|general rounds throughout the poots in the army, it would ultimately have to go to his old compana. and there the men, to whom he was known perwonally and with whom he had served daily. would at once be able to recognize him from his photograph. I refer to this recognition of deserters by the men because it is intended that the photographes shall not only be examined by the officers. but by the enlisted men as well. or at least by such part of them in are interested enough to look over the photographs, which should be dinplayed in the poot library during the time they are at the post.

The cost, then, is reduced to the original purchase of the camera. which is now retailed at twenty-five dollars, and the expense of oue negative and sixteen prints for each recruit enlisted. whith is estimated not to exceed fitty cents per man.

From the last annual report of the Aljutant ceneral of the Army, it appears that rix thousand six hundred and ninety-three recruits were enlisted during the year. This woull give an arerage enliştment per weok of one hundred and forty men, and the receipt at each post, under the kystem proposed, of fourteen photorraphic strips, which could be examined by each officer in turn in about as many minutes.

The cost then of photographing every recruit who entered the service in 1888, would not in all probability have exceeded three thousand dollars.

In conclusion, I would like to ask consideration of the effect such
a xysem would have unon mon contemplatiner lesertion: Would they not know and be made to aprereiate that the rery moment they at tempted to devert. they world be followed in every town within a radius of tify or sevente-tive miles with destriptive pesters. Which hy reason of their attached photheraphes wombl not hail one in titty


There are other finters of miner detail worthy of connideration. hut these can be disturow at a later date.

First Lievtenant, Thunty:imurh hufmery.

## hincosimen


 alvomated he Laentemant bomake logether with the synem of record int mark - on the bedy of the reront at prearibed in a recent order of the War bepartment. eomer within othe step of the aloption of the Bertionos Method of Identitation. viz: the meafurements prearribed by the latter methent. Whis step is still of vital importance it the fact that these measurements andmit of the elasitication or arrangement of the deseriptions of peruits in sull a mamber that ary individual deseription could be as realife found in the records ot the War Department as a word could be tound in a cercopedia. By the Bertibdos sostem the deseriptions ate printed on the hackn

 Ele ofle eat he casily foumd. It would be hard to armange a came of
 - carch.

While photugrapho are nut neressary to thix systom they form an iomportant aid. and now that the difticulty an to photographe appearn whave been solved hy Lientenant Dobar, there is no diftienty in abopting the Berthan system in its entirety. Another important point oceure to me, through the adrocace of photographing recruits ar propused by Licutenaint Dobese, and thim is that by adopting the Berthdos system. the descriptions neet not be phaced anywhere except in the War Department amd company files. as in the case of the present descriptive lists. The measurements may be taken at the same time with the photograph. as advocated ly Lieutenant Domes. These may be put on record in the War Department. An
the Dencriptive List of each new recruit arrives at the War bepart ment it will be a mattor of only a few moments work for any cherk to ascertain whether the same description is on tile therein. sbouth a deserter be entisted and his description reach the War Department, a short search would soon reveal the fact. and a telegram conld be sent to the recreliting ottieer to hold the man while a cops of the photograph and description is sent by mat. Lemen revitat tion by the recruiting officer the deserter could be lebld amp tried.

This methorl, besides sfeuring certainty. Would sive the experne ot' numerous photographes.

##  LOHE-INGFLFINGEN.


inabectior cientrat., r. s. a.


$I^{+}$I hond grow the promise mate in my last letter. to dineuse the repmathes mate against the cavary divisions in the Loire campaign of lxall. viz: That they came to a standstill, when the army hated. and did ont make distant strokes into the heart of the enemys conntre to disturl his mobilization. I am (rmpelled to rpeak of those enterprises that the Americans call $\cdot$ rads" and which have excited juat womler and have become vary celebrated. Whose heart doe not leat quicker when bereads Heros vos Burckex.. Two Years in the saddle." and who does not fiel the preser that lies in raids. in which large cavalry mases pass over quat expanses of comury depending entirely upon their own strenglh and dexterity. surprising the eneme on his Hanks, appearing suddenly in his rear and ramishing again. carrying uneasiness and termo into the enc"Iys camp and enequagement to their triembs. One unwittingly Peall, Wabasstens trooper. $\cdot$ Free will 1 live tree will 1 die; Wh owe displacing. mo one suceoeding, and upon the rabble hewath me. I promily look down from my charger." But pretry is buly time when it has a back-groumd of reality, otherwise it sinks into caricature: from the sublime the thediculons is but a ste]. Therefore it is neessary that we examine rade through the disenchanting glaseen of reality.

So tar as my knowledge goess no detinition han get been given of the military meaning of the newly coined word .-Raid." Judging foom the enterprises which have here wo named. my understanding is that a raid is a reconnoissance or incursion of a great mass of aavalry. (partaking nomewhat of the nature of our free-corps in our
war of 1813 ). during which this coppot eavaly not mily cuts fowe from all communication with the rest of the arme for the time being, but aims at such distant objectives that it is unable to deperul upon the army for any support and is given great latitude adnd tree. dom of action, und in case of being cut oft from it. own army by the interposition of the enemy, the commander is authorized to art upon his own judgment in determinitg the object of the rail.

If, an has generally been claimed hy crities heretotore rofinved to, the German cavalry should have intervapted the mobilization of the French it munt have had some detinite objective in view whi-h was worth the risk to be taken. Cavaley alome wobl have mabe bat little imprension during the mobilization. If a erowd of eomutry people had been dispersed here and there. or atn meaniomal hattalion that was it procest of formation broken tip. what efteet would it have had upon the general result at a time when dannetta a-
 these people could have heen cut down they had oftered mintance, but when they offered no resistance nothing coula be done but let them go. for we could do nothing against unresisting people and we would have had to pove too rapidly to admit of our carrying them along as prisoners. It is posvible that battalions of National Guards might have beep surprised. and taken. but mot many ot them, for it must not be corgoten that such tron- find subpert againat cavalry in woods. towns, marshes, etc.. a division of cavalry of sx regiments has $\boldsymbol{n}$ paximum of fourteen humbed eombatant, when dismounted, a division of nine regiments, as the Fifth had. catn have two thousand combatants when dismounted, and such a foree. armed with carbines, is not able to destroy an infanter regiment ensconced in broken grumad even it it is composed ot ath a-som. blage of prople without tatining and cohesion.
'These cavalry divisions eould have laid the comatry wate. burned defenselens citien and villager, etc. The riviliziol man ner in which Germany comducts her ware exdmotes such molertak
 German lexicon.

The attempt to interrupt the mobilization must have some ulte. rior object in siew that 中ill exercise nome more deciding intluchere upon the conrse of the war, without which. raids. simply as surh should not be undertaken.

There is but one legitimate purpose, viz: to rach the place of asaembly of the enemy new formation. to break up the foree there
arsembled. and to destroy the material collected for chothing and arming them.

If I were to ask at what moment such an undertaking would have been mont eavily executed during our war of 1860 any well informed military man would answer. - it could only have been done at the time when France had lost her entire regular army and had not yet recorered from the shock of the catastrophy of Sedna, or at the moment when we appeared before Paris and had completed the blockade of the "ity."

Alout this time the Fourth Cavalry Divinion waw put in motion with a view of making just such a stroke. It mot French troops, of all arms. on the 2.th of September at Bazoches les Galleranden, overthrew their weak auralry on the 2bth. and purnued it, but was rereived with such infantry fire in the suburbs of Chevilly that it was toreed to retire with lows. The attempt to penetrate the town by wher rontes demonstrated the fact that the entive morth edge of the Wheaths womes was held by French intantry.

- A combined attack of cavalry massen hi thim covered terrain did mot serem mivisalile." and the division took up its ponition at Thoury and Pithiviars.

Here we see the effortent the Fourth Divinion of cavalry to diaturb the enemys mobilization suddenly stopped when it came upon troope composed of all thee arms, which. although new formatione, were in a verviceable condition. Can the Fourth (avalry Divinion be reproached for having allowed thene troope the time required to organize and form? Certaingy mot. Distance assured these troope time enough in which to form. for Selan is alout 186 miles distant from the Orleans wool.

It was necessary. therefore. Wheak the resistathee of the enemy be the coopration of the other arme and Von ner Tans whipped the ememy at Artenay and took possession of Orlcans on October 11th.
This was the mont farorable time for a raid in the leart of the
 sented themselven to the south and southwent of Paris which were worth the aldritice that a raid might cont. It was well known that the Fronch had estahlished their grun foundry and other manufactorien. in the south. at Bourgen, which provided the newly formed army with material. An expedition to Bourgen wan worth the risk.

But General Von ber Tans. all experienced leader of partisana and acelnstomed to independent umbertakings of that kind, found his rommanil, of all arms. wot sufficient for such an enterprise. He
knew he had betiore him, to the south of Orleaths. the cutire fit teenth Corps, fiour divisions stronge on the Sialdre: the Sixteroth Corps was at Gien and Blois and covered the tank of this position. and Yon der Tane considered it advisable to hold his intantry at Orleans.

In conseguence of this the Twentr-secome Disision intantry) and the Fourth Cavalry bivixion were detached foom him anll int structed to clear Cheiteaudun and Chart res of the French trowp there stationed.

Should then the Second Cavalry Division and the Bavarian ('av alry have risked the enterprise of taking Boturco. which wan tiotified, and which the whole command of Von bek Tavs Wia mil considered strong enough to accomplish? Bourges lise almut ie miles from Orleans. What could one or even two cavalry division. accomplish there?

Let us grant that they succeoled in breaking through the ex tended tines of the Fitteenth corps on the Sambre and reathed Bourges. They would arrive before the fortitications of Bourgeafter three days of hard riding and fighting. The enemy being in structed by telegraph of the course of events wobld have sutherient time to bring all newly formed troops which the railroad tratis. could carry from Tours, or from the south by way of ("hateantons. Issoudun, as far as Viergen. trom which point they could be tiorwarded to the Sauldre and, with assistance of the divisions stationerl at Gien, they could take possession of the crossing of the satuldre which the raiding cavalry had gained, and so shat the dowe in the rear of the German horee. That the cavaly in the mean time should have succeeded in daking the fortified city of Bourgos and in destroying the work shops no one but a dreamer would beliese. After the efforts of the cafalry agrainst Bumege had prowed in vain. it weuld have had nothing else to do but watider aromed in the dreary valleys of the Soloone and atter many vain attempt- on cut its way through the eneng and get aross the sialdre. or the the northeast across the Loire, it would have al lant. pititully and minerably, laid down its arms, and surrendered to the werwhelmins force of the enemy, which, farored by the railwaw and telegraph lines, had forestalled it at every point.

To the southwest of ofleans there was another object tion such at raid. If it should succeed in reaching Tours quickly and in capturing the hearl of the endmys government. or in breakines it up. all forther measures for resistance would have been deffertaally
destruged. ir at leant greatly delaged. for the removal of the head of a mevernment always produces great confinion.

Bar what do we read in the anthentie histories? The road to Tours runs throurh Blois or throurh Vendeme. In Blois there were organizel divisions of troops that. on the 20th of October. compelled General Vos der Tass to adopt defensive measures, and at Vendome the Fourth Cavalry Division had met such resolute and determined resistance from armed inhabitants in the Marchenoir wood on the 18th of October. that it was supposed they were supported by regular troops and mulal not be beatén bey cavaly alone

Lee Mans oftered another objective for a mid. for new armies were formed there and grat quantities of suppliew were eollected at that proint. The route from orleans be the way of Vembome was barred. It undertaken trom breux- hartress as a base, the attempt wond have to be operated by way of Nogent he Rotrou or Alencon. I- the troops were stationed about Paris such an effort would have fallen to the Fitth and Sixth Cavalry Divisions. Does any one really believe that the city of Le Mans would have been taken if the fiftysix squalrons of the two divisions mentioned had appeared before it about the middle of October? Some one may make answer that at the beginning of the war Sancy opened her gates to the Fourth (awatry Division without firing a shot. But in Xancy there had been me mew armies orquizen and the popmation: was still under the shonek of a defe:at such as they had thought to be impossible. Two months had pased sine that time, which had been employed in torming new trong of the line. Mobile Ginard batalions and inlopentent corv.

Aner the tall ot the empire popular enthuviasm was greaty aronsed be the orders and prodamations of the government tor the national defense. Exery man capable of bearing arms was called into the service.

Calumnies regarding the conduct of nur tronps had inflamed the passions of the inhabitants, and numberless assemblages of armed ment resisted one trons whenever they found a promise of nuccess. Betore adrancing eavaly thene people wouth probably have eoncealed their arms and appared as harmlens citizens. or have fled to the woods, out of sight of the lines of travel. As soon as they had learned that the cavalry was not followed by any infantry they would have placed obstacles on the roads and supported by the regular. but newly formed. troops from Normandy and Brittany, which could quickly be brongbt on the tield by rail thmong Argenton,
these forces would have cont off the retreat of thin catralry commami it it had adrancerl bill to al miles beyond the armas.

The tenacious and profonged resistance which the Clonamsand the inhabitants of Vembermale against the immense armies of the Republic towarde the closef of the last century shows an how tatore able that country in for a peoplein war.

It may be said that the retreat of a resolute boly of cavalry cannot be cut off when it has learned to cross covered conntry. we climb, mountains and swim ricert. It cannot be denied that our cavalry accomplished wonders, ahd it has improved rery mach in later. years. But the overcoming of unusual obstacles of this kiod can only be expected of small pommands. Great masses. such as would be sent forward a distance of from $\mathbf{8 0}$ to 90 miles, athl which must remain ent off from all connection with the main arms fir trom eight to fourteen days chanot act with such freedom. Without artillery a eavalry divisi申n eannot fight with vufticient energy. especially when it is necensary to force a pasage through villages and defiles. and the guns cannot nwim rivers. Besides. a cavalry division cannot dispense fith a train of some size if it is to att independently for from olight to tourteen days. In $1 \times \overline{\text { In }}$ it was found necessary to attach' a provision columo and half a sanitary detachment, or a field hospital. to each caralry division an we are shown bey the .. Ordere de hataille." That will aloo be necesoary in the future.

In making the plans ton a military operation, in which numerous actions are to lee expected, pre one will consent without much deliberation to abmaton his wqunded to their thate. But a cavalry division. which udertakes an indepentent raid, requires a larger or smaller ammunition train. for the limbers and caiswons of the artil lery cannot carry sufficient material tor many fights, and, in aldition, the carbine ammunition may be exhausted, because the neces sity to tight onf foot often gecurs in such raids, and no one can run the risk of being tound entirely powerless against a small firce of infantry, posted in covered ground. simply through lack of carbine ammunition. There are certain leaden weighte which lang on the heels of the cavalry when they undertake the Pegasus-like Hight of a raid. which they must take along if failure is to be avoided. and which cannot be made to vanish as quickly as the caralryman mounted upon a well-trained. light-footed horse.

Let us cast a glance to the north and wee if there was an oppor tunity for a raid during the blockade of Paris. The direction of Rouen may be taken under consideration. Our cavalry was pushed
out to cover our rear in the direction of Sormanly, and was posted wh the line of the E.pte. They reconnoitered in Normandy and infimidated the inbabitant- during the day. but they chald not refinain there during the night. Numberless armed men Hed to the extensive wouled sections upon the approach of the catalry and would have surprised and atacked it during the night. One small detachment composed of all arms was surprised and attacked by night at Fitrepagns.

Directly north lay Amiens, where the enemr. under the protection of the citailel. and other fortresses in the vidinity. Sorissons. La Fere. Peronne had ample opportunity to complete his organization without being disturbed by cavalre. Iater, ather all the above named places had been taken bev siege the enemy tomad similar frotertion tior his newly organized trops in the groups at tortressem lying still thrther to the north.

Seek where I mav. I rannot find haring the horkade of Paris, a single oreasion where a raid of a large body of cavalry, one or more divisions. could have been made with reasonable promise of good results.

For a raid withont a definite objective we had no cavalry to spare. It would appear that such raids would have been prejudicial th the other duties of the cavalry. viz: the seouting. reconnoiteringe and out fues service in rear of the hesieging army

When Vos der Tase stopped his forward moverment at Orleans, it was already mecessary to detach from his command the 'Twentyaroond bivision atul the Fourth Caralry Division to subdue the threatening hostilities in (hartres and ihatemadun. He was left hut the serobled Cavaly bivision and his corje of caralry. Had he ventured a mad asainst Bourges be would have somen experienced a want of cavalry and the threatening movemente of the enemy againat his right Hank from the Marehemoir Weod and at Blois, soon firced him to rednee the cavalry on the leth bank of the Loire to a single brigacke.

What would he have done if he had detached hik entire force of avalry on an alventurons expedition against Boturges and the conemy had pressed him hard with a heavy force from the west as actually occurred at a later date? Learning too late of the movements ot the enemy. he would not have been in comdition to unite his forcow promptly at Coulmiers, and, instead of having been simply pushed hack. he might hare suffered a total defeat. loat his line of retreat and paid the usual penalty. Who would have undertaken the securing of the rear of the besieging army of Paris towards the north.
went upon the left bank of the seine if the Fith and Sixth ('aralry divisions had been detached from bil to 90 miles from the army on a raid againat Le Mass? The entire result of the war would have been put in question. if suddenly great masses of nowly organized French troops had appeared in the vicinity of Versailles from the direction of Caen. We had much cavalry in Pramee in 1870. It was superior in numbers and quality to that of the enems. and especially so atter the enemy had lost his excellent cavalry of the armies of Metz and Setan. But we certainly did not have too much cavalry. It was ondy by exerting itself to the utmost that our caralry was able to accomplish the work assigned it.

There was. perhaps. one brigade. the heavy brigade of the (iuard. which at this time was not over exerted. The divisional cavalry. which belonged to the besieging arma. was constantly in requisition and this domand tinally reached such a pitch that it was fiound nereessary to relieve it.

The detaching of heavy caralry masses upon such hazardous expeditions as raids is an enfeebling and endangering of the neurest and most vital interests of logical military operations. and must be considered as a mistake.

I cannot agree with the regrets. which are occasionally expressed. that upon our side no raidy were undertaken in the war of 18911-il and that no cavalry massey interrupted the mobilization of the new formations of the enemy. On the contrary. I am of the opinion that such undertakings had no prospect of grod results. aml that it was for our gool that ther were omitted.

It may be said that such raids need not take tor their oligeet the breaking up of the central point of the enemre operations in organizing his armies, hut should undertake smaller tasks. such as the ifestroying of railroads, telegraph corrnections. magazines. etc.

In such enterprises great cavalry masses should not be used. but small groups of cavalry, fhom an ofticer's patrol to a squadron in strength, which can disappar easily and quickly. .Plenty of these expeditions orcurred in the campaign of $18710-71$. J need ouls. recall the previously mentioned interruption of the rail and telegraph commonications, just before and after the battlew about Net\%.

## FLTVRE RAIDS FOR DISTCRBING THE EXEMY' MOBIIIZATION.

## TENTH S.ETTER.

IFIND myself under the necessity to-day of opposing ya oll all the points you have rased for the purpose of overthowing the rondusions of my last letter. You say, that in the War of secession in America, raids were executed with fine results. and that they must have been possible in our war. and that after eavalry are supplied and instructed in the use of better fire-arms. and other improvements are made in specialties. for example. it the construe. tion of brideres. etce, that rads will pay an important part in future wars, and that if we do not arail nurselves of themiat the berginning of operations the enemy will serionsly eripple he by employing them.

There can be no question that there were times in our last war when the cavalry did not do all that it might have done. I have already frankly acknowledged that. But that also happened with the other arms, and it always will happen so long as human beings remain human. - I do not intend to mention the particular instances. If any one neglected his duty, the arenging nemexis will have reached him. If any one, expecially at the beginning of howtilitien, should make mistakes through want of insight. or through tactical croos, his own experience will act as an instructor. and he will do better later on. There were many novelties in the war of $1 \times 30$ with which it was necessary to become acopuainted. In ofther directions we paid much higher for our lessons. I need only invite attention to the formation en masse in which our infantry everywhere entered the field of fire, or danger zone of the Chassepot riffe at the outeret. and to the fact that they only learned by enormons losses, at what great distance the fire of this weapon had an almost annihilating effect. But a fault committed, and recognized as such proves the rule as well as exceptions. In military matters a fault in recognized as such whell a capable commander takes pains to prevent its repetition. A more rational directing and leading than that wheh we had in $18: 0-71$ is difficult to find in history. This in whown by the results, and by the fact that all other armies, eren where it is mont diffecult, are copging from us. The manner in which Napideos the First conducted wars, and especially his carlier wark. was perhaps inore daring. but in directnessof purpene and comlnew of calculation
ours of $1870-71$ was far superior. Thin gencral eonsideration increases my inclination to.hold it as correct that. even in special cases, the application made of our cavalry during the war of $1 \times 711-1$ was right in principle, although in some instances the services per formed may have fallen short of the possibilities. Our army commanders would not have hesitated in ordering an extemded raid, such as the Americans made, if they had been able to promise themselves any substantial results, any more than they hesitated to send Mastetprel's two corps in mid-winter orer the ice and snow of the Gold Coast, in the midst of enemies, to reach the rear of Bocrbakis army. But great as the results of $18713-\overline{1} 1$ were, yet. a free and independent examination is allowable and no thinking man will permit his personal opinion to be so blinded as to accept everything as authoritative that was then done. But as I said in my last letter. a careful, free. and impartial examination of the observed experiences has failed to change the opinion I have previously expressed. and I cannot accept the conclusion, that. because raids were executed in America, and were productive of good results, they should lase found a place in Europe in the Franco-Prussian war, or that they must necessarily find a place in all future wars. In the American war of Secession the population was everywhere aplit up in parties as is always the case in civil warn. A caralry scouting party fonnd friends everywhere, eren ith the very midnt of their enemies. Means of information. and the care of the wounded, assumed an entirely different character in America. as did also the supplying of troops. for everywhere a part of the inhabitants could be counted upon to welcome the arrival of either. side. Further. in America there are extensive forests in which caralry could march completely concealod; for example, Sticapt's cavalry passed by the little village of Orlean * on the $\mathbf{2} 6$ th of August. 1862, withont any one having the least suspicion of it. Such a thing would not be possible in Beauce. Touraine, or Vendée. On the other hand, these great districts of uncultivated country, or undisturbed foresta. make loug and trying rides necessary in order to lcome upon the enemy. The entire character of the war was different and what was right in America may be all wrong with us.

The conclusion might be different if we were speaking of raids by the Prench cavalry. For the nake of argument let ns accept as a fact what was really not the case, namely, that the French still had masses of cavalry at their disposal when we were in front of Paris. One can

[^8]well imagine a raid of a French cavalry division. through Dijon. Langres. Bar le Duc. St. Menehould. Rethef to the northern fort. resserg every where facored bir the inhabitants, given timely notice of any threatened danger. lying many nights concealed in the Argome torest. attacking as and disturbing our lines of communication only at such pointsan the inhabitants had informed them were rither totally unprotected of but weakly guarded. Such a caralry division cond have done us great damage by threatening our communications. destroying the mil-road. capturing provisions. burning -upply trains, etc.. and rould thus have found an object of nufficient importance to justify the risk. Some smaller enterprisen of this kind. which were undertaken by infantry. accomplished results of the mont serious character tor us. as for example, the eurprise of Fontenoy on the $2 \underline{2}$ d of June. 1871. Nuch raids would find worthy objects in diermany. for German caculry. and could be carried out with tine resulte it the mistortune befel us of having war bring the vuemy into the heart of the fatherland. or even if political partisanship, or religious disputes, should bring about a civil war in our country. Then such raids could accomplish incalculable thinge through being supported in evers place, and in every city by sympathizing trients. They could appear suddealy in distant districts, wach rading party torming a nucleus around which their nympathizers would assemble, and they would in this way $\cdot$ raise armies out of the ground." But in undertaking them in the enemys country it appears to me. that, with the high degree of etficiency and fine organization of the armies of our neighboring states, the resulte would not juntify the risk. We have something analogous to them in the work of our independent corps in the war for freedom in 1813. Thoy accomplished great things while operating on German soil, but wore able to accomplish little or nothing attor our armies had crossed. the Frencla border.

But, it is well said, that such raids will be of much greater importance at the opening of hostilities in the fisture, if the caralry crosses the enemy's horder soon after the declaration of hostilities, and. by over-running the country. disturbs him mobilization. These tew worde have a startling sound. as though the cavalry, like a stream suddenly swollen by a choud-burst, Nile-like, are to dentroy all living things, and stop all intercourse. But a cavalry ouses of one or two divinions is not able to accomplish such a task. They would have to distribute themselves as individuals over the country and ${ }^{* \infty}$ the inhabitants, armed with clubs and scythes. could be able to deutroy them.

The caralry would have to adrance in imposing strength orer one, two, or at most three roads upon some definite objective where they could inflict serious injury upon the enemy and greatly injure his means of defense.

In order not to lose ourselves in generalities on this theme. we should consider a distinct case, and. supposing a war to have broken out, we must work out such a raid. with the compasses in hand, and sam up the possible results.

While doing this we must consider that it will be impossible for one power to surprise another wholly unprepared. I war can only originate through friction of some kind, leading to discord between the two governments with the result that each will arm. By the introduction, everywhere, of the general obligation to military survice, and the plans of mobilization, which are almost everywhere formed upon our system, a partial and preparatory arming is seatere. ly possible. It mast be taken for granted that the tirst steps made in the orders for toobilization apply to the army as a whole. Such an act can not be kept sedret, and the enemy will soon follow suit by issuing the order for mobilization, whether any declaration of war has been made of not, for he will receive the news of what his neighbor in doing by telegraph. In future the difference in time hetween the beginning of the mobilizations will not exceed twentyfour hours. We must then assume that the state which makes a raid over the lorder hat won a start of at least wenty-four hours over the enemy in his preparations. It must also be assumed that the cavally has received the order for the raid at the same moment an the order to mobilize. We must also assume very favorable conditions, where the cavalry will be in realiness to mareh out of garrison in the minimum number of days atter receiving the order. and where it will require very little time to assemble in division formation prepared for vigorous action.:

In order to secure a reasonable degree of certainty in such calculations it will he necessary to be in possession of exact information relatice to the preparations for mobilization of the armies concerned. This information is not at our disposal. bat sufticient information genenally leaks but to enable us to determine in how many days the cavalry of the invader can cross the border. On the other hand, it in granted that the cavalry of the defensive army. upon which the infader han gotten a start of at most one day. has arrived at that atage of its mobilization that the enemy had attained twenty-four hounn earlier.

With chese premises let us take ans trontise of any eivilized State of Europe and strike in any direction which ofters ath where tive. We may suppose that the cavalry in this one days adrantage will tracel trom twentyeeght to thirty-one miler and he measurement on the map will show what objects lie in their way.

Even if the border is free and can be crossed without any resistance, they may come upon rivers which call mot le crowed with.
 ings: this city has a garmison which is alrealy in whme stage of its mobilization. and he calling in those on leave etce. these garrisom are mach increased. Perhap the cavally may tall aforol of a field work or ceren upou a great fortress. Although the detersive buwer may wot the fully mobilized and armed. yet all will ln reaty for service and throurh expecting the invision of the encomy. realy tion artion. It must not be taken for gramed that the telegraph serviee has enone to slecp. hat that it han promply meported the in vasion. It is evident that a cavalry divixion can mot aroomplish anythine againat a fortress. should it strike an opeon eity. the p"ssession of it is unimportant if it does mot contain either a garrison. a landwehe headquarters, or swething of the kind. But doubl it happen to contain one ot these. then it must be calculated that the resistance oftered be it will equat in fince the resistance of all intantry battalion that numbers one thousand rittes. ('sul a "atratry division be depembed ypon to overome sueh a battalion. the satme evenines after having ma be tomed mareh daring the day? It least one eavalry regiment must rematin monted. andthe divition. if composert of six regiments. can not go into action with le-s than tourteen hundred dismounted troopers. Would these fiourten hundred carbineers be sure of a speely result aminst one thousatil rifles: Certainly not! Will they permit themelves tobe drawn into a stubborn fight into which all avaibable force is thrown. and which will result in almost total aminilation. if the atack taik? I think mot. It seems more rational to say that the game in not worth the candle. It might disturb the mobilization of a battalion. but in hoing so an entire division of cavalry would be renfered unservice. able fire some time to come. There would be nothing else to do but to remain in the vicinity of the city until the next morning. But in the meantine the telegraph lises and railways would have -hanged the relative strength of the two sides in fator of the detenders.

Ifter ascertaining the condition on the following reorning the cavalry will have to come to another decision. What will they now do?

- Penetrate atill further among the garrisons of the enemg. perhapm swim a river, abandoning their guns and trains in order to carry greater uneasiness and confusion into the enemy's country? This can be done, but at what cost? The enemy being constantly in formed, in possession of the telegraph and railway lines. will not fail by well combined movenents of hin tromps, to heige the cavalry in and cut off their retreat. Their dentruction isevident. What real and effective injury could the caralry accomplish? They can frighten old grannies of both sexes; they can cut down individuals they can capture a countryman here and there who has an idea of obeying the call to the cwhors. But they will not reach many such poople for it is itopossible to determine why a peasant is trarelling along the highway, and no one is going to be an intormer. The most of the serciceable men will conceal themselves and the caralry cannot delay longenough to make a thorough search of the country.

The rajivagi and telegraph lines can be destroged. yon will probably insy. Yory true, but we need no mases. of eavalry for that. Since the discofrery of dynamite. determined. dexteroms patrols, not exceding from four to twelve men. that can conceal themselves in the timber during the day and make forced marcher by night, can accomplish this work just as thoroughly and can conceal themselves much more easily.

Perhaps villages might be burned, districts of country laid waste. and the harvest destroyed. But I am speaking of a war in civilized Earope.

The entire result would be that a few battalions of the enemys army would suffer the loss of a few men in their effective strength. and for such a purpose we should not risk the loss of ain entire casalry division. Therefore. the extending of raids heyond one days forced march is forbididen in all concere cases, and especially docs an isolated raid at the ohtbreak of the war seem entirely and utterly inexcusable whed the border is formed by a natural barrier which has but a few crossings. for example: the Prrenees: the Alps between France and Italy; the Danube between Roumania and Bulgaria, and the Channel between England and France.
, At the close of the first day of the raid there would be nothing left for the cavalry to do but to remain in possession of the district which they had occupied on that day and to push forward their scouts and amall parties to a greater distance. There the operation coases to be a raid and it is then nothing more than the throwing forward of the cavalry divisions in front of the army in the samu manner that our comnianders did during the war of 18i0-71. The
question may be anked whether it is useful to push the cavalry forward into the enemy country in this manner hefore we are in condition to follow it with the arms. and thos insure it the necesaary support. I think not, for we will enter this field later in making our main attack, and we have betrayed our intentions too aoon by the advance of the caralry mass, and. if' it is not our intention to attempt anything serious in that direction. why then the caralry will be very much needed elsewhere.

The final result of my consideration is therefore that the undertaking of such raids for the purpese of disturbing the mobilization of the enemy is not to be encouraged. but that it in more adrisable to complete the regular mobilization of the cavalry before any great enterprises are undertaken by it, and meanwhile to reconnnitre and disturb the enemy by small detachments until the entire army is in condition to begin decisive offensive operations: then is the moment to pusti the cavalry masses to the fromt in the manner in which it was done in $1 \times 7 \mathrm{l}$. becallse it call then find support in the army coming up in its rear

The increased efficiency in the use of fire-arins in the cavalry does not alter anything in this result. A caralry division cannot put many more dismonnted combatants into action than an infantry battalion. and they are always interior to the infantry in the use of their fire-arms and in instraction. As for the instraction of the ravalry in surmounting obstacles. for example in bridging. I read in a newspaper a short time ago how Thans. with unprepared material. threw a bridge arosos the Oder and crosed over it, but such material is not always at hand; the cavalry cannot find time for anple instruction, in pioneer and pontonier dutien unlews they neglect their instruction an troopers and thus heoome bad eavalry. In the caralry course of instruction the hours of each day have their nerecitied daties, and this course should not be disturbed withont mature consideration. The cavalry will never succeed in "rowsing their guns and wagons upmb bridges of their own laying, and as we have said before, they cannot dispense with theme if they are to act independently for any length of time

Hereafter. as soon as the cavalry has completed its mobilization. after declaration of war. it will be its duty to make a long and rapid march - not exceeding one or two days-into the enemy's country. in larger or amaller masses, and to push out patrols and scouta an far as possible for the purpose of observing the enemy and for protecting and veiling its own army. something in the same manner that our caralry did during the latter part of the campaign of 1970 .
 fO (ONTENI

## ei.eventil l.etter.

WIES we copnsider more clovely the demamh which are made and which must necossarily be made on the cavaly under new discoveries and modern conditions. the tronblemme doubt comeup whether sucp servides are possible, and espectially is this the case when we eompare them with the normat conditions of the past. Formerly, before Wraviel. in the year 1843. gave the first impulat (o) a greater mobility of the cavalry. the extent of an attack. including the walk, trot and gallop was ion gards. Now it is desirable that the cavalry pass over from fione to tive miles at rapid gats ( trod and gallop) and still be in gron condition to make an attack.

Formerly a hatreh of eighteen and twenty miles in one day war considered a healy duty for the catratry, while we now repuire them to be prepared to margh from thirty to thirty-five miles a daty for two or three daydin succession, and occasionally cases arise in which special cavalry dotachments must mareh much greater distances in one day -.-for instaned : the dragoons of the Guard on the 30th of June. 18tit; the 1 an Ilans selected from the Thuringian Clan Regiment No. 6 (which marched about (i5 miles on the 15th of Jaly, 1sisis): alou Stoabt's capalry, which marched fifty-five miles in one day.

In former times the cavalry patrols did not extend their excursions two milen beyond the intantry outponts. We now see officers patrols pass oven from ninety to one hundred miles in a single day.

In former times it was held as a rule that smatharms fire was only emploged by the qavalry as a sigual. I remember the adage - The infantryman who is shot by a cuvalryman ought to be a he liever in predestination." We now require the cavalry to be thoroughly instructel in fighting on foot, and history mives us numeroucages in late waps in which dismounted eacalrymen have not only defended villages, but where they have uctably taken them.

When I picture to myself the appearance that a squadron womb have made forty years ago if it bad determined, as a novelty. to crose ditehes or barriers aud compare it with the present exercisen of our recruite preparatory to the drill in open order. in which they are divided inth opposing parties and drive one another acronditches and barrjers, expeuting the ..jeu-de-rose, etc.." I feel that I am looking upon an entirely different army from that of former years.

The ditioremer i- so ereat, that when I asked once of our ohdest amillu-a cavalrymen, when he was inspecting a spadron with which her seemed wedl satisied. What he world have satid if. when he was a lientenatht his -uperion had asked for the exerefise that he had demanded that day. be lathghingly ancwered that they womblase shat him uf in a madhouse immediately.
 of it. It requires more than mere zatal athl work. Oreresertion in instrution relases the torese of the officers amil men betio mentally atml phrsimally atal breaks down the homes. It will mot help the matter ly siving more forage. Becane a worn-out hore will mot eat. I one rame arose a suadron commander who was instracting his command. in detail. for the first time. and his geal was so great that he spent the whole winter in the stable ant brought on a serions illness. The result did not correspond with the exertion. The men. as well an himself. gate the impression of over fatigue. The horses were reducel, thin and weake and anequal to so much exertion. Ho learmed a lesson from this tailare and having improved in the rontine of later years he rendered prominent services with the same squadron.

The horse is an animal with an intelligence and will of his own. S; a colt. he is awkwad and unwieldy and must first learn to rin and to carry: lie must be taught to whey the will of the rider unonditionaily. without injuring his lones in doing ws, and his etrength amd suppheres mast be increased. We know low many vats of staly and pereonal cate and exertion are neressary to tit an otticer for properly braking the remonnts. After having -ucreeded. by all his care and knowledge. in making the horse obey the rider without hexitation. he finds at the end int all his instruction. that, through tom much traininge the natural gait of the horse hat been injured. ar through placing too much importance upen the course of training he has omitted strengthening the horsed wind until it is teo late. Or on the contary the gait and the wind are rarefully serored and fostered. but the horse is unt sutficiently subfugated and mantains his own will in opposition to that of his rider whell he is out alone and it becomes necessary to overcome obstaches. Fothing is harder than to keep within the right limits for turbering the traninge eduration and condition of the borse. It may be clatmed that every equestrian performer anderstands
 wer the demande on a rearalry horse.

It the same time the squadron ehief must instmat his inen prop-
erly. He must not only instruet them in becominer somed oddiem an does the company chief of the infantry in the dexterou- ure of their weapons, and exert himelf in making sure riders of them. hut he should instruct them in shoting and tighting on fore as the intantry do. and, although all that is demanded of the infantry maty not be required of the covalry yet the cavaley should learn to take fill all vantage of the aqcidents of the ground when tightins on tinet. "Im" the defensive.

It can thus be seen how freatly the demands on the intelligene.e of the cavalryman have increased since the recomoniterine and ont post services have tallen entirely to that arm. Whenewe the army is in motion. The amount of care which is demanded of the whicer th so educate the soldier that he is. when mounted. still comporent and his thoughts sufticiently clear to enable him to make. at ally mu. ment, an intelligent report of the military situation about him. only he who knows the mental condition of the recruit when he conac to the troop can appreciate.

With the increase in the duties of the ravalry in thin arrice the requirements in qquitation of both horse and rider have increased There were times when mquadrons cond only detach certain horseon patrol duty, because the great boly of the horses, being aterons tomed to move in a mass. wobld not leave the manks alone. Now. each horse must be trained to more out. arross the termill alome. and when two or three horses are found in at squadron that caln nul be taught to leave the ranks, the littmeister. who is roponsible. will have to answer tior it.

The Sisyphus-like work of a company chief is already great. hut that of a squadron chief is very much more trying.

The demands upon his mental and physical facultio.- are mulh greater. In the long ride which takew away his breath, and while. he and his horse are dripping with wweat, he must, it the ecollese of the gallop both in exereise and in artion. keop clowe wateh upon the course of events. holding the enemy and his wron oundron evilally. under obervation. giving the proper commands at exactly the proper time, and ordering the proper signals. He has not time fior consid eration. for in there cases it is a matter of secomis. Whio hat- mot ofen seen at drill that the flank mqualron was mot led with such exactnese that it "struck" the enemy at the same instant that the frontal attack fell upon him. and how tenaciously they held the officer concerned responsible therefor? He may hase had the reasonable excuse that the dust lasd caused him to misju!lye the posi tion of the enemy or of bur 'own squalrons. and after mavins for-

 his whole sumatron eithor acrose the fromt of our attacking satal.

 lut apperiate the ditionty in the execution "f it. wrine his hands



 mony ermpans'

 This arnew trom the tad that the inatruetion of his spuatron has


 and care in bringing them into life and in matins them. whe the ghatron dinf devens mone lowe and care to the bersex that are re
 tracted with hese tumble. Bewides. bee horee remains with the
 and that the horwe are the hasio. and when the ehief speatos of $\cdot$ h his "guadren" it is the horem that take the tirst phace in his thoughts.
buring the greater part in the seat the eare and raining of these animals have been the chiet objeet of his attentions. He has taken -ate that the exetable lomata was genty handled by her rider. that Tamered was mot ridhell with a heaty bridle hamd. that the hoofs of Belinat to wot hecome tow had that Gmariw vimews are developed and
 But finally he must mse his sumblron in connection with the regiment. brigate or division. in manenvers or in war. Then he shonld ant withont reratil to the condition of his tavorites. and only con-
 ation demants it. he mast emplog the whole of it regardlens of what may atterwari- berome of Donma. Tancted. Belisar, Omar and sultan. Hi, only ansiety is as to whether the propitious moment hais come tor him to lead this spuadron. the product of tell years wark intu die ememys tire. Gare roncerning his own life may not disturb him in seizine the risht moment. hut he thinks of his favor.
 mubt (reeps into his mind and elouds the clearness of his judgment.

How then. whispers thin shont. if this should prowe ind to be the opportune moment, might I not accomplish more by mancurorine. by demonstrations, by yielding betore the enemy and thas presers ing this costly material to the army? Many a spell. many an inde. cision of a cavalry leader who tailed to arail himself of the opportune moment, is attributable to this fecling. and not in any way w the feeling of self-preservation which no German otticer permit. ${ }^{\text {w }}$ be called in quextion. The squadron dhef must wake oft mang very many of the cares renting upon him if he wontal really. uf"יl well-grounded tactical tasons, seize the right moment tie hivattan-l
He must be in some wheh eondition of mind as was my triend 13 —— upon an occasion when, after giving the order bone of hi, -ghat rons to charge the enemy in fank. he alsamed th the attacis in front, rather irreverently shoating: . Now tor the (harge- Heawer or Hell! Lower lances!! Galiop! Forward! Hurah:

Greater yet, but of a somewhat different charactere are the diti culties which present themselves to the minds of the higher cavalry lealers. A squadron chief can still exert some influence here an! there during action, eorrect misunderstandings. and do something personally. But in a great mass. esen in a division. that is mot possible. The commander of a cavalry division "ath exert mo further influence through his adintants ather the mass is once in motion atter the demon is once unchained. He shonhly seize the moment. he should issue short and distinct orders at the proper instant. hat when the mass is in full galipp his intluence is grone. He seres how his orders have been misunderstood loere. how an intorseen olstade appears there, a disturbing measure of the enemy maken a change dhe. sirable yonder, but he can do mothing. With a beating hoart and a gnawing care he must leave all in the hands of his suburdinater athl trist that they will do the right thing of their own motion. alme must let events determipe whether victory of deteat is to be the re. sult of his dispositions.

How much more confortable is it with the commantere of all infantry division. He can always seme promptly to a single hattabion or evell to a company. when he observes that his order or the du. sired disposition has not been understond and accomplishend. This the commander of a cavalry division can un longer ily. It hin ofolde are not clear and are not imparted with distinctness and brevity there is no opportunity to elucidate them by anplement

The commander of a great cavalry mass must unite so many prominent characteristies in his person that ally one to whom this has beenme patent can mo lnger womder that men like Sisidlt\% have
been rate. Do not grant. however, that on that acoount we mat relinquish the useful cooperation of the cavalry. but we must lue content with such cavalry leaders as we can obtain, and who. although mot equal to all the requirements of their specialty. are still in a meanure fitted to aceomplish the tasks of their arm of the service.

In like mannev as the cavalry leader has much greater diffi -alty in leading hiv troop as he wishes than an infantry commander. a also is he expened to much greater dangers. I do not speak of danger th his persoln. for there is no danger in being left on the field if honor. in surremdering his life for King and Fatherland. That is the greatest good tortune that comes to a leader. But I speak of the dangev th his hotor and reputation. I misumberstoert orler. a wrong reading of a trumpet signal can ruin him in his profession.

Gemeral Trondi deseribed, almost twenty rears ago in Les Paniques. whicla made such a selosation in its day, how the bravest trougs can be seized with a panic under some circumstances. and he must have witnessed what he there dencribes of the caralry. He paints with uncarnished truth the chaos into which very good cavalry can be thrown by a rery trifling misunderstanding.

Whoever read- this chapter. will sympathize with an infortunate avalry leader. who has riden forward with the leading squadron. which is acting as at advanced suarel. while the main buty is following through a womed mountain detile. He has henaght forwart the horse hatery at a mapid gat and it has unlimbered on an elevated -ite at the opening of the defile. The moise mathe in elowing the limber ehests is mistaken by the aratry whe are down in the narrow detile below, and t., the rear for six infantry shots. They telieve that this intantry fire in in their immediate ridinity, against which they are kefenseless in that narrow detile. In addition, seouts that have been detached from the advanced suard and sent to the village further to the front. report it free of any enemy. and the hattery in acoordance with regulations, fiver the rignal. "rease firing." The echo repeats this bugle signal three timers and it is mistaken by the caralry, marching in the narrow defile, for the signal. "risht almot." The belief in the perilousness of their situation is trengthened by another closing of the limberchents, which again counds like infantry whots down in the narrow denle. Finally the ignal "trot" of the battery which is following the advanced guard "flatron, is now heard and the whole main body of the cavalry puts itself in motion to the rear at a trot and quits the supposed dangerous detile. As soon as the retreating caralry has reached the plain the ofticer second in command has the signal given to form "nguad-
ron tront," and signals the gallop as the gait to be need in the movement. Part of the conmand heard the tirst yigmal and a part onts the sigual - gallop." "Thus all gallop off athe think that the dathero is so great that only the most rapid gatis call sare the tromp. Xin call is heard, no officer van overtake the Heetur troops for her cambor gallop, faster than the 中ell trained troopers. Sin molls the man-mang. milen to the rear betoret an enemy which does wot exist.

The commander of the whole halts on the height in fionut. Bem coming impatient because the main borly does mot come ui be lawh, about him; over the wooled mountain slope away yonder in the valley he sees his cavaly, in full career to the rear. Ife wrins- his hands in lespair. but he is helpleses: he iv low dintallt alld her io isu... rant of the cause of all this.

We can imagine how the commander of a cavalry mase. Whon the cavalry is to act as reserve in the approachins attark, will in person lianten to the hed of the intintry column when the fight is begimning in order to sete where he can hring assistance. He leavest instructions for his cavalry to trot past the intantry in placees where it can dos so without disturbing its mareh. That is done. An unoceupied side road seeme to offer a fine opportunity to hasten the march of the eavalry. But this side wad tinally leads to an entirely different phace. The eqtire catalry mass rides away atd when the commander sends tior it in order to leal it to the attack. it is nowhere to be finnd. The caralry timally reacher a print where it hal expected io find its commamber. but not timding him it hatts and waits for oedere until the battle is over. An unfortumate step ot his horse. which sw lames him that he is unable to travel. is conough to prevent him from rejoining his commanl with which his other horse has gone: or it isomly necessury that an adjutant shombluse. through an oversight. . right ${ }^{\circ}$ insteal of ..lett." to fix the stigma ot incompetence in action upon the commander. His reputation. the contidence of the troips in him are gone and he can hever regatin them.

I could intenduce mang other examples. which like the above are no productions of the imagimation. I will let the subjert rest bere un I only wished to stow ou what a slender thread hamges that which is most sacred to a caralryman-his honor.

We will return. as promised to consider how very important the services of patrols condurted be offeers have hewome in moder" wartare; how army commanders fouml their resolves and make their dispomitious upon their meports, and theretore how necessary it is that even very yonng officers shall have sufficient knowledge of tactical and strategical conditions to enable them to make homonghly:
reliathe reports. knowing what whould be reported amd what is unnecessary, sifting the important from the unimportant. When we ronsider how the roung officer must atudy even when tired from rillinge drilling and other dities in the trop; how he makes trying -xercise rides during the recesses in the course of instruction ; how he in the winter ewhings extends his horizon by $\cdot \mathrm{kriegepiel}$ " and be realing scientitic work, then it will be appreciated how dearly he pays for the vanity of belonging to a mounted arm - he pays for it in a never ceasinf activity from early morning until late at night. rear int year sut.

It appear that the long treing marches on hometack are mach
 i- hath with matly ottionise in the first gears of their serviee while they are still liemtemats. for chronie divedsew. through the constant motion of the bowels the spinal cohmman and the cobsulsive move. ments of the bedy on hong and hatd rides.

Finally we mast mention the sacritices in money that the cavalry otticer makes as long as he is in the service. He should always be a) mounted as to be able to accomplish more than the mont it is true that many measures bave been taken with us in the last decado which lighten the satritices the officer must make from his private purve tion whicl they are very thankfinl. They are siven the mont relect horses and all otticer who has mo mistortune with his horses "all mantain himself mounted in that way, whike one who is unfortumate recoives a grathity or a reliet horse. But every cavalryman know- that thin seldom eovers the mutay, and the prices of horses are cery high. Bach borse represents quite a sum of moner. The state grame be assintance in cases where the mintiothne is the lanlt of the otherer himself: How is it possible tor a soung officer to rain at once such knowledge of horses and of riding as will enable. him th aroid misfortunes that are the natural resalts of his own baults. and should a voung otficer be under the necessity of taking into consideration before cach spring acrose a ditch or over a hedge the powibility of his being held rerponsible tor the laming of his home? sudh a eourse would take away the mont valuable characterintic that ormaments the young caralry officer, viz: dash and daring. It may be accepted that there is no cavalry regiment in which an otherer can seree unlese he can spend tive handred dollars per annum out of his own pocket. This sam becomes less when he is adsanced to be a Rittmeister of the first class. but with age the requirements increase and he will have to serve about twenty years before his pay will cover his expenses. It may be calculated that a cavalry
officer sacritices ten thongand dollars to the tatherland duriner hiterm of service.

Upon principle I am tar from desirimes. that on atronmt of thi, sacritice in money. a more rapid promotion should be provided. That would shake the corner stone upon which the efticiency of our officers corps rests. If. however, a branch of the service whirla mecessitaten such a sacritice of mones, is so conditioned that the wervice is more wearing upon the physical torces, and absorles thell prematturely, and thus creates in it a more rapid adrancement. it -hopuld be accorded very willingly.

MARCHNG AND CAMPING CNYALHY AND ('ARING FOR HORNES IN THE FIELD.

II'Y first experience in catalry marehing was under an otficor who marehed showly. He would ride for an houre then he would diomount and had for about twonty or thity mintites taking all day to make twenty-tive miles. When we timally reached the end of the long day's mareh there was a tiresome delay. and the men hinnged on their horses while he was looking for a place to camp.

Another ofticer under whom I serred would march at a grod. fuick walk. making twenty-five miles in six or six and one-half humes. He would hatt at reasonable intervals to allow men to obey the calls of nature and to water horses. When his days marel was coer he would fook over the ground without hatinge marely direetly th the place of hiv rhoice. form hiv tropos dismount and go into "amp. othen getting a better "amp than did the tirst oftioer.

These experiences oreurred in my early liti. In later yaurs I have often questioned meself as to which ot the two was the better asalry commander. and experience has told be it wa- the latter.

The tirst esential of afticient cavalry is that every man should the mounted on a good and servierabile hores. Each officer should have two good horses that cat watk tron four to tive miles in an lour and that have a smooth. spuare trot and gallop. Much of the - Heress and efticiency of a command will depend upon the mount of the eommanding officer. That ofticers temper, patience and clearhess of judgment will depend largely upon the gaits of his horse. I hadly gaited horse will either delay and pester a whole command ly a sow and shutting pace or will keep the command all day at a sait between a jog trot and a spurious lope. As a result, men and lurses will be worn out tos, soon and many backs will he ruined.

Let us nuppose that we have a march of ninety day or more leffore us. The horses should not he disturbed between retreat and -unrise. At sunrise they should be fed and gromed: just before commencing the march they should be watered. On the marel
every man should be required to keep in ramks athe cach organiza tion should be closed to its proper distance. Forty or titty minute after moving out, the column should be hated fior ten or tifteen min utes, to allow the men to attend to the calls of aature to aljust equipments. etc. The conmand should then move on at a gowet walk for an hour and a half before haltins again. At the setoml hatt each man should loosen his girth ame examine his horse s batk When the saddle is put on again it should be moved about one imeh th the rear of where it was first placed. At the next halt, after a tide of an hour and a half or two hours. the homese backs shoula be examined again and the saddles prot back where they were in the morning, and wo on throughont the hay.

When the horses are madided in camp exery man shand arare tilly examine his horse's back ly rubbing hi- hathl wer it. It ang lumpes or hard places are thand they should be rubhed with the hatmil until they have disappeared. The horse should be athowed to moll it he will. as soon as the sapldle is takell oft.

Horsen should be watered at least three times a day when ponsible to doso-morning, nbon and towardsevening. Thee should be ted in the morning and afternoon if forage can be obtained. . Athe public domain is now nearly all taken mpand fenced. grazins can no longer be depemed upon for the subsistence of our wavalis homes. But when grass is to he had homes should be given all pur sible nse of it in adhition to their feed.

An ordimary days mated of twenty to twenty tive miles shoubl be made quickly at a foom walk of four and one hatr to tive milein an hour it order to get the saldles oft ats noom as possible and let the horses rest and graze. Men should be male to thoroughly un derstand betore they commener the mareh that any one who makes his horwes back sore will have to walk and leal until it gets well. A man should never be mate to walk and lead his borse as a puninhment, as it takes a guard of two or three men to look atter him. keeping them in their saldles moch longer than the command Moses, in his marel of fort yeurs. discovered that a rest on every noventh day was necessary for man and beast. The latter probably receives the greater bencfit from it. and unless active operation prevent, the same rule slathd be observed in a cavalry command.

The foregsing relates teif the orlinary route mareh. It is difterent when we start out on a long and trying expedition with tighting in view and mast begin with a forced march. Suppose it is neces. sary to reach a point $1 \geq 0$ miles distant in thirty-six hours with com mand in good comdition for a fight or tor further marching. Such a
march must be comducted with great care Only necessary hatin ran be made, and to prevent the men from getting fow tired they should be made to dismount oceasiomally and lead fire ten or tifleen minutes. The march is commenced at noon and contimed up tomid. night. Sixty miles have now been made and we hase sixty more to make. The mareh is taken up ugain the mext morning atter sumine and continued until we tind ourselver at our dentimation. This dumbld be betore midnight and we then will have at leat six home rast before we commence the work before as. Which shathe thenceforth become lighter
tireat care shoud he taken mot to witent the mur her beyome
 Hodr work eherfully but atter midnight the botli hectome very tired and sereps. Night work tell. strongly on them. Atter a mareh trom early morning until mear midnight camp shond be mate the horses fed. and all allowed to rest undisturlued until the sull is well "!. The horser should then be fed. and within an hour and a halt afterward the march can be takell up arain. This can le kept "p tien several days without serious injury th the store: but when the marehe are extended beromd midnight. or commenced too early in the mominge stock wom breaks down. A horse se time for rest is in the morning. Horses properly hamdled will stand up to hand and lons riden tior mang days. while nesplect or arelesoness in marehine
 worage the men. An officer will often make a lomer mareh tow
 whee ot his experdition.

 - menct up to ahout 11 oclook at nisht than at ally other time.
 -hould g." ahead to select the ground. and he there to perint out the place selected on that the troops can gro into catill withont delay liround that is dry and near water shond when practiable be
 rially it the command is obliged to lopend on the country. During abive operations. ground for a camp siond low selected with a view tw sately from timber, hilks, ravinco or and wher whient that may atford raver to ath enemy. When an antive enemy is in front. a lifficult stream should not be crossed at the end of al days mareh. Under any other circumstancer the stream somald heprossed before
camping. for fear it should tive during the nisht and sive trouble in crossing.

Horses should be fed and watered with regularity. Every otticer should give strict attention to these subjectes and wee that they are never neglected or slighted. He should see that the hornew are properly shod and their feed kept in a good healthy condition: that their saddles fit their backs $\}$ that their blankets are kept elean and are properly pat on; and that they are not abowed by their riders. The cincha straps should he of thin. soft leather, and put but twice through the girth ring. The saddle should not be girthed tight on the march. The bridle should be fitted to the head-the hit comines up so as to gently touch hut not draw up the month. The lowt means of insuring the proper care of horses is to encourage in rach man a love for his horse. This catn be done in garrism by allowing the men to choose among unassigned horses. and, with the troop, commander's approval, to exchange horves till each gets as far as practicable the mount that best suitn him. To the same end men should be allowed to use their borses freely when off duty. It should be understood by all khat if any man ubuses his horse he will not be allowed to use him again except when on duty. Should one man abuse his horse however. the privilege should not be denied to others on that account. Alvo. no one shoulal use a borse that has been assigned to a soldier. without the manis permiswion. I request from an officer for the use of a mans horse creates in the man a pride of ownership, and is sure to be granted it the owner knows that his horse will be well treaten. Honse racing wo a limited ex. tent shaula be comourared.
R. F. BFERNARD,

Mrijor Eighth Cirulry, Breret Colonel, I: S. A.

## DISCCSSIOS.

Captain A. E. Woon, Fourth Cavalry:
The duties of the moderncavalryman embrace all those ot tormer times and many more in addition. To emable him to perferm these varied duties during a campaign, he and his horse must undergo more constant fatigue than formerly, and as the cuvalryman is ut terly aseless without his liorse, it follows that he mast understand the wants, ordinary diseases and capabilities of the animal. and how to work him and take care of him to the best adrantage under all circumstances: He must continually nurse his horse.

That the hame may be ababled to make marelnes, day atter day. during a campaign. he must be shom tirst of all, as ith every theater of operations. samd gravel and rooks alway- comstitute a percentage of the soil to be passed over: these will wear the homf. if not protected be a shoe. so rapilly that his usefuthess will som be destruyed.
 -utife life: this in true but there are many reasolne fire it. Only two of them wed be enumerated: the cow-pons in selilom ured. durine the round-up he is uacel alout oble diy in six and at other ctimes of the year he is ridfen probathly one weok in two or three months. He is worth alomethirty dollars and is manally so wild athl
 him the shere hate he is worth. It will be lowieed that a ramehman will gemerally have a superior perny shod.

Exery cavalry ofticer whe has had experitnce in following a
 seond days mareh. he gasser potice dropled on the trat for fint. sweners. and about the fourth day these ahandoned ponies hare raw. hide moccasins on their feet - put on tor late th save them.

Experience teathes u- that a horse must be shot, if required to Wh much steady marehinge Fiery trow commander should have scoral of his men atficiently instrncted in borseshocing to enable them to tack ou at shoe atsi whe of these men should be included in wery patmol in deta-liment suth from his tronp.

An instance of thi weresity oceured in my own experience. In
 thintyeren horses in my command and fifty-two whes were cast during the first twenty four home on the tait. Tho groumd wan of such a mush amb rocky nature that these abos hat to be replaced immerliately ather they were east it mot the neefulaes of the horse would hate been hert in two homs.

So much depends "funt the proper alluatment of the madile and cumalization of the weight which the home hat to carry. in order w conomize the strength of the animal. that we might clasmify andding as one of the military arts. It is ath art that ean be learned by experience only. Theory call simply give the proper direction to effort. One rule only, need the observed. viz: let the center of Weight rest over the center of motion. Experionce alone can teach the proper application of this rule. The tranmismion of this weight to the hurses back. mosi be through media sutionently son and pliable to avaid briving or irritatins the fleoh. The prewent regn-
lation saddle blamket does not fultill this condition-there is mo. enough of it.

But since the soldier must always have at least one bed-hlanket with him. experience dictates that if this hanket is properly tolded and placed on top of the saddle-blanket. the comdition is fultilled and the bark canmot be made sore by the pounding of the weight al any gait. I have followed his rustom for twelve vears. with all kinhls of riders from the revrnit to the veteram and on expedition. when all the gats were netessatily elmploget ath in that time haw never mathe a sore hatek.




 seouts. pratrols and their supports. This is the duty that mont pie. the powers of the horse.
 a day, is regulated about the same an that for a large command. In making such a march it is better not to move on foot at all. male... the country be mountainons. Take off the bridles during the haltand let the borses graze if there be any grass at all. It not. het the looses stand and rest and let the men lie down it dhey wish. Sis distance is gatimed or time suved by walking. The horses , do not reat and the men are not tired eqough vet to get rent hy walkinge.

In a march of torty miles a dar the tirst twenty or twenty-tive miles aremarched as usualf If after marehing twenty or wentyfive miles water and srase can he had. hatt and unsadde for an hour. leaving on the fanket and sureingle for a few minutes. Lat the conok get dinner whilst the men water the horses and turn them om to grass. either sidelined and toose herden on lariatted. It the end of the hour. eatch up the horsers. water them. hrush off their batkthoroughly aml valdle theu. . Ifter marching at a walk fin forty. tive minutes. hatt and let the men under the dirett supervision ot titae chiefs of squads caretully examine the saddles and blankets to see that they are property adjuated, then mount and mowe at at wix mile. trot for an bour. divmonnt and walk for ten minutes. then halt. examize the squdles and blatikets as before then mont and resume. the trot. The detarlment keeping up this routine. will be able t." cover forty miles a day. with but very litele fatigut. in nine or tell hours.
 twetve hours. the pregramme wollh he alwit an tollows:

Mareh the fira hour from amp at a walk. make a hath of titeen minutes, umbridle the hurses and let thell graze. Aljus the sathles




 and walking tor ten minttev matil the and of the mareh The
 weed the walking in oreler to rest he murlin whel hate beron fenmating the saddle tior tha part hour.
 see (w) it that the saddes and hanket-are properly admeted. an the - horee motion." When there is me weight in the saddle is liathe to di-phare them.
 average eavalry home will brek dow hefore comering thin distance at a sallop.

A nighti, rent atter = ach a mareth, should restore every man and hore whic normal condition.


 rain until midnight. The homs hat forage amel hith howers and men were cepued th the storm while it latiol. The mext morning the men were chertulatal the horoe were apparely an treoh as they were at the leximing of the mareh the day lextore.

There is no doubt that the matreh conleb have been repuated the
 they marehed thirty mile- and when turned oult to fraze. amo of them played as they usatly do when erazing at the farmorn.
 from Fort Reno. Indian Territory. to Arkansan City. Kanaas. via Skeleton Ramel. a distance ot one homdrol and forty miles as the road then went. We started at ten rieloek i. W. and at tive odock 1. m.. the nest day, the mareh was acompleted. The horse showed fatigue. but none of them were injurad. Herves ware unsaddled
 at the end of seventy-fise miles. and also at the end of one hundred and twenty miles.

A dequelament marchins over a mountainous country. shombine divider ímoto atuads, not to exced twenty men cach. Eath squad should be under the command of a non-rommissionerd ofticer. laaving an interval of about terenty-five yards between the rear of one squad and the head of the succeeding one.

The advantages are that when an advance suan comes to a hill where it has to dismount and walk. the tailing out. which invariably oreurs when horses are leth. does not interfere with the mareh ot the suceeding spluad and when the hill has been passod, the head of the squat column does not have to wat so long for the rear to cloce up lnefore mounting. The men are kept better in hathl the horse- sutfer less fatigue, and if the detachment is ambushed by an enems. only a shall portion of it receiven the tirst attack and the rest cath be maneurered as in any other action which has heen anticipated.

The duties of a detachment generally are of such a mature that it cannot tracel upon the main roads. and as freduent obinateles and narrow ways are to be paped when marching oti a road, the colum" of twos is the habitual column of route. In a momentamons and broken country it is generally necessary to mareh in columnof file.

This description of how to corer long distances by forced marches may have to be moditied in particutar cases. hat if tollowed in weth cral outline a detachment will always keep its horses in grow form and they will alway be pealy for a sreat eftort. It they are mor. the canse cau be traced tolsomething besides havd matehiner.

If a horse is accustomed to marching. he can walk athot titi! miles between sumrise and sunset in the long June and July dats. Wh a road or smooth prairie he can average about tour miles an hour. if not considerably fatigued.

In 1873 Troop l. Fourth Cavalry, after having been marehell more or less every day for a month, was marched over a meanmeal distance of twenty mikes The average was fone and a platerer miles an hour. inclusive of halts. The horsen were from Missomi and Kansan. Erery horse took a flat-fonted walk. The conditionwere unusually favorable: There were no ponies in the command - no such hybrids as ane furnished, under the name of cavalry horses. on our Pacitic. Slople.

It is frequently asserted that many horses can walk tive milean hour, but a clowe analy ${ }^{\text {gis }}$ of this mater will diselone the fact that about one honse in one thundred thonsand cath walk five miles an honr, and about one horke in twenty thonsand can walk four and a half miles an hour. Sople of us may lise to sece one or two of the
latter: hut we will all prohalily be retired for age helore we are obe of the former

The commandinse otticer of adetachment on a toread mareh munt alway, be on the alert athe as the men and horsen get more weary bis vigitance must incrave: The men must be required to sit upright in the saldle, comstathty kerping the twath of the homes mouth with the bit, fir an the animal ects fatisued he is very liable to stumble, and the riber must he really to suntain him. An unaided effort to perover from a stumble tatigues a horse as much as it does to trot hatle a mile.

When a commandinse onticer enets a little weary or settled in the saldle, he is resy liable to neglect the hates. This shombld never be done. A lagy or catreless man has no busimess in the cavalry.

A detachment commamber shotd always be able to satistactorily answer these questions: What would I do with this command if I were attacked this moment? What would I dowith this command if I should see the ememy. wher yomder or on that hill?

As seon as he is in the sadtle a true cavalryman stratin becomes pregnant with ide:ts.

It takes comstant care, rionstant thought and mintermitent conery to properly furtiont the duties of a modern eavalryman in the tield.

First Lientenant Elun F. Whacos, sixth Cavalry:
I question the alvisability of the rule latid duwn by Colonel Bersard, that cach orgatization should be closed to its proper distance on the march. This method of marching is sometimes a source of great diseomtort and irritability anong offleers and men, expecially - in a dusty country where it the column is kept clused; men and horses breathe soil insteal of pure air, the eges are blimed and torture to man and horse is the result; the leadiog troop is the only one which moves in comfort. I once made a mareh across the Sall Simon Valley in Arizona with nine troops: fity yards interval was allowed between troops, and the gait was a walke trot, and gallop. In crosing this adobe flat the cloud of dust that enveloped the cohmm, even at this interval, was dense, and almont unbearable. No one could see ten paces in front of him, and the consequence was a constant jamming and falling back, one troop almost riditig orer its predecessor.

The halt forty minutes after the start is most essential, but I do not believe in loosening cinchas, or moving the saddle to the rear.

The saddle has one exact place on the horsere back, the owals of the pommel pieces should be in the hollows of the withers, where they belong, and should remaill there as long as the horse is sadiled. After a forty or fifty minutes' march the saddle works into its proper place, the cincha loosens, and the horse gannts a little: now if the saddle blanket is properly folded and without wrinkles. as it should be, let the whole pack remain and simply "tighten up." I have tried both methods and find 1 have fewer wore backs liy kepping the saddles as they are atter the tirst hatt; of course it a sadille slifes out of place it is necessary to adjust it. Dut my experience hats leal me to believe that the sadde should not be interfered with othere wise. Men are maturally careless, and in moving the heary pack the blanket is liable to become wrinkled. which causes a sore back, and the cold air striking the hot back of the horse under the blanket is liable to gall it: blankets should be left on the horses for twenty minutea after unsaddling, and before the horses are turned. out or picketed.

I have always considered it wrong to put a cavalry commanil on the road before suncise or before daylight. as is frequently done. Colonel Bernard's remarks on this point are most essential. and in fact it would be well if nuch points were fixed by an almont invariable regulation.

I once made a narch of seventy-five miles hetweren finur odock A. M. and six oclock p. m. on a hot trail, through very rough comatry. overhauling the enemy about sundown. The command had been out a month, and its excellent condition alone enathent it to do this. Colonel Bernard's remarks about the soldier coltivating a love fior his horse are most excellent, but in many of our garrisoms, the cavalryman is not given time or opportunity to do so: this is expecially true whore garrisons are commanded by officers of another arm.

## Major Guy V. Henky, Ninti: Cavalry, Brevet-Colonel, L'. A. A.

Colonel Branard does not touch on the manner of leaving camp. - which is important, and makes an agrecable or disagrevable send off for the day.

A short time ago I saw the following executed by a eavalry battalion: The horses being at the troop picket lines. . boots and saddles," was sounded, then "water call." then nach trow wamounted, ridden to water, and raterd. mointral. then returned to original camp ground, and remained mounted; the lite atterwards being formod, before the march tor the day was continued. Here
was at leant ten mimutes delay, with trooper on the lomes batek. which war unmecosary and this be a dack latation-an considered in the servier. The following shonld be the rule: . Water call" beins
 being driven mear camber fust hefore the hour fior watering." Ather
 caretilly rub off him horse's hatek. betore .. bowts and saddles" is manded. Gromines sombld be hene on the mard. only ill the
 and immediately .. forward." when each in sucersiont shobld break into coltum of tours or two in the direction of the line of march. On the marel the di-tance between eompanies shoulat be increaned. (6) avod the dust of those in fromt. It line is to be formed before having camp. (a wate of time and patience.) it shond be immediately atter the command is monnted. with no delay.

Eserything powible. consistent with diseipline and efticiency. Should be done. to make the mareli, campe and other duties agreable and wot the reveree as is generally the case. I have been camped in
 preserve symuetrical lines. when a tew yards to one side were grassy plots on the banks of attractive streams. as to make me desirous, in the tuture of making my camps face towards all points of the compasse it necessary to secure the much desired better camping ground, Which. when posible to obtain. will relieve the annoyances and tatigues of the worat marehes. The marching of a command in a proper manner. depents wo mach upon the gromi - homes-sense" of its commanding officer that the strictest rules should be latd down for the guidance of a marel, so that horses and men may not suffer trom the neglect of ignorance of any commander. Arriving in (annp eath troop should proced. without a moments delay. elirect to its camping sround, theor unsaddle, rub the backs dry, and allow the horses to roll, when not turned out tograze, - this latter I deem of sreat value, and each trooper should, for this purpose, lead his borse to nome gool ground free from gravel or cactus.

When hatting on the march. the rule should be to unbridle, and allust saddle. and when grazing is possible. to change direction to the right or left. just charing the original "olumn, but not to "clowe "u'" on it: head.

Foming line to the front is a wate of time and unnecessary eround gome wer. Line by wheeling by fours to the right or left acomplishes the purpose of clearing the original column of march and could easily be done at each halt.

It would be better that the commanding otticer should not have a fresh mount, for then he can torm an idea of the combition of the other horses; his horse should not be taking a good free walk while the tired ones in rear are trotting to keep up. Niot chough attention is paid to teaching the horse how to walk, or in shackening the grait at the head of a column over champes of ground to prevent trotting or galloping to 性one up."

The rules goverting marching. camping. and caring for howis in the tield, are most prolitic and valuable as upan the proper appli. cation of them our efficiency in war vepends. athl with so mathy diverse methods of action and opinions now governins. they shomid be introduced as "special directions" in our cavalry regnlations.

The gait shondenot be contined to the walk as now reppired. A slow trot of about ten minutes in every hour is often alvi. able, giving relief, us it does, by ite change of $\underline{\text { ghit. to loth mall atid }}$ horse. The conduct of the whole march should be so regulated ar to get into camp, or over the day's mareh as soon as pesible: coll. sistent with keeping the horse in good condition. Nuthine is wome than having a horse saddled for hours alld slowly dragging ont distances which with greater benefit could be covered in much le.. time. Leading for five or ten minntes in every hour shouhl be required.

## Second Lieutenant William H. Smith, Tenth Cavalry

Exception is taken to Major Bervari's rematrk that horse rubints to a limited extent should be encouraged - a high spirited homer. rum soveral times in races, will usually become a bolter or at hatat very hard to manage in charging. Besides it is difficult to see the hemetit arising from fat racing-it certainly does not make the men anyburthor riders. If, however, after the men and horses hatre becolne well instructed and conditioned, they be taken oecasiblatly tor a rich. across country, jumping fences (or hurdles prepared beforchand). and ditches, it will tend to give them buth confidence withuthat ing any injurious effect on the latter and it will certainly attord ar much amusement to the mon as racing.

When a horse is pushed to his utmost in the walk. such ats the average horse would be if made to walk tour and one-half milew per hour, it will become more fatiguing to both horse allil ridor than : trot of seven miles per hour - besides not more than three-fourths of the average cavalry horses can be made to walk finur and one-halt miles per hour, and when a troop is marched at that gat the rear of
the column is kept constantly on the jong. the loores walking a few steps and then closing up more or less rapidy at a trot. depending on the kind of roads and length of column.

The objections to using the trot an one of the regular gaits in route marches. urged by most officers, are. that it disarranges the equipment. necessitates a tighter girthing of the saddle to keep it in place and is productive of sore backs. If, however, the men have been taught to pack their saddles properly and to put them on the horses properly: it the horses have been trained in the riding achool to take a regular. even trot: if halts are made at proper intervals in order to allow the readjustment of saddes or blanketa which have slipped, it is believed that all these objections can be whiated. With rare exceptions all homes can sooll be trained to walk three and whe-half miles and to trot seven miles in an hour. Taking for granted that it is desirable to maintain an arerage paco of at least four and one-half miles in an hour on ordinary route marches, the following is suggested as a preterable routine for an ordinary march of twenty miles:

Reveille at good daylight - the cooks having been waked up at least fortyfive minutes eariier.

Immediately aiter Reveille the men fold their saddle blankets and pack their saddhes, which should take alwut tifteen minutes.

Brakiast.
Stables - the men grocoming their horses while feerding.
After this if tents are usel they should be struck and the wagons loaded, or mules packed.

Water call, followed by "Boots and Saddles."
March one hour at a walk, three and one-half milos.
Halt fifteen minutes.
March thirty minutes at a walk, one and three-guarters miles.
March thirty minutes at a trot, three and one-half miles.
Halt five minutes.
March thirtv ninutes at a walk, one and three-quarters miles.
March thirty minutes at a trot, three and one-half miles.
Dismount and lead out briskly for twenty minutes, accomplishing about one mile.

Halt for five minutes.
March forty-five minutes at a trot, five and one-quarter miles.
The march of twenty mite is thas made in four and a half hours.
Marches up to thirty milen can be made at the same rate. always halting for a few minutes after cach trot.

Dismounting and leading out briskly for a mido or an after the command has been marching for several hours, affords a variation and tends to rest both men and horses, but ahould not be resorted to too often.

- To show that riding at rapid gate does not heressarily disarrange the equipment after the men have been property inctucted.
 cavalry at Fort Verde, A. T.. was drilled two homrs per day with men fully armed and the suddes packed. On an arerage about one and a half hours of the drill were at the trot and gallop-the drill asually ending with the charge in line. During the first month of the drill considerable trouble was experiencel in sadilles getting out of place, blankets working out, or articles of equipment droppingr off. But by allowing men to fall out to realjust their saldensonly when necessary, and never permitting them to pick upan article of equipment. (charging the latter on the muster woll when lost ) the bothed of having men tall out from drill was soon obviated. Inuring the last months of the drills. a man falling out wats an expeedingly rare occurrence, not happening oftener than once a week, and the work ing boose of any article of equipment was equally rare. During all this time there was not a sore back in the tromp. In this troop the saddles were first put on in the proper phace under the supervision of the troop commander, and the croppers were adjusted so that the saddles could not get any farther forward and afterwards the men were not allowed to change the length of the cruppere withont permission.


## Major Adna R. Cuaffee, Niuth Cavalry:

We will all agree with Colonel Bernarb that the horse must have the bext of care at all times cluring the march. TRo-saddling at every hour or hatt is unnecessary it soldiers know how to saddle. If they do not know how, they have no business in the colnmn, of course. Saddles should be adjusted at the end of the tirst hour. and with proper care in saddling and good backs, will not need further adjustment during an ordinary march. More backs are made nore from re-saddling on the road than many areaware of. It is difficult for most men to saddle their horses when the saddles are packed. On the march saddles are or should be packed. Two men should adjust naddles on the road -one on each side of the horse.

In camp, saddles should be packed after the saddle is put on the horse. Ample time should be allowed for saddling. Twenty minutes is sufficient, but not too long. In this time men are able to saddle deliberately, carefully, and their packing will be well done. In this business haste is certain to make sore backs.

Unless expecially permitted, no soldier should ride his horse otherwise than at a walk and trot, and permission should not be
given any soldier to gallop. if his horse is not a thoroughly broken and wtealy troter in ranks. Fvery cavalryman should take espedial pains to ride well at the trot. both on account of the exer-- cise and becanse it is preeminently the "gait of maneuver" for cavalry. No tronp can be kept steady at a trot in ranks, if the men - are allowed to gallop their horses at will when off daty.

I do not agree with Colonel Bernapd an regards the gait to be employed on the march. I refer now to marching on roads, as scouting is a different matter. The march should be alternately at the walk and trot, and the average rate of seed never less than fise miles an hour. including halts. if the roal is fair. Two hundred and fifty yards a minute is a slow trot, and every caralry home is capable of doing this with case.

By using the walk and trot alternately. in equat proportion. the column will cover five miles and allow for ten minuter rest in the hour. Why fitigue horses with six hours of marching when they will do the distance ensily in two-thirds the time? We all know that it is very annoying to wait in camp two to three hours for the train to arrive. Few think that delaying on the road to keep in sight of the train works injuriously for men and horses, and this is perhaps the real reason for the never ending. fatiguing walk of our "avalry. The meth are unnecessarily fatigued. the horses kept from rest, alld ferding.

- As a general rule cavalry can mareh longer distancen than it is usually called upon to perform. To do so. it will, however, be necessary that troops be used to marching and that the marches themselves be property regulated as to halting places. chonges of purer. (italies mine and sutticiency of rations and forage.
-The marching power of cavalry can be taxed up to about twentyeeight miles per day on an average without impairing the etticiency of the horses.

Most of our otficer- are acquainted with we whe from which I have quoted the two paragraphis above but for the benefit of any who have not reat the book. I devire to briefly atate the performance of the First Cavalry Division on July 31, 18io, in support of the two paragrapha I have siven from the work. The division was compored of thrie brigades and two batteries horse artillers. Two brigades and one battery formed the principal oolumn; the other brigade and battery taking a nearly parallel road. The main column left ita campat 6:15 A. m. At $7: 15$ the head of the column had madeover nix milen. It then male a halt of ten minutes. At $9: 30$ A. $x$. the leading brigade had been deployed in front of the enemy fifteen miles from
camp. Forty minutes had been consumed in two halts. By 10 o'clock the marell was resumed: a combat took place. At $11: 20$ the marell for the day ceasod: three miles had been added to the more from 9:30 a. m., making eighteen miles for the day Four hours and three minutes were consumed in marehing aml fighting. vixty-two minutes having been used up in halts.

The author wishes it understond that this wat the first day of operations, and a very hot day in July. If 1 mistake not many will regard this performance good for a cool day. I will add that it no where appears that there was any necessity for (reneral 1

## DRILL REGCLATIONS FOR (CAVALRY. UNITED STATES

 ARMY"The efficiency of cavalry depends in the first place, fundamentally, on the control of the individual rider over his honse."

1. Single rank being the fundamental tormation of caralry, all details, detachments and other lowhes of tronps will habitually be formed in vingle rank, except when otherwise directed in these regulations.
2. Where the commands of the instructors are given for the execution of movements toward both flanks. the movements are explained towarl but one flank, it being only necespary to substitute the word left for right, or the reverse to have the explanation of the corresponding movement toward the other flank. In exceptions to this ruke the mosements are explained for both flanks.
3. All movements which are not prescribed from a halt or on the march may be executed either from a halt or marching.
4. All movements on foot, not vecially excepted, may be exe-- nted in dond, time. It the movement be from a hatt. or when marching in quick time. the command doulte fime precedes the command mareh, if marehing in double time the command double time is omitted.
5. All mounted movements, not wecially excepted, may be executed at a trot or gallop. To execute a movement at a trot or gallop. when not marching at these gaits, the command trot or gallop precedes the command marilh: marching at a trot or gallop, to exc-

Sirts. - The tollowing pages are from the advance shcets of the proposed new Drill Book for cavalry. They are of courve, merely provisional in thelr pature, and are published with a riew to diacusslion and posible amendment, where omissions of obecuritlea may occur. It is proposed to publish a portion of the work in earh number of the Jorival as fant as completes. Wegive here she sibhool of the soldier: it is the mamean that adopted for infantry ami Artllerg, with modificationk uecemary for the Cavalry.

It is suggested by the members of the Brard that communications on the subject be made at concise an pronible. onnsintent with clearness of exprestion: aloo, that it be atated whether or not communications shonid be regaried as momidential, and not for publication
dute a morement at the same gait. the command trot or gullop in omitted.
6. In mounted movements the gait nhould generally be increased progressively, the trot being executed from a walk. the gallop from a trot. When marching at a gallop. the gait will be decreaned to a trot, and then to a walk. before halting: when marching at a trot the same rule applies, halting from a trot being eonsidered an excep. tional morement.
7. In those morementis where the gaile may be either right or left, the words right or left in the commands are in parenthesis. thus: (right or left).
8. When for purposes of instriction any movement is disided into motions, or executed in detail, the last syllable of the command determines the prompt pertiomance of the first motion. and the commands. Two, Turee. ette, that of the other motions.
9. To execute the morements in detail. the instructor first commands: By the numbers, all movements divided into motions are then executed as above explainel, until the command: Withont the numbers, or until he commamis movements other than thove in the manual of arme.
10. There are two kinds of commands. The preparatiry wommand, such as foricurl, indicates the movement that is to be execouted. The command of exerution, wuch as march, or uat.t, or in the manual of arms, the part of the command which canses the execoution.

In the text the preparatory commands are distinguished by italics, those ot execution by smalid capitales.

The tone of command is animated, distinct, and of a louiness proportioned to the number of men under instruction.

Each preparatory command is pronounced in an ascending tone of voice, but always in such a manner that the command of execution may be more energetic and elevated.

On foot the command of execution is pronounced in a tone firm and brief.

In mounted movements, the preparatory commands are more or less prolonged to insure their being heard: the command of execution is always prolonged.

A well defined pause should separate the preparatory command and the command of execution; also the preparatory commands. when there are two or more.
11. To secure uniformit the captain practiser the officers and non-commissioned officers in giring commands.
12. It the instrutor wishe to revoke a preparatory command he does so by commanding: As you rere.
13. The trumpet calls and saber sigmals should be trequently used in instruction in odere that the otherere and men may readily recornize them.

## ELFMENTAKY DHILLS.

14. Thornugh training in the sehool of the woldier and the -houl of the tronper, is the hasis of efficiency. Instruction will be progrewive atd will he tirst given to small equads, which are made larger as the instruetion advances.
15. The otherer who sugerintends the instruction will mote the illtelligence of the recruits and ass the instruetion progreases, group them arometing to proteriency. in order that all can adrance as rapidly ats their abilities will permit. Thase who lack aptitude and quickness will be separated from the others. and placed under experienced drill masters, who will be cantioned to be patient and dilirent in giving instruction, and to avoid resorting to ridicule or abuse.
16. Generally sergeanteand corporals are the instructors and are supervised by an otticer, but the captain may occasionally require the lientenathe to act an instructors in the elementary drills.
17. The instructor will always matintain a military bearings and by a quiet, firm demeanor set a proper example to the men.

1s. As the recruits hecome somewhat proticient in the school of the soldier and sehool of the tronper. the ofticer superintending the instruction may call upon them in turn to drill the squad in his presence, and to correct any errors that may he observed; this will inerease their interest hasten their instroction, and facilitate judgment upon their titness for the duties of non-commissioned offcers subsequently.

## SCHOOL OF THF SOLDIEK.

19. This sehool has for its object the instruction of the individual recruit. and afterward that of the rquad. and must be taught with the ereatest care.
20. Short and frequent drills are preferable to long ones which exhanst the attention of both instructor and recruit.
21. 'The recruits wear the undress uniform and gloves, withnut belts. While executing the setting up exercinen the instructor may require the hlonsen to be unbutoned. From the beginning the
instructor will insist upon a smart appearance of the recruits, will exact that their clothing be clean and neatly aljusted. and in sar. rison will require them $t$ fall in with their shoes blackened.
bemarks of individial. instrlction.
22. The instructor explains each movement in as few words as possible, at the same time executing it himself. He requires the recruits to take by themselves the proper position, and loes not tourh them for the purpose of correcting them. except wien they are unable to correct themselves: he holds their attention by an animated tone, and does not keep them ton long at the same movement. al. though each should be upderstood before passing to another, and only exacts by degrees the desired precision and unitormity.
23. After the movements have been properly executed in the order laid down, the instractor no ingere contines himself th that order, but changes it in orter to develop the intelligence of the recruits.
24. When the execution of a movement is improperly begun and the instructor wishes to begin it anew for the purpose of correcting it, he commands: As you uere, at which the movement ceaves and the former position is resumed.
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individeal, instriction withoit arms.
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25. For this instruction a few recruits. asually not exceeding four, are placed in single rank, facing to the front and about six inches apart.
26. To teach the rechits how to assemble, the instructor requires them to close the left hand and place the knuckles against the waist, above the hip. wrist straight, back of the hand to the front; he then places them so that the right arm of each man rests: lightly against the left elbow of the man next on his right. and then directs the left hands to be replaced by the side. The men thus find themselves about six inches apart.
27. When the recruits have learned how to take their places. they are required to aremble without assistance from the instructor, at the command palic. in.

At this command, they fall in rapidly, as abore described, each man dropping the left hand as soon as the man next on his left has his interval.

## THE POSITION OF THE SOLDIER OR ATTENTION.

28. Heels on the same line and as near cath ather as the conformation of the man permits.

Feet turned out equally. and forming with each other an angle of about sisty derrees.

Kuees atraight without stitfues.
Body erect on the hips. inclininge a litule forward; shoulders square and talling equally:

Arms and hatids hanginer maturally. Bateks of the hathels outward; lithe fingers oplosite the seallins of the trousers: elbows near the benly.

Head crect and muape wo the from : ehin sliantly drawn in. without comstramt : eyes straight to the fromt.
29. Men who are kmek-kned. or who hate legs with large calves. canmot, Without comstrant, make their heels touch while stathling.

Recruits often bend the body back and project the belly in their efforts 10 stand erect: this temency as well as the hat habit of dropping a shoulder or advancing a hip must be caratiolly corrected.

## THE HESTS.

31. Being at a hatt. to reot the men. the instrigetor commands: 1. Break ranks. D. Marci.

At the command marela, the men fall out, hat remain in the immediate vicinity.
31. It the command fand is, they ansemble rapidly in their fismer places.
:32. It the command, nest, the men remain in mank, but are no lonser required to preserve silence or immobilits.
833. It the command. stand at ease, the men keep one heel in place and preserve silence, but not immobility.
34. To resume the attention, the instructer commands: 1. Symul. 2. Atrention; * at the secomd command the men take the pensition of the solder and tix their attention.

## P.ARADE REST.

35. To give the men rest. imposing both steathiness of position and silence. the instructor commands: 1. Paralle. 2. Rest.

Carry the right foot six inches directly the war, the left knee slightly lente; clasp the hathes in front of the centere of the body, the

[^9]left hand uppermost, the feft thumb elanped by the thinmb, alld wore finger of the right haml.

To resume the position of the soldier. the instructor commands 1. Squid, I. Attention.

## To bismiss the solu

36. Being in line at ai hatt. the instructor eormmatmis: 1. Iha miss, M. Mrein.

ESEN RIGiHT GH left.
37. The instructor ammalimis. 1. Eyes. 2. Riliat (or hert). 3. Fiont.

At the command right, turn the head sently, suan to hins the inner corner of the left epre in a line with the centre of the bents. the eyen fixed on the line bf the eyen of the men in, or sulpomed in be in, the same rank.

At the cominand front the head resumes the halhitual position.
The instructor takes particular care that the movement of the head does not deramge the spareness of the shoulders, which will happen if the movement of the former be too sultern. .

## HACINis.

38. To thr Right ir Lerft. The inveructor commathin: R. Right. (or left), ㄹ. Face.

At the command firre, faise slightly the right hed ame left toe and face to the right, turnihg on the len heel, assisted be a slight pressure on the bull of the fight foot ; rephace the right fore.

The facings to the lett are also executed unon the left beed.
39. Ti, the Kerr. The instructor commands: 1. Abmut. ㄹ. F.ues.

At the command face ridise slightly the left hed and right twe face to the rear, turning tol the right on the right heel and the ball of the left foot; replace tho left toot bevide the risht.

NALITE WITH THE HIND.
40. The instructor commands: 1. Right (or left) hemid 2. Salete

Raise the right hand smartly till the foretinger tonches the lower part of the head-lress above the right eye, thumb and tingers extended and joined, palm to the left and downward. firearm indined at 45 degrees, hand and wrist wtraight. (Two.) Drop the arm quietly to the side.

If uncovered, the forefinger toucbes the forebeal above the eye

## SETTINGi IP EXERCISES.

41. The recraits being in sintere rank (26). the instructor will place them three pares upart. A pate is thirty ineher.

As the importance of settids up camot be wrerentimated, all soldiers should be practised every week day it practicable, in the following excreises:

## FIRST EXERCLSE

 6. Rames.

At the second command raise the arm- latcrailly umtil horizental. palms upward. Heab: Ratse the arms in a direular direction over the heal, the tige of the fingers lowehins the lep of the eay wer the forehead hacks of the fingers in contact their full lemgit. thamber pointing to the rear. ellows pressed back: I'r: Extend the arms upward their fill length. palme touching. Dopar furce bem obliquely back, ath srmathy let them fall whe wides. Ratse: Raise the arms laterally as preseribed fir the seoond command. Continue the exercise by the repetition of the thind. fourth. fith and sixth commands.

## ECOND ENEACISF:


It the second command, raise the arms laterally an in the first exercise. Front: Swing the arms extenled lorizontally the fromt, patme tonching. heels on the promml. Rear: swing the arms extended, well to the rear. inelining them slightly downward, mising the bedy unon the toes. Continue the exercine by the repetition of the third and fourth commateds. till the men, it porsible; are able to wuch the handy behind the back.

## THIRD EXERCISE.

44. Commands: 1. Arm. e. Exercise. 3. Circle.

At the secomd command raise the arms laterally, an in the firnt esercise Circle: Slowly describe a small circle with, the armo, upward and back ward, from front to rear. the arms not passing in front of the line of the breast. Continue the exercier by the repetition of the third command.

## FOIRTA FXERFISE.

45. Commands: 1. Arin. 2. Exercine. 3. Sholloners. 4. Fbont, 5. Rear.

At the recond command, mine the arms laterally as in the fire exercise. Silochazs: Plafe the tipos of the finger lighty on the points of the shouders, keeping the upper arme horizontal. Frest Force the ellown to the front. Resas: Foree the elbows hate as far as possible. Continue the excreise by the repetition of the surth and tiftl commands.

FIFTII EXERCISE.

At the seeomb command, raise the arms latemally as in the tirs
 hands quickly, spreading the tingers and thambe apart an much apossible. Continte the exereve by the repetition of the thim and fourth commands.
*NTII EXERCISE.
47. Commanis: 1. Formeme reftionl. P. Ranes. 3. Ib. A. Dows At the second command, raise the tionearms until the are nearly
 Thrust upard with force extending the arme th deir tall length. Down: Force the arms obliquely back and gradtally let them tall to the sides. Continue the exercise by the reperition or the secomb. third, and fourth commands.

## SEVENTH EXERCISE:

48. Commanils: 1. Forrarms horizontal. :2. Risise, 3. Front. 4. Rear.

At the second command, raise the forearms to the front until horizontal. elbows forced hack, hands tighty cloned. knuckles down Front: Thrust the arms foreibly the thent. turning the knokleup, arms horizontal. Rear: Bring the arms back quickly w the first position, forcing elbows and shoulders the thear. Comtinu the excreise by the repetition of the thind and tourth commands.

## elintif exercine.

49. Commands: 1. Trwnk, 2. Fixercise. B. Down. 4. Back.

At the second command, raise the hands and place them on the hips, thumbs to the rear, fingers to the front. elbows presedel bark. Down: Bend the trunk forward at the hips as tar as persithe. Back: Raise and hend the trunk to the rear an far ar powible Execute both motions slowly without benting the knees. Continus the exercise by the repetition of the third and firurth commands.

## sintil exercise.

50. Commands: 1. Trunt, e. Exercise. 3. Hiaht, 4. Left. At the secomel command. place the hands on the hipe as in the eighth exercise. Riant: Bend the trunk to the right. without twisting it or raising eithor heel. Left: Bend the trunk similarly tw the left. Fisecute both motions slowly. Continme the esercise by the repetition of the third and fourth commande:

## tenth exercise.

51. Commands: 1. Trinki. ‥ Fixercise. 3. Circle. 4. Right (or hert ).

At the second command, place the hands on the hips as in the eighth exercise. Ruart: Bend the trank to the right as in the ninth exercise: turn the trunk to the rear and bend to the rear as in the eighth exercise: turn the trunk to the left and bend to the left as in the ninth exercise : turn the trunk to the front and bend torwarl as in the eighth excrise. Continue the exereine by the repetition of the fourth command.

## Ehfi EATH EXERCISE

52. Commands: 1. Arme rertical, palme to the front, … Raise, 3. Dows. 4. Lp.

At the second command. raise the arms from the sides. extended to their tull leugth, till the hands meet above the head, palms to the front. fingers pointed upward. thumbs locked, right thumb in front, whoulders pressed hack. Down: Bend over till the hands, if possible, touch the ground. keeping the arms and knees straight. UP: Straighten the body and swing the arms, extended, to the rertical pesition. Continue the exercise by the repetition of the third aud fourth commands.

## TWELFTH EXERCISE

53. Commands: 1. Arme foricard, palms down, 2. Raise, 3. Down. 4. IT.

At the second command, raise the arms to the front, extended to their full length, till the bands are in front of and at the height of the whoulders, palms down, fingers extended and joined, thambs under forefingers. Down: Bend the trunk forward at the hips as far an fowsible, and swing the arms backward, knees and arms straight. UP: Straighten the trunk and swing the arms to the forward position. Continue the exercise by the repetition of the third and fourth commands.

## thiteenth exercise.

54. Commands: 1. Ley, 2. Exercine, 3. Half-bend. 4. Down. 5. UP.

At the second command. place the hands on the hips as in the eighth exercise. Down: Lower the body, separating the knees and bending them as much as possible heres on the ground, the head and truik erect. C'p. Raise the body. straightening and closing the knees. Continue the exercise by the rejetition of the fourth and fift commands.

## fochtenth exerine.

55. Commands: 1. Leg, E. Exercise, 3. Full-btul, 4. Daws, i. Up.

At the second command. place the hands on the hipmanin the eighth exercise. Down: Lower the body, separating the knees and bending them as much as possible, head and trunk erect. heels raised. weight of the body resting on the balls of the fect. ['p: Raise the body, straightening and closing the knees and lower the heels to the ground. Continue the exercise by the repetition of the fourth and fift commands.

## fiftenth exercine.

56. Commanda: 1. Ley, 2. Exercise, 3. Lerit (or right), t. Formard, 5. Rear, or 5. Groind.

At the second command place the hands on the hips as in the eighth exercine. Forward: Swing the lef leg to the front. knee straight, to as to advance the foot about fifteen inches. toe turned out and slightly alepressed, the body balanced on the right foot. Rear: Swing the leg to the rear. knee straight. toe on a line with the right heel, sole nearly horizontal. Continue the exercise by the repeation of the fourth and fifth commands.

When the recruit has learned to balance himself, the fourth command is followed by Grocnd; throw the weight of the body forward by raising on the ball of the right foot adrance and plant the left, the left heel thirty inches from the right. and adrance the right log quickly to the position of forward. Continue the exercise by the repetition of the fifth command, giren when the right and left legs are alternately in the position of forward.

## sixteenth exercise

57. Conimands: 1. Leg. 2. Exercise, 3. L'p.

At the second command, place the hands on the hips as in the eighth exercise. Up: Raine the left leg to the front, bending and
elerating the knee an much an possible. the leg from knee to instel vertical. toe depressod. ['p: Replace the left foot and raine the right legs as deseribed for the left

Execute slowly at tirst, then gradually increare to the cadence of double time. Continue the exercise by the repetition of the third command given when the right and left lege are alternately in position.

## 


At the second command. place the hands ont the hips. an in the dishth exorrine. Ir: Raise the body upon the teen kneen straight, heels topether. Dows: Lower the heels slowly to the ground. Continae the exercise by the repetition of the third and fourth commands.
59. At the commanal hift, given at any time. the exercise coases and the position of the soldier is resumed.

6it. As soon as the exercises are well understood, they may be executed without repetition of the commands. For this purpose the instructor gives the commands as heretofore preseribed, then adds: Contime the ererise upon which the motions to be repeated are continuously execonted until the wmmand halt.

## REMARKS.

61. The recruit should repeat each exercise from eight to ten times, the soldier should repeat them from sixteen to twenty times. In order not to strain or unduly fatigue men who are not accustomed to the exercines. the arm, hand, trunk, leg and foot exercines showld be alternated: the drill should be interrupted by frequent rests, and varied by instruction in the facings, marchings, etc.. and the mosement, without arms in the fencing exercises. While oxercising one part of the booly. care should be taken that the other parts remain quict as far as the construction of the body will allow.

## principles of the difgerent steps. -the direct atep.

6i?. The length of the direct atep (quick lime) is thirty inches, measured from heel to heel, and the diadence is at the rate of one hundred and twenty ateps per minute. At this rate a mile can be pansed over in about eighteen minutes.
63. The recruits being contirmed in the position of the soldier, the instructor places himself eight or ten pacen in front of them and facing towarl them executes the ntep Nowly, at the same time explaining the principles; be then commands: 1. Forward, 2. March.

At the command formard: throw the weight of the body upon the right leg without bending the left knee.

At the command march, move the left leg smartly, but without jerk, carry the foot straight forward thirty inches from the right. measuring from heel to heet, the sole near the ground, the toe a little depressed, the knee straight and slightly turned out; at the same time throw the weight of the body forwari, and plant the foot withon shock, the weight of the body resting upon it; next in like manner advance the right foot, and plant it as alove: continue the mareh. without crossing the legs or striking one against the other. keeping the face direct to the front.
64. The instructor indicates from time to time the cadchere ot the step by calling, one, tico, three, four; or left, right, the instant the left and right foot, respectively, should be planted.

The cadence is at first given slowly in order that the recruits, may thoroughly comprehend the mechanism of the step. and then gradually increased to that of quick time.
65. To arrent the march, the instructor commands: 1. Squat. 2. Halt.

At the command halt, given the instant either fiot is brought to the ground, the foot in rear is brought up and planted by the side of the other without shock.

## MARK TIME

66. Being in march, the instructor commands: 1. Mark time. 2. March.

At the command march, given the instant one foot is coming to the ground, continue the cadence and make a semblance of marching, without gaining ground, by alternately advancing each foot about half its length, and bringing it back on a line with the other.

To resume the direct stej, the instructor commands: 1. Foruaid, 2. March.

## short step.

67. Being in march, the instructor commands: 1. Short step. 2. March.

At the command march, lake steps of fifteen inches. The direct step is resumed at the command: 1. Forirard. 2. Marrh.

The length of the short step in double time is eighteen inches.

## sIDE STEP.

68. Being at a halt, the instructor commands: 1. Right (or leff), step, 2. March.

At the command march. carry the right foot twelve inches to the right, keeping the knees straight and the shoulders square to the front; as soon as the right foot is planted, bring the left foot to the side of it. and continue the movement, observing the cadence for each foot as explained for the direct step. The squad is halted by the commands: 1. Squad, 2. Halt.

The side step is not executed in double time.

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BACK STEP
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*69. Being at a halt the instructor commands: 1. Backicard, 2. March.

At the command march. step back with the left foot fifteen inchen straight to the rear. measuring from heel to heel, and an on with the feet in succession. The squad is halted by the commands: 1. Squad, ㄹ. Halt.

At the command halt, bring back the foot in front to the side of the one in rear.

The back step is only used for sbort distances and is not executed in double tine.
70. The short step, side step and back step may be executed from mark time and convernely.

## ChaNGE STEP

71. Being in marcla the instructor commands: 1. Change step, 2. March.

At the command march. given the instant the right-mot comes to the ground, the left foot is adranced and planted: the toe of the right foot is then adranced near the heel of the left. the recruit again stepping off with the left.

The change on the right foot is similarly executed, the command mareh being given when the left foot strikes the ground.

## the dolble step.

72. The length of the double step is thirty-six inches: the cadence is at the rate of one hundred and eighty steps per minute. At this rate a mile can be passed over in about ten minutes.
73. To march in the double step, the instructor commands: 1. Foricard, 2. Double time, 3. March.

At the command forvard, throw the weight of the body on the right leg: at the second command, raise the hands until the forearms are horizontal. fingers cloned, nails toward the body, elbows to the rear; at the command march, carry forward the left foot, the
leg alightly bent. the knee somewhat raised, and plant the foot, the toe first, thirty-fix inches from the right: then execute the same motion with the right foot. Continue this alternate movement of the feet, throwing the weight of the body upon the foot in alvance. and allowing a natural swinging motion to the arms.

The recruits are also exercised in running, the principles being the same an for double time.

In marching in double time and at the rul. the men breathe as much as possible through the nose, keeping the mouth closed.

covering and marchinti on pints.
74. The recruits will be tanght how to cover two points. For this parpose the instructor will select two points on the ground and require each recruit in succession to place himself so that the from longation of the straight line through those points shall pass between his beels. The instructor places himself in rear of each recruit, points out the faults of his position and then causes him to cover accurately.

When the recruits are able to cover the points quickly and accorately, they are required after covering, to march upon the point. in quick and double time. The instructor remaining in rear of the recruit observen his march, and when halted the recruit observes his corering and corrects it if necessary. At the commmand patit. orr. he steps to one side and stands at ease. The other recruits are halted near the same point, and when all have arrived. the instructor joins them, and selecting new points, continues the exercise.

Two recruits should also be established by the instructor, one covering the other, and the rest of the recruits required to cover them, as in file, at considerable distances from each other: the recruits should then be faced about and the covering taken upon the two now in front.

It should be demonstrated to the recruits that they (annot march in a straight line without selecting two points in the desired direction and keeping them covered while adrancing.

A distant and conspicuoun landmark, wuch as a break in a mountain range, a group of trees or a church steeple, will next be selected as a point of direction; the recruit will be required to choose two intermediate points on the ground in line with the point of disection and to march upon it by covering these points. new points be-

## ing selected as he advances.

The inatruction in covering and marching on points may be extended at the discretion of the inatructor.

## REMARKS ON INETRTCTION.

75. In future, and until the recruits bave learned the manual of arms, a part of the daily drills will be devoted to the Individual Instruction with arms. and a part to Squad Drill. without arms.

All the preceding instruction should be frequently repeated.

## INDIVIDUAL INSTRUCLION WITH ARMS.

76. The recruit whould be taught the use of his carbine, and instructed in its care and preservation. an soon as possible: therefore, the instruction in the manual of arms will begin as sonn as the recruit has made fair progress in the individual instruction without arms.

The instructor will readily be able of alternate the instraction without arms. and that with arms, so as to prepare the recruit most rapidly and effectively for his duties an a soldier in the troop.

A part of each drill with arms. should be deroted to marching. (See Paragraphs 131. 13:).
i7. For this instruction, a few recruits, usually not exceeding four are formed in single rank.

At the command fall in the recruits place the left hand above the hip and assemble as prescribed in Par. 2ti, pieces at order arms.

7\%. The cadence of the motions is the same as that of quiek time. but in order not to fatigue the men. they will at tirst be required to give their whole attention to the mechanism of the motions, the cadence being gradually acquired as they become acoustomed to handling their arms.

The instructor will at tirat allow the men to exerute the movements by themselves without command, until they understand the details: after this only. will he reguire them to execute the movements together at command.

As the movements relative to the cartridge, adjusting the sights, sling and unsling carbine, cannot be executed at the prescribed rate, nor eren with uniform swiftness, they are not subject to the cadence. The instructor, however, causes these movements to be executed with promptness and regularity.
79. Being at a halt, the movements are for the purposes of instruction, divided into motions and executed in detail. (Par. 8 and 9.)

As soon as the recruits thoroughly understand the several motions, they execute them alternately with and without the numbers, in order to attain the proper cadence, and to become perfect in the mechanism.

The execution of the manual by the numbers is chiefly applicable to the instruction of recruits, but may be recurred to for the purpose of correcting faults and cbecking carelessness.

To fix the cadence in the minds of the men, they may from time to time, be instracted to count in a low tone, one, at the end of the first motion, tico, three, etc., at the end of the other motions.
80. To aroid repetitions, the following rules in the manaal of arms are general:

First.-In resuming the carry from any position in the manual. the motion next to the tast concludes with the fingers of the left hand as high as the hollow of the right shoulder, fingers extended and joined, thumb close to the forefinger. back of the hand to the front. elbow close to the body, right hand embracing the guard with the thumb and forefinger.

Second.- In all positions of the left hand at the sisht, the thamb is extended along the stock, the end of it touching the band.

Third.-In all positions of the piece in front of the centre of the body, the barrel is to the rear and vertical.

Fourth.-The piece is habitually carried with the hammer at the safety notch.

## mancal of the carbine.

(Adapted to the Springtield Carbine Cal. ts. Model Isst.)
81. The retruit being in the position of the soldier, the instruc. tor will first cause him to place his piece carefully, in the fillowing positions:

## position of order abms.

82. The butt rests evenly on the gronnd, arms hanging naturally. elbown near the body, the right hand holding the piece between the thumb and fingers, fingers joined, ball of the thumb against the seam of the trousers ; this will incline the harrel forward, and the toe of the piece will be about one inch to the right and two inches to the rear of the right toe.

## pobition of cabry arms.

83. The piece is in the right hand, the thumb and forefinger embracing the guard, the remaining fingers closed together and grasping the stock just under the bammer, which rests on the little finger; the barrel nearly vertical, and reating in the hollow of the shoulder, the guard to the front; the arm hanging nearly at its full length near the body.

The instructor sees that the piece, at the carry. is neither ton high nor too low; if too high the piece will be unsteady: if toon low.
the right arm will become fatigued, and the shoulder will be drawn duwn.
84. Recruits often have defects in the conformation of the shoulders. breast and hips.

On first bearing arms they are liable to derange their positions. by lowering the right shoulder and the right hand. or ly sinkitg the hipand spreading the elbows. The instructor endeavors to corroct thene faults. so that the position of the pieces in the name line may be uniform. without constraint to the men.

The manual of the carbine will be taught to recruits in the following order :
85. The instructor, commands. being at the order: 1. Carry. $\because$. Irms.

Raise the piece vertically with the right hand. grasping it at the same time, with the lef above the right. resume the carry with the right hamd. (Two.) Drop the left hand by the side.
86. Being at the carry: 1. Order. …AnMs.

Adrance the piece, graving it with the left hand. the forearm horizontal. let go with the right hand; lower the piece quickly with the left. re-grasping it with the right above the sight. the hand near the thigh, the butt about three inchen from the ground. the left hand steadying the piece near the right, the fingors extended and joined. the forearm and wrist straight, and inclining downward. ('Two.) Lower the piece gently to the ground with the right hand, drop the lef hand to the side, and take the ponition of order arms.
87. Being at the carry : 1. Present, 2. Arme.

Carry the piece with the right hand in front of the center of the body, at the same time granp it with the lett hand at the sight, the firearm horizontal and resting against the body. (Two.) Grasp the small of the stock with the right hand, below and against the guard.

1. Carry, 2. Arms. Resume the carry with the right hand. (Two.) Drop the left hand by the side.
2. Being at the carry or order: 1. Kight shoulder, :2. Arms.

Raise the piece vertically with the right hand; grasp it with the left at the band, and raise this hand till it is at the height of the chin; at the same time embrace the butt with the right hand, the twe between the first two fingers, the other fingers under the plate, barrel same inclination to the front as at order arms. (Two.) Raise the piece and place it on the right shoulder, the lock-plate up, the muzzle elevated and inclined to the left, go that, viewed from the front. the line of the stock from the toe to the guard. shall appear

Drill regulations for cavalry.
parallel to the row of buttons; slip the left hand down to the lock plate. (Three.) Drop the left hand by the side.

1. Carry: 2. Abms. Carry the butt slightly to the left. and lower the piece. with the right hand; grasp it with the left at thesight, tbe band at the height of the chin. the barrel to the rear and at the same inclination to the front, as at the order. (Two.) Resume the carry; with the right hand. (Turee.) Drop the lett hand by the side.
2. Being at the right shoulder. 1. Order, 2. Arms.

Take the first position of carry from right shoulder. (Two.) Lower the piece with the left hand, at the name time regrasping it widh the right above the sight, and take the first position of order from carry. (Three.) Take the position of order arms.
90. Being at the carry or order. 1. Port. 2. Arme.

Raise and throw the piece diagonally acrosm the body. lock to the front; granp it smartly at the same time with both hands. the right at the small of the stock, the left at the sight, barrel sloping a!? ward, a little to the front, and crossing opposite the middle of the left shoulder, right forearm horizontal, elbows near the body. The palm of the right hand is above, and that of the left hand is under the piece.

1. Carry, 2 . Arms. Resume the carry with the right hand. (Two.) Drop the left liand by the side.
2. Being at the port. 1. Order, 2. Arms.

Same as second and third positions from right shoulder to order.

## the rests.

92. Rest, stand at ease. and break ranks, are executed an phe. scribed in Paragraphs 30. 32 and 33. The men retain their pieces.

On resuming the attention they take the position of ariler arm.
93. Being at the order: 1. Parade, ᄅ. Rest.

At the command rest, carry the right foot six inches straight to the rear, the left knee slightly bent; carry the muzzle in front of the center of the body, the barrel to the left, the right hand near the muzzle, and take the position of parade rest, the muzzle between the thamband forefinger of the left hand.

To resume the order:- 1. Squad, 2. Attention. Quit the piece with the left hand, and resume the order.
94. To dismiss the squad with arms: 1. Port, 2. Arms. 3. Dismiss, 4. March.
95. Being at the order, carry or right shoulder. 1. Sling. 2 . Carbine.

Take the position of port arme. (Two.) Laosen the grasp of the left hand and revolve the piece with the right. barrel to the rear, regrasp it with the left near the swivel bar. and move the lett band opposite to, and in front of the left shoulder. back of the hand down. thumb along the sroove. ellow close to the body, muzzle pointing upward to the left and tront: at the sume time quit the piece with the right hand, and with it slip the swivel to the front, open the swivel with the thumb. engage it in the ring. and grasp the small of the stock with the right hand. (Three.) Let go with the left hand dropping it to the side. lower the muzzle to the right, pushing the carbine behind the right thigh. hatt to the rear, and drop the right hand to the side.

Being at the port to sling carbine. execute the second and third motions as abore.
96. 1. Unsling. 2. Carbine. Grasp the carbine at the amall of the stock with the right hand and bring it to the front and take the position of the second motion of sling carbine; free the swivel from the ring, and carry it to the rear with the right hand: grasp the carbine with the right lamd. at the small of the stock, and take the position of port arms.

The carbine may then by ammamal. be brought the order, carry or right whoulder.

## 

97. The movements of kneeling. lying dowin and riniug are first taught without arms: they are executed atw with arme except that in the position kneelins the right hand rests on the right thigh, and in moving to and from the lying position, the right hand is placed on the ground: it the position lying down, the forearms are against each other on the ground. left arm in tront.

At the preparatory command tor kneeling. lying down, or rising, the hammer will be lowered on the vafety-noteh, if wot meady there. This rule is general.
98. Being at the order: 1. I'ripere to kincel, 2. Kneel.

At the second command. half face to the right, carrying the right foot so that the toe shall be about ten inchen to the rearand ten incher to the left of the left heel; kneel on the right kine, bending the lef, the left toe slightly inclining to the right, the right leg pointing directly to the right, the weight of the body resting on the right beel; place the lef forearm across the left thigh, the hand hanging
naturally; the piece remains in the position of order arms. the right hand grasping it above the sight. This is the position of order kneeling.
99. Being at the orter kilecling. 1. Propare to rise. 2. Rise.

Rise ou both feet, place the righ heel beside the left. and take the position of order arms.
100. Being at the order, 1. Prepare to lie dorn. ?. Lae Down.

At the second command, take the powition of order kneeling. (Two.) Draw back the left foot, and place the knee on the ground: place the lef hand well forward on the ground, and lie flat on the belly, body inclined slightly to the right and legs to the lett : the piece is lowered at the same time with the right hand toe and muz. zle resting on the ground, barrel up, left hand at the sight. left elbow on the ground, right hand at the small of the stock, opposite the neck.
101. Being in position lying down: 1. Prepare to risp. 2. Rise

At the second command, draw back the piece slightly. grasp it at the sight with the right hand. and bring it to a vertical position. barrel to the rear, butt opposite the neck: with the aid of both hands, raise the body to the position of order kneeling. (Two.) Rise as from the order kneeling.
102. Being at the order kneeling: 1. Prepare to lir down. ㄹ Lie dows.

Execute the second motion of lie down. (lar. 100.)
103. Being in position lying dowil: 1. Prepure to lined. 2. Kivel.

Execute the first motion of rise. (Par. 101.)

## to moad.

If the cartridge box is worn. it is opened atter executing this command and closed after executing order arms.
104. Being at the carry or order: 1. Prepary to load. 2. Loan.

At the second command, half face to the right. carrying the right heel six inches to the rear and three inches to the right of the left. turning the toes of both feet slightly inward; at the same time raise the piece with the right hand, drop it into the left at the sight. muzzle at the height of the chin. left elbow against the body, the small of the stock two inchen below the right breast. place the right thumb on the head of the banmer, foretinger on the trigger, the
other fingers supported against the small of the stock. half cock the piece: lower the muzzle, barrel sloping downward at an angle of about twenty-five degrees, at the same time opell the chamber ; look toward the chamber. remove the cartridge shell if neceswary, take a cartridge between the thumb and first two Higers. place it in the bore. pressing it home with the thamb: clonte the chamber with the right thumb, cast the eyes th the front. carry the right hand 1" the small of the stock and raise the muzale to the height of the Chin. The last prosition is the position of lond.
105. If kneeling. the lett forearm rents acrose the left thigh. If lving down, the let hand steadies the piece, toe and mazale resting "II the ground.
106. Being in the porition of lomat: 1. Squat. O. Reabr.

Cock the piece with the right thumb without moving the fingers and return the thumb to the small of the stock.
105. The piece may be brought to a ready. from any position. he the same command: in executing it. first take the position of lead. (Par. 104.)

118, Being in the position of load or ready: 1. Order. ‥ A Axs.
Iower the hammer to the satety notch, and resume the order. It kneding. lower the hammer to the safity noteh. and resume the order kneeling.
109. Being at port arman to ascertain it any of the pieces are haded: 1. Open, e. Cuamber.

Halfecock the piece with the right thumb. open champer and return the hand to the small of the stock.

The instructor then examines the pieces: each man. as som an the hammer to the safety noteh, and returns the hand to the small of the stork.

If the instructor does not wish to cxamine the pieces. he commands: 1. Close, 2 . Chamber.

At which chambers are closed, hammers lowered to satety noteh, and the port is resumed.

To prevent accidente, the chambers will be opened, whenever the aquad is tormed, and again just before being disminsed.
110. Being in any position. pieces loaded, to draw cartridge: 1. brair. o. Cartridge.

Executed as described for loading, except that the cartridge is withdrawn and returned to the box or belt.

TO AIM AND FIRE.

111. Being at the ready: Aim.

Raise the piece with both hands and support the butt firmly against the hollow of the right shoulder. right thumb extenderi along the stock. barrel horizontal: slip the left hamd baick th the. guard, the littie finger resting against the bottom of the thumb. piece of the can-latela: the left elbow resting against the boty atml an far to the right as it can be placed with ease, the right elbow ahigh an the shoulder, incline the head slightly forward and a werg little to the rightithe gheek resting against the stock. left eve elosed the right ege looking through the notch of the rear sight so as to perceive the top of the front sight, and aligning the two on the ob. ject to be simed at ; the second joint of the forefinger resting lightly. against the tront of trigger. but not pressing it.

## Fire.

112. Press the forefinger againat the trigger: fire without deranging the aim. or lowering or turning the head, and remain in that position.

## Luad.

113. Lower the piexe and load as already explained.
114. The exercise is continued by the commands: 1. Squmi. 2 . Ready, 3. Aim, 4. Fire, j. Load.
115. To acenstom the recruits in the ponition of aim, to wait for the command fire, the instructor commands: 1. Recoter. e. Arms

At the command recorer, withdraw the finger from the trisger - at the command arms. take the position of roady.
116. In aiming knceling, the left elbow rests upon the left knee. the point of the elbow in front of the knee cap.

In amomg lying down, raise the piece with bothhands, rest on both elbows, and press the butt tirmly against the right shoulder; it re corering arms. the piece is held an in load.
117. When the recruite are thoroughly instructed in the aljust. mente of the sight (slide and windgage), and the principles of aiming an laid down in the Firing Regulations for Small Arme. ther will be required to aim using the different lines of sight. For thiparpose the instructor commands: 1. At (so many) yards. 2. Squad, 3. Ready, 4. Aim.

The instructor will allow sufficient time between the commandfor the men to adjust the sight, and assure hinaself by careful inspec. tion that each man sete his sight at the range indicated. Whell satisfied that the subject in fully comprehended he will excreise the
men in aiming at a denignated object. For this purpowe he commands: 1. At that tree (or at -), 2. At (so many) yurds, 3 . Squad. 4. Ready. 5. Aim.

At the first command. fix the eyes on the object indicated: at the acond command, adjunt the sight, and immediately $t \mathrm{x}$, the eyes, on the objeet again.
118. When this drill takes place out of doors, the instrutor will be careful that the object indicated in apparenty at the dintance anmounced in the command. By changing the ohjective. all the differone lines of sight may be used: the men should also be practiced in aiming at objectr above and below them.
119. The recruits are first tanght to loal and fire without using cartridges: ater a few lessons, dummy cartridges whomble uned. and when well instructed the drills will dose with a few rounds of blank cartridges.
120. When cartridges of any kind are to be used. the fact will be stated in the first command. Example: 1. With dummy (hank (or ball) cartridges, 2. Prepure to lomd. 3. LaAD. This ruld is general.

> INDGIDGAI SALITE WITH CARBINE.
121. Being at the carry: 1. Cartine. ©. Salrtb.

Carry the let hand smartly to the hollow of the right shoulder, torearm horizontal. palm of the hand down. thamb and fingers extended and joined, torefinger against the piece. (Two.) Drop the left hand by the side.

## TO INEPECT CARTRIDGE BOXES.

12.2. Being at the order: 1. Open, ㄹ. Boxis

Open the cartridge box with the lefl hand. and drop the hand lig the side: each man us his box is inspected, clowes it and drops the hand to the side.
insipection of armi (hismotented).
12:3. Being fully armed, with carbine at the order: 1. Inspection. -2. Arms.

If the cartridge boxes are worn, they will he opened at the command arms.

Fach man. an the inspector appronchen him. executes jort arms and open chamber.

The inspector taken the piece; the man dropping the hands to the ides, inspects the piece and hands it back to the man, who resumen the port, closes chamber, slings carbine and unhutoms the flap of the pistol holster.

As the inspector returns the piece, the next man executes inspection arms, and so on throughout the squad. Should the piece be in. spected without handling, the man slings carbine when the inspector passes; the next man immediately executes inspection arms.

The inspection of arms usually begins on the right. atter which the inspector may pass in rear and inspect the boves from left t., right.

The carbines and boxes having been inspected, the inspector alp. proaches the right of the squad; at his approach the first two ment execute inspection pistol; as he passes to the second, the dirst man returns pistol and draws saber, and the third man execotes inspec. tion of pistol and no on throughout.

When the inspector again approaches the right. the first twol men execute the first motion of inspection saber; the first man. as the inspector comes in front of him, executes the second motion of inspection saber: the second man, as the inspector comes in front of him executes the second motion of inspection saber, the tirst man at this instant executing the third motion, and the third man the first motion; the first man then returns saber and unslings carbine. Athe inspector comes in front of the other tiles, the movement, as just explained, is carried out successively.
124. If armed with kearbine and saber only, each man draw, saber as soon as he slings (arbine, and the inspection is conducted atw before.
125. If armed with the pistol and saber, or saber only. the saber is returned after the inspection.
126. If armed with carbine only, each carbine, after having been inspected, will be brought to the order.
127. The tollowing positions of the piece are intended mainly fin use in dispersed order and route marches. When marehing in any of these positions, the pieces, will be brought to the order without com. mand upon halting. Whenever the command for any of these positions is given, the piece will be shifted in the most convenient man. ner; reducing the movements to regular motions and cadence is prohibited.
128. 1. Trail, 2. Asms. The piece is grasped with the right hand, where it will balance, barrel up, piece nearly horizontal.

A similar position in the left hand may be used.
129. 1. Left Shoulder 2. Arms. The piece resta on the lett shoulder, barrel up and mpzzle raised wo as not to interfere with the
men in rear, trigger suard in front of and near the shoulder. keft hand embracing the butt, the heel between the first and secomd tin. surs. ellow down.
130. 1. Sorner. ㄹ. Arve. The piece in helld in the right hathd at the batance. barvel up. sloping dowaward to the toront: right hat supported against the front of the hip. "pper arm againat the stock.

I corresponding powition in the lef hand may be used.

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mEMARKS ON THE MANIAL. OF ARMS.
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131. When the recruits are tirst exereised in marehing with arms. the instructor orders the pieces into position before placing the sulual in march and before passing from quick to double time ; he also causes the recruits to be at quick time at the carry before ordering the halt.
132. When the marehing- and manmal of arms are thoronghly understood. the exerntion of the manal is governed by the follow. ing gemeral rules:

First-If at the order. bring the piece to the risht shoubler at the preparatory command for marching in quick time.

Second.-If at the order or carry, bring the piece to the right shoulder at the command turn or double time.

Third.-The left hand, if free, in double tille is held an when without arms.

Fourth. - If at the right whoulder, bring the piece to the order on halting. the order and halt being executed simultanconsly.

Fith - When the facings. side step, back step, alignments and lowdings are executed at the order, raine the piece slightly while in motion. and resume the order on halting. When this rule applies to other movements, it is therein stated.
133. In the battle excreises, or whenever circumstances require, the regular positions of the manual of arms and the tirings may he ordered without regard to the previous position of the piece; such morements as are not in the maruy will be executod without regard to motions or cadence.

It is laid down as a principle, that the effective use of the weapon is not 10 be impeded by the formalities of drill.

## instruction of the sevad.

134. In this instruction, the recruits are divided into groupn of trom tive to eight men, to represent squads, cach under the command of a non-commissioned officer, preferably a corporal.

The object is to give the corporal the contidence and experience necesaary to qualify him as a squad or group leader, while at the same time teaching the recruits the movements in close and dispersed order.

The corporal, as leader, is posted on the right of the rank: as instructor he goes wherever his presence in necessary. ( (ieneral rule.)

The corporal is the instructor, but the drill is always superintended by an officer or sergeant. The movements are explained as with arms; but in the first instruction of recruits. they are taught without arms, omitting the references to the position of the piece.

An intelligent recruit is placed on eath flank of the spaad: when the gaide is announced in the command, the man on the designated flank, or in the center, conducts the march but in no other respect performs the functions of guide.
135. The depth of a man is taken as twelve inches: his firnt in rank as twenty-eight inches, which includes bis breadth and interval of six inches.
136. Facing distance is sixteen inches. i. e.. the difference between the front of a man in rank and his depth.
137. To form the squad, the corporal places himself at the point where the right of the squad is to be, faces in the direction in which it is to face, makes the signal for the assembly and commands pall in.

At this command, the men form in their proper places in single. rank, from right to left. taking the intervals as prescribed. arms at the order.
principles of the alignments.
138. The alignments are first taught by requiring the rucruits to align themselven, map by man, upon two files established as a base.

Being at the carry or order, the instructor commands: 1. Tirn filf.s from the right, (left or centre) thre pares to the front. 2. Matre. 3. Next, 4. Front.

At the command march, the first two files from the right execute. eyes right, march three paces to the front, halt and place the left hand above the hip (Pay. 26); the instructor aligns them and then canses the remaining files to move successively on this alignment by the command next.

At the command nent, the file on the right of the rank executen eyea right and marchen three paces to the front, shortening the last stop so as to find himself about six inches in rear of the new align-
ment. Which must newer be passed: be then platen the left hami above the hip and taking steps of two or three inches, mover on the lime places his arm lighty againat the ebbow of the man on his right. wo that the lime of hin eves and that of his whoulders shall be in lime with those of the men on his right.

The instructor is a few paces in front of the sifuad and tacing it, (o) sec that the principles of the alignment. are properly executed. When the last file has arriverk, the instructor verifies the alignment. be patinar himself outside the right fank. and orders up or batek, sild men as mav be in rear or advance of the line.

It the command font. given when the rank is aligned. the men cast their eyes to the tront and drop the left hand to the side.

1:39. In orter to liabitate the recruit to his intersal in line. the left hand is placed above the hip in all alignmente in the sehool of the Soldier.

Drewing to the left. earh man places himeneft ow that bin left - llow touches lifhtly the arm of the man on his left.

Dreswing th the center, the base tiles are entablished and execute tiont: at the command mext, the men next on the right and left of the center move to the front. and dress an explained: those on the right of the center dress an if the alignment were to the left, and shose on the lett of the conter as if the alignment were to the right. The inaturny verities the alignment frome either flank.

## Remarks

140. Ifter neryatirnment the instructorexamines the position ot each man, and, if necessary. corrects it.

In the first drills, the basis of the alignment in entablished paralLel to the front of the squad. and aftegward. in oblique directions.

The instructor nbserves in the alignment, that the recruit does mut thrust his head or body to the front or rear; that he turns his homi mo further than is necessary to enable him to look along the line of eyes and in see slightly the breast of the recond man from him: that at the command front, all movement ceasen in the rank; that when any man is directed to dress up or back, the men who are mot dewignated do not move.

## Alignments.

141. The recruits having learned to align themselvee man by man. the iustructor establishes the base files and aligne the aquad lye the commatuls: 1. Right (left or center), ?. Drass, 3. Front.

It the command dress, the entire aquad. except the base files, moves forward and dresses up to the line as previously explained.

The instructor verifies the alignment and commands frout: at this command, all the men, including the base files. turn the head and eyos to the front, and drop the left hand to the side.
142. Alignments to the rear are executed on the same principles: the instructor commands: 1. Right (lefit or center) backertrd. 2. Drese, 3. Front.

The squad executes eyer right, moves backward, halts, a little in rear of the fine of the base filow, and immediately dresses up by stepof two or three inches.
143. To exocute the alignment using the side step, the instructor establishes the base files a few paces from the rank, in line with it. and commands: 1. Right (or left) step, 2. Right (or left). 3. Dress. 4: Fhont:

At the command dress, the men execute the side step. close toward the base files and dress as already explained.
144. When the squad dresses quickly and well. the ruide alone moves to the poiat, or without learing the rank, places his shoulders in the direction indicated by the instructor.
145. In dressing, the first two or three files are accurately aligned as quickly as possible, in order to afford a base for the rest of the squad. This rule is general.

## Marchinga.

## To March in Lifte.

146. The squad being correctly aligned, the instructor commands: 1. Forictra, 2. Guide right (left or water). 3. March.

At the command march, the squad steps off smatly, the suide marching straight to the front.

The instructor observes in marching in line: that the men preserve the interval toward the side of the guide; that they yiold to pressure fròm that side and resist pressure from the opposite direr. tion; that they open out neither arm; that ly slighty shorteniais or lengthening the step they gradually recover the alignment, and by slightly opening out or closing in, they gradually recover the interval, if lost; that while habitually keeping the head direct to the front, they may occasionally glanee toward the side of the guide, to assure themselves of the alignment and interval, but that the head is turned as little as possible for this purpose.

The instructor will impress upon the men that the alignment and interval can only be presersed by uniformity in the length and cadence of the step, and by keeping the shoulders square with the line of direction.
147. If the men lose step, the instructor commands: Step; at this command. the men glance toward the side of the guide, retake the step, and cast their eyes to the front.

## To March Backicard.

148. Being at a halt. the instructor commands: 1. Buckicard. 2. Guile right, (or left), 3. March.

To March to the Rear.
149. Being in march, the instructor commands: 1. To the rear. D. March. 3. Giaile right (left or center).

At the command march, given as the right foot strikes the ground, advance and plant the left foot: then turn on the balls of both feot, face to the right about and immediately step off with the left foot.

If marching in double time. face to the right abont by taking tour short step. in phace. keeping the cadence, and then step off with the left foot.

To March by the Flank.
150. Being in line at a balt, the instructor commands: 1. Right (or left). 2. Face. 3. Formart, 4. March.

If marching. the instructor commands: 1. By the right (or left) mank, ㄹ. March.

At the command merrh.given as the right finot strikes the ground, advance and phant the left toot, then face to the right in marching and step off in the new direction with the right foot.

In the march by the flank. the men cover as in file and keep closed to firriug distamer, that is. to such distance that in forming line there will be an interval of six inches hetween dbows.
151. To halt the column of tiles. the instructor commands: 1 . Squid, ㄹ. Halt: and to face it to the front, B. Left (or right). 4. Face.

Marching in column of files to march in lise, the instructor commands: 1. By the right (or left) tank. 2. March, 3. Guide (right, left or center).

## To Chanye Direction in Column of Files.

152. Being in march. the instructor commands: 1. Column right (or left), or, 1. Column hilf right (or half left), 2. March.

At the command march, the leading man, shortening two or three steps, wheels to the right, or half right, over a quarter or an eighth circle whose radius is akont cighteen inches; the other men follow the first and wheel on the same ground.

## The Oblique Marih.

153. Being in line at a halt, the instructor commands: 1. Right (or left) oblique, 2. March.

At the first command, the men half face to the right.
At the command march, they step off in the obligue direction and preserve their relative positions by glancing alons the left shoulders of the men toward the side to which they are obliquing. and by regulating their steps so as to keep their shoulders alway parallel to, and in rear of those of the man next on that side. and make his head conceal the beads of the other men in the rank: the line of the rank remains parallel to its original position.

The squad is halted by the commands: 1. Squad. ㄹ. Hal.t.
At the command halt; the men halt. faced to the front.
If marching, the men half face to the right in marching. and move off in the new direction at the command murih.

To resume the original direction. the instructor commamis: 1 . Foricard, 2: Marce.

At the command march, the men half face to the left in marchsing and then move straight to the front.

If marking titne while obliquing. the oblique marrh is resumed by the commande: 1. Oblique, ㄹ. Marci.

The short step will not be used in the oblique march.
15.4. In the oblique march, the guide is always without indication on the side toward which the oblique is made. On resuming the dirent mareh, the guide is without indication on the side it was previnus to the oblique. If the oblique be executed from a halt, the guide is announced on taking the direct march in line. These rules are general.
155. The column of files obliques by the same commands and means; the leading man being the guide.

> To March in Double Time.
156. Being in line at a halt, the instructor commands: 1. Furuard, 2. Guide (right, left or centre), 3. Double time. 4. Marci.

To Pass from Quick Time to Double Time, and the Reverse.
157. The instructor commands: 1. Double time. М. March.

At the command march, given when the left foot strikes the ground, adrance the right foot in quick time, and step off with the left foot in double time.

To resume the quick time, the instructor commands: 1. Quick time. 2. Marth.

At the command marih, given as either foot is coming to the ground the squad takes the quick step.

## treming.

## To Turn and Halt.

158. Marching in line the instructor commands: 1. Squad right (or left). ․ March, 3. Front.

The first command is given when the squad is three paces from the turning point.

At the command marh, given the instant the nquad is to turn. the man on the right balts and faces to the right: the other men half tace to the right in marchings and without changing the lengeh or cadence of the step, place themselven succensively upon the alignment established by the pivot man: all dress to the pivot without command. The last man haring arrived on the new line, the inatructor verities the alignment from the pivot flank and commands front.

If at a halt. the morement is executed on the name principles: if at the order and the movement is executed in quick time, the pieces are raised slightly: while in motion.

Squad half right (or lift) in executed in the same manner. except that the pirot makes a half face to the right.

> To Turn and Adrancr.
159. Marching in line the instructor commands: 1. Right (or (rit) tur". $\ddot{O}_{i}$ Mabch.

The first command is given when the spuad is three paces from the turning point.

At the command morrl, given the instant the squad is to turn, the man on the right marches by the right flank and moven forward in the new direction without changing the length or cadence of the step; the other men half face to the right in marching. and moving in double time by the shortest line, successively place themselver on the new line. when they resume the step and cadence of the pivot man.

If marching in donble time the men must increase the gait in order to arrive on the line.

If at a halt, the man on the right marches in the new direction at quick time unless the command double time be given.

Right (or left) half turn is executed in the same manner. except that the pivot man makes a balf face to the right.

## MANEAL OF ARMS.

160. The manual of arms is executed as explanined in the Individual Instruction.

## THE FIRINGis.

161. The commands for firing are the same whether the squad is standing, kneeling or lying down. The commands for kneeliner or lying down, precede the commands for firing.

If the cartridge box is worn, it is slipped to the hip after executing the preparatory command, and is opened if necessary: it is closed and replaced after executing cense firing.

## $\pm \quad$ Volley Firing.

16:2. The squad being in line fronting the object to le tired upon, pieces loaded, the instructor commands: 1. Fire by sofucd. 2. At (such an object), 3. At (so many ) yards. 4. Syinid. j. Reiny. 6. Aim, 7. Fire, 8. Ioad.

The commands are given with sufficient intervals to allow them to be executed as already prescribed. The command fire is given when all the pieces appear to be steady. These rules are general.

To fire another volley at the same objective, with the same line of sight, the instructor commands: 1. Syuad. 2. Ready. 3. Aim. 4. Fiae, 5. Load.

To fire another volley at the same objective, but with a new line of sight, the inatructor commands: 1. At ( so many ) y/ards. .2. Sfurd. 3. Ready, 4. Aim, 5. Fire, 6. Load.

To fire another volley at a new objective and with a new line of Night, the instructor commands: 1. At (such an object). 2. At (w) many) yirds, 3. Syuad. 4. Ready, 5. Aim. 6. Fire. 7. Load.

16:3. The objective and range will be indicated in the preparatory commands for all kinds of fire, as illustrated in the examples just given. This rule is general.
164. If the objective is at more than a slight angle to the front of the squad, the instructor will change the direction of the squad so as to face it. This rule is general.

To Cease Firing.
165. The instructor commands: Cease Firing.

At this command, the men stop firing, draw cartridge or eject the empty shell, lower the sight leaf and take the ponition of order arms, order kneeling, or the position lying down. as the case may he.
166. The command (or sirnal) cease firing is always used to stop the firing and is given at any time after the first preparatory command tor tiring. whether the firing has actually been eommenced wr not. This rule is general.
167. To stop the firing and cause the pieces to be loaded. the invtructor commanils: 1. Ceane Firing. 2. Load.

The firing will stop and the load be executed as heretofore preorribed, such pieces as are already loaded. will be brought at once to the position of loak.

The effect of this command is to stop, the firing ret leave the - fand with loaled arms. prepared to tire again immediately, am is intended to be used to interrupt the firing for the purpose of steadying the men. or to change to amother method of firing. The pieces may then be brought to the order. by command.
To F'ire at W'ill.
lise. The instructor commands: 1. Fire it will. .2. At (nuch an object ). 3. At (so many) yudd. t. Syuth. 5. Reaby. b. Comnence Firing.

At the sixth command. cach man, independently of the others, . takes careful aim at the object. fires. loads and continues the fire as mpidly as is consistent with taking careful aim at caclo shot. The men should be taught to had rapidly and to aim deliberately.

At the command cotse fring. each math will immediately ntop firing and listen attentively for turthor commamis.

## MANCAL OF THE PISTOL.

16i9. When a lanyard is usend. one end is attached to the butt of the pistol: the other end forms a sliding lowp which is passed over the head and drawn snug apainst the risht armpit. The langard should then be of just suth length that the arm can be extended without constraint.
170. The pistol being in the holster. to raise pintol. The instructor commands: 1. Raise, 2. Plstol.

At the command raise, unbutton the loolster fiap with the right hand and grasp the stock. back of the hand to the body.

At the command pistol. draw the pistol from the holster, reverse it muzzle up, the hand holding the stock with the thumb and last three fingers; the back of forefingor pressed against the inside of the front of the guard; guaril to the front; barrel nearly vertical; the hand as high as the neck and six inches to the right and front of the right whoulder. This is the pasition of raise pistol.

When dismounted, carry the right foot about twenty inches to the right any place the left hand in the position of the bridle hand.
171. Being mounted and at the position raise pistol, 1. Lamer. 2. Pistol.

At the command pistol. lower the pistol without changing the grasp, and rest the hand and pistol on the right thigh, back of the hand up, the muzzle about one inch in front of the right knee.

When dismounted, lower the pistol without changing the grasp of the hand and rest the wrist against the right hip, back of the hand to the right; the barrel inclined to the front and downward at an angle of forty-five degrees.
172. Being at raise or lower pistol: 1. Return. 2. Pistot.

At the command pistol, insert the pistol in the holster. back of the hand to the body, button the flap and drop the hand by the side.

If dismounted. bring the right foot by the side of the left and drop the left hand by the side.
173. Being at raise or lower pistol: 1. Prepare to load. ㄹ. Loal.

At the second command, place the pistol at the cylinder in the left hand, the barrel inclined to left front and downward at an angl.of about forty-fiye degrees. half cock the pistol and open the gatewith the right thumb; if necessary, eject the empty shells, working the ejecting rod with the foretinger of the lefthand and turning the cylinder with the left thumb. the right hand holding the stork: take. a cartridge from the box or belt, insert it in the chamber. press it home with the right thumb, close the gate with the right foretinger. lower the hammer and raise pistol.
174. Being at raise or lower pistol: 1. Ready. 2. To the front (or Right oblique. etc..) or 2 . At ( wuch an object).

At the command roady. place the right thamb on the hammer: at the second command direct the eyes to the front. or toward the object indicated.

## Fire.

175. Thrast and point the pistol to the front, or toward the objective, arm about three-fourths extended, at the same time cocking the pistol ; fire without pause or any effort to align the sight upon the objective; after firing pause an instant and resume the raise or lower pistol according to the position before firing.

When mounted, lean slightly forward bearing on the atirrups: in firing to the front, lean well to the right and slightly forward ${ }^{(1)}$ avoid burning or frightening the horse.

To continue the firing in the same direction or at the same objectire, the instructor commands: 1. Ready, 2. Fire.
156. In a similar manner the men will be instructed to fire to the left. right. right oblique. left oblique, right rear, left rear and rear. When tiring to the left, the pistol hand will be about opposite the left -houlder: when tiring to the rear or right rear the shoulders will be turned about fortr-five degrees to the right; when firing to the left; the shosulders will be turned alout forty-five degrees to the lef.

1:7. The recruits are first taught to load and tire without using cartridges. Pointing practice will habitually be given mounted.
F 1 is. When cartridgen of any kind are to be used, the instructor commands: 1. With (somang) dummy (loth or blank) eartridyes, ?. Prepart tillond. 3. Lcalb.
To Fire at Will:
179. 1. Tu the gront. etc.. or 1. At (such ann obigect). B. Fire at will. 3. Refdy. 4. Commence Fibing. a. Ceane Firing.

The trooper tires an rapidy an in consistent with carctial pointing at each whot. The ratise or lower pistol is rexumed after each whot.

1so. Habitually the pistol will be loaded with only tive ball cartridges and the hammer lowered on the empts chamber.
181. The practice firing will be conducted on the principles ex. plained in the Firing Regulations for Small Arms.

18:. 1. Inspertion. 2. Pistol.
At the command pistol. execute as in raise pintol. except that the pistol is held about six inches in front of the center of the bolly. harrel pointing to the left front and upward at an angle of aboint tiorty-five degrees. wrist straight and as high as the breast.

The instructor pares along the rank and examine- the pistols. To inspect the pistel minutely, le takes it in his hands. and then returns it to the trooper who erasp it at the store and resumes in--pection pistal: each trooper returns pistol as the inspectur passen to the next. It the pistols are not inspected they are returned by the commands: 1. Keturn. P. Pistol.

## PROFESSIONAL NOTES.

## bUford's line at gettysburg.

In the November number of the Jocrnal it is stated that there is nothing to mark Bupord's line at Gettysburg, where he wo gal. lantly held the position on the first day until the First Corps came up.

At the present time the Ninth New York and the Third Iowa have monuments there; the Seventeenth Pennsylvania has one under way, and on the 1st of July, my old regiment. the Sixth New York, will erect another. Our monument will cost nine thousand dollars and will be a very handsome memorial.
w. L. heermance,

Formerly Colinel Sixth Neew York Cavalry

## REVOLVERS AND THEIR CALIBER.

In discussion of the various points concerning revolvers and the. proper caliber for that arm, the following brief notes are submitted

In 1882, I saw a Colt's revolver, caliber 45, emptied into the back and lega of a buck Indian, and he did not stop running; he. limped somewhat, it is true, but was not "shocked" severely. The revolver was fired at no greater distance than five yards and once or twice closer.

Being somewhat surprised by this circumstance, I experimented on a young wild animal, riding alongside of it for the purpose. Myfifth shot dropped it, I holding the muzzle of the Colt within a few inches of the animal's head. Upon skinning the animal it was found that four of the five shots had just penetrated the hide.

By inquiry it was ascertained that the powder used in that lot of cartridges was some that had been obtained from the old paper
(artridges remaining on hand ater the war. 1sith-din. For mome years after that I purchased my revolver ammanition, or until the old stock was exhausted.

Later I have experimented with similar results with carbine ammunition manufactured in 70 . In 83 it was worthless. Ammunition of the year 1876 was practically worthkes in last. Perhapse a majority of the whots would be carried well up; but enough of them wonld drop, and drop badly, half way at 200 yarids, so as to thoroughly discourage average marksmen.

I think the result of the next war might be reasonably assured provided we might furnish our opponents with seven year old ammunition while using fresh powder ourselves.

The improved revolver recommended hy Captain Hall. or perhaps an improvement upon that, brought out by our practical work, trom which we hope so much, we must have for the mechayical neressities of firing from the horse in motion.

It is my opinion that if tresh and good powder is bebind the bat, a well-phaced shot from a $3 x$, or even 36 caliber revolver can stopan antelope.
gEORGE H. MORGAN,
First Lieutenant Third Caralry.

## TIE GERMAN CAVALRY AT THE MPERIAL MANEUVERS.

[ From "The dierman Imperial Maneuvers," by Captain J.F.Manimble, K. A., in the pro:cediugs of the Royal Artillery [nstitution. March. $1 \times 9$.

Saturday was almost entirely given up to the cavalry; twelve regiments taken from both corps represented the eavalry of an army advancing from Frankfort on the Oder against a skeleton cnemy retreating on Berlin through Müncheberg. The former force was commanded by the Emperor; the regiments were in great -trength, as the fith squadron, which, in actual war time would be lett as a depot, was-during the maneuvers - with the service "quadrons, so that the Emperor had sixty squadrons under his command. The strength of each squadron seemed to average about "ne hundred and twenty-five sabers. Owing to the eloull of dust it was "xtremely difficult to follow the movemente, and if this was difficult tire a apectator much more so it must have been for those who were in command. Directly regiments and squadrons broke into a trot they were at once lost to view, clouds of dust alone showing their
position. . It the conclusion all twelve regiments formed in column of squadrons, in two lines, with three horse artillery hatteries on the right flank. and an adrance was made alternately at a trot and gallop tor three miles. The artillery then took ground to the right and having, by so doing, gained the summit of some rising sronnd. they came into action and supported by their fire the cavalry. who at the same time executed a charge in full foree on the flak of what was supposed to be a wavering enemy. The day ended early, hat the work done by the horves had been too rapid to last long. The natture of the ground to the wouth of Mincheherg. het ween the villagen of Eggersdorf, Templeherg. and Buckholz, is at this weason at larse plain cleared of the standing corn, not a diteh or a tence tw he seen anywhere, so that cavalry and artillery could move at any pace athi in any direction, and let a horse gallop as he might he could never injure his legs. The dust was extremely had. and owing to it. a few accidente occurred. two regiments cominer into collision: such an accident is very fare with German cavalry. The arrat point which strikes one at once is the perfect eontrol which every trowper has over his horse. men are not seen tighting with their horses to keep them back.and a regiment will pull up within twenty paces of the opposing force. I heard an Englisla officer somewhat shrewdly. remark that this might in actual warfare prove detrimental to the dash and spirit of the horses, but that I would doubt. and certainly the gain of having horses under such thorough control would compensate for a great deal. Individually, the German cavalry soldier is an inferior horseman to an English trooper: men when on detached work, such as orderly duty. do not strike one as being arool riders, but it is eollectively that they shine: no matter what the pace, the ranks are well kept, one horse does not move faster that another, and the men are always knee to knee. The heavy reximents, the Cuirassiers and Chbans, are componed of big men with brole and ninews; they are well mounted, and. to my mind. are the best drilled arm of the service. The French may have mate great improvements in their cavalry, but if they again meat men of this weight and build, and well-mounted, they will find that the extrat size and weight of the troopers which oppose them will be ditficult

- to counter balance, even if they equal them in irill and discipline. After this last charge the officers were called to the front. and atter the usual criticism the Emperor and hivataff took up their position on some rising ground, and the caralry and horse artillery went past at a gallop. Owing to the dust the nquadron interval was doubled so that a very fair view was obtained, where otherwise
there would hate been clouds of dust. In Germany each reximent is played past by its own band, and the general eftect is much increased by the manner in which the band gallopsabead of the regiment, till it arrives a little short of the saluting point. when it in. clines to the left and is in position opposite the saluting point in time to play for the leading squadron. On thi occasion the Emper ror rode past in front of the horse artillers. alld the Srand Jluke Nicholas with the regiment of Cuirassiers, which he commands. It will be extremely ditficult to make athy distinetion betwent the stoadiness of any of the regiments of either corps: tolity mind the most effective wan the Zeith Hussars. This was the favorite regiment of the late Prince Frederick Charies, and H. R. II. The Dtike of cossaccint in bow its hoiorary colomel. It towe a leadinge part at Mars-la-Tour, where, ath officer formerly ot the regibent tobll me. that the lons was 170 men and 200 horses: the uniform. red and silvar. looked verv handsome.
$r$ The most striking feature of these maneuvers has been the lead. ing part played by the cavalry; every day it was arranged that by borrowing and interchanging there should be cight covalry regiments with each army erorps. and their work was not continell to seonting and eovering the advance of the army. but the greatest importance was given to the working of them in large masens. Nince the days when hattles were fought out by cavalry, under such leaders as Smplaty. larger forcen of caralry than those which were brought together on the day of the cavalry maneuvers have selifom. if ever. been assembled and handled as they would be on the actual fied of battle. The rase with which this large force of sisty squadrons was maneuvered. and the precision with which its component parts moved, reflected the greatest whill on the part of the leaders and aceuracy of Irill and disejpline on the part of the men. Judging loy the masken in which the cavalry moved. and the effeet sought for from their charges, much more is expected to be dome ly e whock' than is sulp posed. The front of armies will now be completely covered hy cavalry, and their great role will be to prevent the enemy discovering the movements of the main bodies in rear. while they thrust themselves throngh a similar veil of cavalry which eovers the enemy. so that the first phase of a campaign will mont probably see a great cavalry engagement. I The Fromeh are mow doing all they "an tobloring their cavalry to a high state of efficiency, hat they are still a long way behind the Germans. The latter are much finer
men, and have better horses: to us the horses may appear light and wanting in bone. but they show a good deal of breedins. and their endurance is beyond question.

Most of the horses for artillery and cavalry purposes are bred in the great government studs in East Persiat in some of which there are as many as 1,300 brool mares, and the result of the introduction of English sires athl the purchase of brood mares in our Irish fairs is being chayly shown in the chas of remounts now produced.

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steay PREN of кetcheson * reevex. Leavenworth, kansas.
 In the leges and feet they are so arranged at to eradmaliy take up. . tramsmit to the rest of the berty. the shooks which are c.ontinnally. recurring as the animal walks. runs or jumps. Merhanimally anh sidered then. the homes fiout is a combination of - prinse and lever By the fine." unferstand that the whole stowture trom the. ..

 atl this belonge to the toot preperly ath that the howt is simply the. toe though gemerally callewthe liort.
 which are hat simple lever lige the aid whith the home jork

 their tembons. They atorare plated in commertom with the reat of
 step at the various raits.
 long. Comparatively wak man can mene heary mawe be the aid of levers of a certain order. athl he raniler that the time ran. sumed is amply repaid by the end acomplialud. Bun -unh lever

 the reverse of these usen by man in hi work with heary manor must be used. aren though the timer berowary formbuer ollo motion be latuely in excess of the eftert. Sheli lever we tint in the lexs and tied of the hoper and all where amimats.

We, therefore have the hant at the emb if at - - -tom ot bevers atuated by arrings and ad working thather to beat the horse weight when standinge to propel him twwant we hekwan when
 due the least shock. tatigue and wear th his mbernee and vitality

Now let us comsider the boot anatomically to ser what nature han
 trame upon which the toot is built and arouml which are srouped all the multitudinous parts.

This bony frame consists of tirst the "athmon bene" which ex tents downward from the so-ealled knee in the fires and the how in the hind leg. Below this comes the . bong pitstern." then the. "short pastern." and last the ". cottin bone." These tour bones ate articulated together in the order stated. the joint in cach case beitus of such a nature as to readily admit of motion laterally. but mot
 able nat mer of the motion tor which prowison in mathe, sivine to the

 wore sideway

Behind the artiontation of the Shert gatarn and the cottin lome we



 ...ttint bolle.










 jer. 1.











fomber mext th what is sermerally matled the then. i. .. the tore.


 or toe wan simpiy an incernate maso of horn to he carved. whithend. ratop and burned with pertert impunity. How far is this true and how fir talse?

The coffil bone forms the base of the horses toe and about it are grouped all the array of parts which have their office in producing the hoof.

Conderneath the seat of the flexor temion and its union with the coffin bone we have the "plantar cushion "or "soft" or $\cdot$ 解ty trog." It is directly within and shaped like the "horny" or "external frog." Between the two the "inner" or "sensitive sole" extendover the entire interior surface of the bottom of the hoof. The fattyfrog, the inner sole, and the inner wall of the hoot are permeated everywhere by a ramified nystem of arteries and veins. They are also most exquinitely sensitive, being tilled with nerves in all direr. tions.

Externally we have the "horny trog." the "outer sole " and the "outer" or "horny wall" of the hoot. The upper lworder of the latter is surmounted by the so-called "coronary ring" which secretes the horn of the wall.

We thus have ultimately a hard, horng box. forming the envelope which covers and protects all the parts surrounding the cottin bone. and which first receives all the shocks to which the toot is subject.

Now this horn of the hoof. the maik on our fingers, the hair on our heads and the skin on our bodies are all one and the same thing under different forms. Nature gives this material the form best suited for use in each case, and in the horse's toot it is composed of hair-like fibre parallel with each other, projecting downward from the coronaly ring which secretes them. They are all compacted together so as to form a dense, hard. almost impervious wall e.ternally, so as to be well titted to withstand either use or injury. This wall is not absolutely impervious. as we know that it soaks up oil. grease or water, placed thereon. But internolly the structure is sott and spongy, and full of a moisture of its own. The hard horn of the exterior shades gradually into softer horn, until we arrive at theinner wall. The external wall is generally considered non-sensitive and it is probably so on the immediate exterior but the depth of this non-sensitive part probably varies in different horses amb in all is probably much less than is generally supposed.

All who are familiar with the appearance of the under side of at mushroom will have noticed the delicate tolds with which nature haw formed it. So it is with both the external and internal walls of the hoof. The interior of the external wall and the exterior of the internal wall, are both formed with just such delicate folds. There are something like six hundred of these in both the external and internal wall.

This inner wall is sensitive even to the most remote edge of the most delicate fold. It is highly surcharged with blood and as these tolds intermesh with the external wall we can see how little margin there mayb be in the latter hetione it berins to he sensitive. All who have had teeth filled know how exguisite the pain of the operation. even when far removed from the seat of the nerve. We all may have had wedges between our teeth to separate them. and if so, we know the constant dull ache from their presence. How must it be therefore for the foot when a mail is driven into the non-sensitive wall and "lmost but not guite touches these sensitive lamina? Decidedy uncomfortable even, if not abolutely painfal. the horse would say it he could talk.

Besides the pain which may be caused, we must consider the nail driving from another point. It opens a vent for the escape of the natural internal moisture not only by the hole but by the splitting apart of the hair-like fibers. This escaping moisture dries up the imer part of the external wall, deadens the cushion and causes a stiffuess to all the motions of the internal foot that certainly should not obtain.

To go further. let us smear the hoof with grease. oil or blacking. as so many do to make it look pretty. The hoof aboort this foreign material. all of an oxidizing, heat-producing and moistureaboorbing nature, and again we have deadened our cushion apd disabled our horse. At first the damage may be but slight bukan time grees on the effect begins to be seen.

So much for the wall ot the foot, next comes the sole. As the toot must sustain weight we should expect nature to form it so as to be able to bear pressure from above downwards and a corresponding pressure from belew upwards. Hence we find the bones protected underneath by a large and suringy cushion, while be. neath this is an arehed sole and another cushion. In the natural toot. the external wall comes down to a strong. sharp and comparatively thin edge. We find a large and springy cusbion that bears upon the ground and that is fitted by shape and testure to give a tirm bearing and we find the external wole closely united to the external wall. while this latter wall is bent inward at the heels, forming the bars. Between these bars is the frog, the wbole forming a surface inherently strong and suited to give a tirm grip upon the surface our horse may stand or work upon, to prevent his slipping or to propel him forward.

Now the pressure of the horse weight tranmitted downward through the bones of bis legs. ultimately reaches bis coffin bones.

In each fiot this cottin bone transmits its pressure. firal th the inhere troger then to the sensitive sole. then in turn on the culter sole. the fros. bars and edge of the external wall. It would be insturetice t. measure the pressure per square inch that is distributhed ower the entire external foot. But it is enough to says. that the preware is
 move or impair any one part and you at moe throw an malue hame of the burden on those left. . ('ut away the hars. . pare down the fros." "pare out the sole till it gives to the pressure ot the thumb. "cut away the wall." .. open out the heds. and what have youl heft for gour horse to stand ubon? Xothing hut the inher tiong. the
 of the wall. The external frog beals mo preane as it dew luit touch the ground after trimming and shoeing.

The horn of the sole is less dense than that of the wall it is mome flexible and pliable and is fitted to sustain both weisht anil wear. It has the peculiarity of shemping of in hakes as new horn is formend from within and hence mokite is ever meded to remowe it. like
 its purpose in forming a cushion is the same.

Like the inner and outer wall. the inner andruter whe ate inti. mately connected: cut away the sole and you not only come upon softer horn for the horse to treal upon. hut as yon expese this .ott horn to the air and denole the foot of so moth natural moverine. you open up a vent for the exape of moisthre. calloce premathre hardening of the horn, dealen your coshon and introluce a dan. gerous exposure of the inner sole.
 it also comes away in Hakes as the natural wear is repheni-hed. and never needs a knife. Pare it and yon at obre produce the satme resultes as those described with the sole and wall. Kerep it firm presure on the rround and you at one impair it fumetions and deprive the horse of a part of natures apmatus tin preventine sloock or slip.

Having now considered the horses tiont. beth meehaniatly and anatomically. let us ghance at it as a mealls of suppert athl heromo. tion. We see at once that the fire legs are mainly weight hatro and that the hind legs are formed for propulsion as well is weight bearing: consequently the fore feet are latger. mone nearly diroular. and form the extremities pt upright columns. that when our horse is standing are rigid from the pastern to the elbow and Hexible at the pastern and rbore the elbow. The hind feet are smatler. more
manly wal in wape the lenarthereater than the withb and they are
 artionlationsot then lever trom the hif dawn th the pantern are all whligue and - Prinas and never rigid




 the fore tixt hate pewner ars ast melion in themedere hint it is


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These repated how - heing taken up be the internal structure of




 The Ereater ihe supply of haol then the mome rapidly is the wate
 is heine worn anay.

There is more than this: unter the stimulas of artion and the

 harthe Hint. abd more and more suited to withotand wear until at
 "f material heitus eynal the demand and the waste is supplied without any undue strain upon the circulatory organs.

This is not mere theory; we see it everrwhere about us. The high-born dame may find that nature has only supplied her delicate hands with enough blood to make good the trivial waste that went on while she pursued such hight work as suited her taste. but let her use the broom or scrubbing brush, and at first her hands may blister, but under the stimblating action of her work the necessary blood will be supplied and her hands become hard at last. So with the athlete, griping his oar. or handling clubs: so with the "horny handed sou of toil," and so with all. both man and beast.

A recent article in H\&rpor: Magazine tells us of the travel and work performed by the West Indian female porters. They travel barefooted, earrying weights up to one hundred and titty pounds. over distances ranging as high as fitty miles a day. This is a regular task, and no mention if made of any of these porters being laid up from becoming sore-foloted. On the contrary. We are told that "the soles of ber feet are toughened so as to feel no asperities and present to sharp pebbles a \{urfuce at once vielding and resisting. like a cushion of solid caoutchouc."

Now if the human foot can stand such work uninjured. up bill. down dale, over a hard graty limestone highway. then why camot the horse's foot do the same? It is fitted by nature to stand just such work. It has a large, tough, springy cushion in its froy upon which to tread-a cushion that will wear out no more rapidly than the bottom of the human font; the horn will become hard and tough if properly treated. and as able to stand wear as the human foot.

And who has not read of the custom of the European peasants when traveling to marketp They carry heavy loads for long distances, and travel baretooted until about to arrive at the market place. Then only do they put on their shoes so as to complete their holiday attire. They habitually work and travel barefooted, and only wear shoes for drese accasions. Their economy and thrift prerent the useless wear updin shoes that are an expensive luxury. Hence man when used as a beast of burden will travel uninjured with nature's apparatus; so also may the "quick moving noliped." if man will only let nature|alone, or assist her properly. Thus nature in ber own way provides ber own remedies, and under (") (ircomstances of proper use is an artificial protection necessary. pr"vided the joot is left as naturn made it anl due cure is e.rervised to mail. tain it so.

The time when first the horse was brought under man's dominion is lost in remote antiquity. Whence he came is also obscure. C'er-
tain it is that through all historic time he has been domesticated and it is reasonably certain that he originated in the wilds of central Asiat. The time when he was tirst shod is also uncertain. but it is placed by some writers as late as the fith century of our present era. He was certainly not shod by the ancients. and for thousands of yours he was uncursed by knike or rasp.

Why then whold he be shod now? Has his foot undergone a dhange with the lapse of time? Did he go limping, halt and lame tor thousamts of years? Lo our wild horses of the plain and mountain carry equine tarriers in their herds? Verily. we must look to other causes to find the reason fire the tirst shoe.

Natures supply of material does not cease when there in no demand but the horee, used in a low meadow country. will have a moint and soongy hoot: It will abob be broder and flatter. the better to -utain him from sinking into the soft groumb. Hexe there is but little waste and bence the hoot becomes soft and nature enarges the foot to fit it the better for existing conditions. This is not done in a day. but that it will be done in the end can admit of wo doubt. The horse's toot under these conditions is only titted for a lowe and wott sibil: if used thereon and only thereon hisefeet will stand the wear and tear without shoes.

But mans requirements compel his use where occasion calls. Man has found it necesary to improve his roads until they are as hard as iron. and all soil is not sof or free from stones. Now take the sott, but perfectly natural loost and use it on an iron wad or rocky soil and what then: The soft horn then coming into constant contact with ground harder than itselti rapidy wears away. Sature is not given time to repair the undue waste and finally a lame borse is the consequence and hence the tirst nobe. Mon" i/ his megtect if the elonged cumbitions assigns as the reason for the lameness what he considers whe the inability of the boof to sustain the wear without an artiticial protection.

This unnatural use of the horse corresponds to the every day treatment of colts. Thes are turned out to pasture to run with the mares on turf and low meadows and grow up with soft hoots and then. being broken and pat to work before any eftort has been made to harden the hoof they berome lame if they are not shod.

We see it gravely asserted by many modern writers. that the houf *hould be suft "nd spongy to he naturel and our Army. Regulations were for years disgraced by a paragraph containing instructions for the reckly stufting of a horse's feet with a mixture of wet clay or cow manure. And what for pray: Because the idea prevailed and still
prevails that a hord loout is muatmial and theretione must be stutterl to keep it soft. whereash traced back to his barren home. in the desert wastes of central fisia. on the sambs if Arabia amb merthern Egrypt we find the horse as nature malle him. livins in a hot. dry air. on a flinty swilfand his tiont as it should he. hird and deme. hiom and small. able to stande the wear and tear of the woil apmon which he. is bred and certainly ably tw work upon any other.
 rent lameness. becaltse of the strmeture of the intermal timet. It is argued that it the hoot if left hatel it will comtrate and pineh the. imner foot. It is clamed that moisture and sothere are meromat? to assist nature in providing the neerosary cu-hions te take up-ha.ek. ete. These arguments ane mot hased on a proper matioation ot the hat ture of the horse's foot and the mammer in which it shald pertiom its office. The internal pinisture is provided to kew fle inher wall. and its union with the ofter wall, wott and Hexible. ambl nature ar.
 exterior surface of the eqtermal wall amb whe are mand ham amd tough. not ouly to be ahle to withetalld wear or injure but al-a t.. prevent the unnatural eqapmation of the moisture ot the imternal thot.

And with ourselves, thonsh we mat hathe athd wanh our fien and bodies, for what do we difit? Does the athlete bathe tw wothen his muscles? Doses he soak his hathes to rember them wot athl ... tit them for his work with ofar or his grmanstic aplamatus: Dars the

 tersoften his skin so as to render it able to stand the blow- her mat receive in his next enconpter: On the comtare the hath in arti canse is wisely regulated on cleanse alld make heathy the -kill: t.

 as is the conse when we solk or stutt the horses teret.

That moisture is forei po the mature of the external tion at Her horse is abundantly proverl hey his matural habit when left w. . hitit for himself, unrestrained fy angthing but the bomats of nature, Wi. all know how dainty the porse is as to wetting hic feet: bis timt is not formed for moist or darshy ground and he intilltively wels the hard upland rather then the soft meadow. With clowen hompiol animals all this is difterept. How often do we see the lagy kina standing deep in marsh. fearlessly seeking such yround in proterener
(1) aths nther. knowing well that their teet will bear them up sately. and kop them trom tiokine tast.

 hime and that lived when their hatritat was mainly markh. and they


 Tloe key th this whifle matter then is to ary nature sive the horse
 orlvel the whole proldem.




















 atire of the momble ete:





 -rviere surely: and mar modern idea- ate shown lig the new floors of the rable for the Artillery prot at fort Biles. These are of plank. the rery worst fowr a horse rath stand upon. instead of cobble-stones laid in cement and asphatt. as they should he.

It is refreshing to contemplate the great adrance which hav been made within two years in the theory and practice of horseshoeing. as shown by G. O., No 16, A. G. O.. 1888 . Contrasted with what has been, and as an eviflence of what might be. it is a wonderfulad, vance. Compare it to Denbab. Goopenorion, and to our tacties and regulations. which until recently were our only guides: compare it to Miles' system, and to any other except Fleminis. from which it is evidently taken, and we see that our horses at last have some lit. tle chance of being left unmaimed. We have hat to go " strp. further. drop the shop entirely, phie our stable Hoors and our pirket lines with cobble-stones, and we wif have then made all the atrance possible.

But unfortunately an order is one thing and its enforcement i. another. Taking the trice as a whole in consideration this order may be said to be unobserved. Less than six months ago. government blacksmiths could be seen whitting out enough ©ipis from a horse's feet to fill a forage cap. All of the old practices might be seen in vogue even though ay copy of the order was prominently posted in the shop where it was dqne. Recently a case occurred where the froys cere cut out complotely, bly direction of a tield officer of cavalry, and the acting veterinary of a regiment dechared that a borse sufficring from a sprain should hore his feet trimmed out. the bare cut atway and the frog pared off. ip order to cure him of lameness. This same acting veterinary declafed that the feet of all the horses in a hattery were simply monsurous, and all needed cutting down: whereas these feet are natura and perfect, they have not been shot tor years. they have been queursed by knife or rasp for monthar. they have the bars intact. the keels unopened. the frogs uncut. the wole unmutilated, and they an travel freely over anything.

The order in question minst be enforiod or it is as grond as a deal letter. Many a man in the mounted service has yet to learn that this order gives the trud way to treat a horses foor to prepare it tor shoeing. He must alfo learn to ober ordern. even though he has no faith in the method prescribed, and not till then will the horse's feet have a chanfe to become as nearly pertect as is possible with shoes thereon.

But, admitting that he order is obeyed and that the ummutilated foot is shod, let us see phat we will find. There are evils of horseshoeing other than thos caused by driving nails. Look at the fiot as a weight-bearing maflium and see what happens as the natural foot is placed on the grdund or lifted from it, and the: compare this with the effect when a shoe is on.

As all the parts act as levers, cushions or springs, and as all the weight is ultimately thrown upon the hoof. we should expect to see some change in form and size of our horny case when weight is thrown thereon or is removed therefrom. Hence the hoof is not bound together rigidly at the heels, and under pressure downwards it expands, and free from pressure it contracts. This expansion and counter contraction may be slight. but they neverthelese exist, and mainly at the heels. Now when the rigid shoe is ised in place and firmly held by nails. the expansion then exists also. but under what changed conditions! The external wall is bound to a nearly infexible shape, and the soft inner parts are repeatedly squeezed against the more or less rigid wall. and against the nails dricen therein. This evil has been recognized time and again by the efforts of inventors to find a shoe either with a flexible joint at the toe or to find a shoe that can be secured without nails, and leave the hoof free to expand and contract.

Our claim is therefore that even the simplest shoe. applied in the most rational manner. cannot be used without injury to the foot. Fleming recognizes this in his ". Practical Horseshoeing," but he wtill persists in using the shoe as the lesser of two evils, maintaining that the fiot mast be shod to stand the wear and tear of work. He utterly ignofes nature in his treatment of the foot. He distmes that the foot cannot stand going unshod, not because he has tried aud tailed with hoof properly prepared. but berause he never sees a foot unless it is one that has been shod. has been-abused by shoeing. and has therefore been put into such condition as to be unable at first to work without it. such an idea as making the hoof hard would appear to have never been entertained by him. and, secing that the horse with a cast shoe or with his shoes just removed always goes lame, he argnes that the shoe is necessary to prevent lameness. Whereas our claim is that the hoof needs no such protection it ration,illy and matur,illy troutrd, and that therefore all shoes are an unmixed evil.

In the greater number of systems in vogue in rivil ar well an military circles, and even under the system as set forth in the General Order above quoted. it is either held or practised that the frog mast not touch the ground. In Maes system. as laid down in Nolans "Cavalry Horse." it is gravely stated that the frog must be kept from the ground by the shape ot the shoe. or else it will strike upon and be bruised by the hard stones, and so produce navicular disease and incurable lameness. Other authors are no better, and it is useless to answer that these authors are obsolete: they repre-
sent what is done every day. for the ordinary she canmot be put on the ordinarily trimmed hout without raining the tions trom dhe

 of a pubcture of the toot, until atter lae was shoul. What sall allel empty argument it is co ehatrge nature with a blander men ather the




 as a coshion is prevelted: it loses the stimulas nature interado.
 its function tinally stops.

Sature phaces the hoot at the end at a long and helie:ate livere that demands lighteres the nearer we apporath the embl: liew het a- natil two pomals of iron upon the cold atal sere hew mulh exta work

 Ared steps in eight hours. fillil this mealis a tolal wightit of .o.e.
 ponnd shoe. Sothing eath be alsolutely kimwn as to the amomut it

 how must it be when the hope is trottine or ramine hiv lan W. see what a tremembons wast has heen impund "pon him. Nown der we see so many lexs wipry homes on a timeed mareh. Nown.


It is urged that even though mumerosaty on hate arommi. the horse must be "mugh" shet to work all the icy romb ot "inter
 is better able to workans slippere sround than the beat monsh - ha... horse that ever stepped. Hating hat persional experiellew on hio
 horse that had never beet chased by kniti or shoe. I rente him daty in the dead of winter to and from thererer whe are was heille ent The groust was covered with ine. The ride was at a harl sallop and sometimes at a run. bath and forth repatedly vath has. an-row country, and not on the heaken road. The harefinotel hare mever slipped. or showed any hofitancy in taking the ice. His hanel. sharp boof cut into the ice jas deeply as any calkin. his tions lure upon the ice ar firmly as af ruliber pail ani his strithe wan as fre.
and tearless as though on hare ground. One day this horse got the hest of his rider. and started on a run acress the Platte river, on comparatively thin ice. Twas mether time mor place to do anything clse but run. and with whip and spur away we went to get across without breaking through. It was a novel and mot particularly agreeable experience: but it taught a lesson how a horse could travel nin smooth ice barefooted. for there was never a slip or slide. hut the treest of rumbing

It will he objected that if' what has beell said above is true. why (d) we then shoc our horses? If our reasons as to the tirst shoe are accepted we see at once why the shoe having once been put on. and our horse fioct toreed to an artificial condition. it becomes necessary to kecp on shoning. for in the general cane our necessities do not give us time to let nature undo the mish hief we have wrought.

Fashion. conservatism, and general ignorance. all conduce to perpetaate the practice and to entail on the horse the paill and panishment that all shoeing causes. Half tried experiments and those male wittont a due appreciation of a hard hoof have aided more than anything else to convince the skeptie even against his will that -hoeiner is absolutely imperative.

As to the ignorance on the subject, any work on horse-shoeing will show that it is recognized by the protession. Consult. for instance. Woobs $\cdot$ IIorse and Man "to see that. " the managers of the R.S. P. C. A. have openly declared that they will prowecute any one who rides or Irives a horde without whoes. They refuse to make themselves adquanted with the structure of the hoot to listen to arfument or the examine proofs. Mostly they have made up their minds that to Irive a horse over hard roads without shoes would be as cruel as to make a man take off his shoes and run over the stones at once. sometimes they have consulted farriers. grooms. etc.. and of course have been told that a horse to travel roads unshod would be imposithle. because if the hard iron be worn away by friction the comparatively sot horn could not possibly endure the work." Flemina. Maynew and many others might be puoted in support of this to show the prevailing ignorance. prejudice and superstition on the subject.

Again it is perpetuated because it is the means of livelibood of a large clans of artivans. A great many believe that in shoeing the howe they are benefiting him as well as earning an honest lir. ing for themselver. Tradition, and the practice of the shop, confirms them in the belief, and they have no idea of painful and cruel abuse. What a general cry of cruelty to animaln and of rage at

 and nats would at whe be fost. The manataeturer and the arti-all who make them weold lonter their hasimes. Than the (.1.tom is

 What ehanee then does the horse hate asainat - 1 dh itherons:






















 the instructions as to horsentheinge. What the mew drill towlin the:

 for erippling a horse.

Among the arguments which are alvanced in tavor of - bundine it is said that man's won experience as a shom animal teathe him i.. slow his horses also. It isf salld that hecallse a home sene lathe on the removal of shoes they wost be gut hatk again heramod mandons the same. Such premises afe false and conseguenty the (xhellainiare erroneous. Man is a shof amimal becanse he is a civilizal animal : as such he wears clothes for hecency and for warmoth. The etermal it.




















 " |ons: :






Man 'an :





 at work.

 beat of the boot ath thereleg makes it codder instead of warmer in bur cold winter season. Son may say a horsers font is mon-sensitive to cold. No one knows this. but it truc. ha, is it so? It is through the mapil eireabaton that take- place throush the arteries and reins abrealy mentioned. Very well. this bood has then the
function of warming as well as building the foot. Take away from the natural warmth by the fipesence of a latge mase of a grood coll. ductor. constantly absorbing and dissipating heat: pare down the thin covering and permit the internal warmoth to be the more readily absorbed, and what then? Are we not depriving the foot of just wo much energy and preventing its proper building up. by an unnatural absorption of the heat from the blood leaving thereby but a small margin to keep up the growth and health of the foot?

That all this is not merenperulation will now be shown by a tew cold facts. Every day for hearly two years the writer of this has been thrown in contact with the horses of Light Battery • $F$." Fourth Artillery. All the old horses. but one have been unshod duaing all this time and the one shool horse has simply toreplati-s upon his hind feet to protect a weak and diseased hoot. the revelt of abusive shoeing. These howes stame at leant five hours a lay upon a picket-line an hard av broken stone can make it: mot a heot. except those of the one lionse mentloned, is diseased in any waty and there ate none but are no hard thot a knife will havely. cut them.

These horses have been drillel daily. Saturdays and Sumdays excepted. trom April to Nomber, at all gate and for at least iwo hours a day. Resides this ther have marched fiequently on all kinds of roads, atad during all thig time not a horse haw been siok or sorry from being unshod.

The method pursued in hardening these horses teet is that out. lined in these pages. A lot of new horses were received in July. 1888. The nhoes were remodred. the horses were put on the pickit line and almost all went lame at once. Toe-plates of steel were put on their feet and they were made gradually accustomed to the harl picket-line by frequently fenting them on a line not made hard with stones. They were af used more or less at drill during this time, and soon their feet bedgan to show a new form and to approath to natures model. The ffog grew and expanded and rested on the ground at every step: the sole became hard and dense: the walls became hard and tough. instead of hard and brittle: chipping stopped; the bars grew oft, and one by one the plates were re. moved, until now not one femains and these horses treal as fearlessly and as painlessly oyer rocks and stones as do the old oner. All this was done in less than six months, as the last toe-plate was removed by January, 1889 .

For several years prior to 1887 the old horses of the battery were shod and their feet regularly "atuffed" as required by the Regulations, during the drill season. but the shoes were removed during the
winter. From peroonat ohservation it is known that the pieket-line was of wht dirt. was wet. modly and shoppe and that no especial efiort was made to harden the horses tiet but the revorse, as shown be the - stutting.

In the spring of 1 sxi. the hores heing then mushod. they were left so at the begiming of the drill season. They wem drilled daily in this unshod combition on turt. the pieket-line rembining in the same soth comdition. During the smmer the battery marehed to Mankato, a distance of nitnery miles. The tiot pary of the romd being samly and oott. bu tronble was exprienced. hat the last part being hard and stong. the hoots began to break up. Arriving at Mankato. though nobe of the horsers were lame or timetsore, it was thourht lest to shere to atwid a possible disaster on the return mareh: hot the shoes were set without cutting or mutilating mole or frog. Wi the return to Fort suelling all the hind howes and aterater part of the front hoes were at once removed.

The battery hat to go to (hicaso in the carly fall. The horses Went as they were mostly unshod. and while there were severely used on parements. roads and turti tor something like three weeks. At one time the hattery marched at a rapid trot orer paved streets for about tive miles. tillowing a tronp of eavalry as the Presidents eseort. Sot a hoot was ered chipped as the result.

Returning trom Chicago. all of the remaining shoes were re. moved and have not since heen replaced. In the spring of lasm. the picket line was dressed with broken stone to a depth of nearly a fooct and the hoses placed thereon. At tirst they were a little uneasy, and pawed a grond deal. but they did not go lathe. soon became used to it as their hoofs harelened, and since that time they have stood on mothing else when out of stable. The Howers of the stable are made as hard as well rammed clay and gravel can make them. Cobble-stones were not to be had for either pieket line or stable foors. All droppinges are at once removed be the stable guard, so that the horses do not stand in filth to heat and injure their feet.

The success of the above experiment is berond all question. The canse of the partial bailure at first is sutticiently obvious. and the fect of these horses are now in such a condition as to be able to stand anything, mo matter how severe except being rat and trimmed. sottened and reshod.

One of the veterinaries at St. Paul, and a man who says that he believes in shoeing. lately naid that the horses of the battery had the finest net of feet he had ever seen, and that they could march a thousand miles over any kind of a road with impunity.

They have been exerefed daily wey ioe and show thengh tw,
 the hardest of ice and the most sippery of vash. They tand up, and travel where sharp shoof horses -lip athe tall.

Instances of cavalry experionce roblal alow be siven, howitas how horses have been womel tor there sears and weer that mewe wore a shese and were riddel and driven any where athe ererywher without roing bame. The dane might he moterl ot a certain bate footed mare. that was ridhed eleren miles in torts-tive minutere amb inside of twenty minutes nere was tomed around and ridlen batek over the same distame in fiferive minate without a chig. - phit or eratek to her hoots.
 show that haretomed homes cammet same their work unhart. It is generally taken fior granted hat the Indian proye reprerente a hatural


 trails. Now is is a fart that the fulian lation hiv pery most -. verely alone so tar as harlebing the hoot ares. hut the animal when





 fower ant hener he bats when taken on wil harder that turt: The


 that of the Indian pony anit the lorre of rivilized math
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Ot late murh interent and attention hat boren awabemed it this

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 to rest on a rocky soil, but weks the shate of trees where the earth is dry and sott." Tue Cobonels intormation on this subjeet ditier from everything that has begn sathered ly the writere ot this artiche.






 Ho...nt the lowere at the Military Arallemy when witherth -heres. athl
 phat at arthery drall. But it mast he remembered that there horse

















 - Blted trom the wear an the stoble



 when tree trom all burden Bat don- it thllow that hature is tom



 keop up a wimmlas. w wear anay the lown at it wrows. and at the satme time tw cance the new material to herome harder until at lant the hout -ustains itself in a dumble eombition. ( all this an artiticial condition it you phatere it is mot more on than that of the latherers
hand，and it is a conditiof more nearly approaching nature than when we put on an ironkloe．which introduces conditions favor－ able for every ill．

Again reference bas ben made to this hardening promess as though it might be injuriouls to the delicate parts of the foot．Para－ doxical as it may seem，this hardening process is used expressly as a protectior．to and means of stimulating the growth ot these tender parts．These parts are anf tutermal and they are sorelated to and connected with the hard e．ffermil parts．that the harder these latter are，the better，to give the protection meded．Then the sole will not spring in，or be dented by every stone，causing pain to the internal sole and frog．Then the whll will be firm and hatd chough to stand shocks and blows and canse no pain to the internal wall or the firont of the cotfin bone，a ad theng the natural intermal mosisture will not be allowed to evaporate，keephng all internal parts lubricated．springy and able to move upon the pelves without pain or stiffues．
 Journal some months ago．中ention was made of the fewt ot the horser he saw in Mexieo，rears agd．He speaks of the cobble－stone flow tw the stables which he fount here．He tells of the fearless manner in which these horses were riftlen over paved strects and the mamor in which the hoof rang of they clattered wer the stones．This shows that we adrocate nothing new．and that the hatroning proce－ has been long used with sudecess．

There is an argument，that the best veterinary practice advocates shoeing．So be it：turn to the practice of medicine and see low the theories of centuries have lean dropped in the last fiew yars．Viet． erinary weience is young infleed，and if it took a thousand yars fin medicine to learn that a feter patient conld be ted on pounded ic．e． without being killel therebpe weed not be surprisel it the younger art should learn a lesson nofo．

We all know how mudi time is generally given by the home owner to the subject of hit horse seret．That is the eroom：busi－ ness and not his an a genefal rule，no matter how contly the horse or how expensive the whold outfit．The horse owner generally has not the time at his commatid to levote any but scant attention to his horse＇s care．

No mention whatever has been made of any kind of shoe that might be advantageously used．This was purposely done because we believe that no shoes arf necessary for any kind of service．But that all ohjections may be met，it will now be stated that a rubber pad might be made to fastemiorer the entire hoof in the same manner
as the Japanese stma samdal．to protect the foot when on particu－ larly hard or gritty ground．The experience with hidecle tires would seem to indicate that durability could be quiven wach a pad，so as to stand a large amount of wear in the exceptional places where it might be needed．and certainly its use conld not be detrimental t．， the foot on aceount of the comparatively intrequent and short inter－ vals that would demand it．Such a pad could be devised so as to be readily put on or taken off．and could be carried bey the troopor or in the battery wagon so as always to be ready for use．This use would be like the protection a working man give fis habds under exceptional cases．We all know that the blacksmith and hot－iron worker can fearlessly handle iron so hot that it would burn a deli－ cate palm and yet he cant handle red－hot iron with impunity．An to irn＂shoes let hs have mone of them．If a shoe most be used then let it be of strel．mate as light as powible as propesed be couptain Harris．Such were the plates with which the new horses of Battery ＂ $\mathbf{F}^{\prime \prime}$ were shod，and they stood wear without any hinding or break－ ing．We cortainly should diseard the Burden shoe an ath abofnima－ tion．

In changing station trom Minmestato Kamsas．Battery ．． $\mathbf{F}$ ． Fourth Artillers．did not mareh heranse the cost of marehinge in－ Fhoding the hire of the necessary wagon tramportation，the trans－ portation of torage ete．made it more expernive thath to move hy rail．It was hoped that we might mareh，just for the reason that the test could be made but it was derided otherwise．

One word more as to the stone picket－line mow heing built be
 Was tirst ploughed up and then thoroughly gome over so an to break up all the lumps and clots and to grade it with a slupe tormeds the center．A central ditch．about $2 x$ teet，was dug the whole length of the line and filled with large broken stone．to form a＂blind drain． and then the process of huildine up commenced．＇Floe ground was broken in the manner doweribed．Woth tor the purpose of grading and giving a surtace upon which the stone used in buiding up would bed．Cobble－stones could not be had and consequently the stone of the country had to be used．This was laid on in quite large blocks as clone together as possible and so as to form a uniform lager of rocks for a foundation．On this．smaller stone is laid，so as to bring the whole up to an even surtace and grade，with nothing but sharp rock for the horses to stand upon．A filling of sand is to be used so as to help bind the rocks in place and at the same time to prevent the gradual filling in of manure between the stones．By this means
( a hard, rough surface will be tomed and at the same time orte that can be kept clean.

The slope to the centor is purporly siten berallee it has beon found that the horse stanlis more combintably thereon. He always seeks a position sloping a little towards the head, and it firred ta stand on a slope that pitcluas from his hand th his tail. he wenn reeti-
 content. Fill this hole in, repair and haild up the woller of the lime anid he paiws it out as fast as you till it in.

The central drain takes all the drathage trem the line. wh that INO pools of urine stand here. Moisture athe mol will abob be per vented atm it is thought that the lite will maintain itwelt in aroul condition the whole gear hrough.

Blime draine in rear be the horses ratl aho be mathe it tembed necessary. These meed whe be wh latge a- the comtarl dratat they


 would tall on the line. Theme blind drains are careved ont ant be. fond the end of the line so as tor empty their comtent- on the - are
 acss-pools to colleer all then liquid tith of the lime.
(HARLEW D. PARKHCDT,


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Captain Hexmy W. Wespan, Jk., Third Cavatry:
The matter of horses opoing withome shes is inte which hat owoupied my attention tor quike a mamber of ratars but mever baviat kept notes on the subject. I have now mothias hut mes menory w rely on.

While serving in the Department of the Plathe we were bronsht into constant eontact with the Sious. Cheyembe amb other tribes ot
 animale were always in preet comdition. while thome of my trom had corns. contracted feet, quarter racks and other ailments. A. our blacknithe were as pood an the average, it becatme evident to me that shoeing was nof thoroughly understond ill our cavalry. It then occurred to me that the foot of an Indian pony could nit differ in substance from that of a cavalry horse. and that if the for-


 -


 -hn".
 it the preane or -mall blatp -lome in the wil and heraluse I















 have haldelle. it the hare had hern harefouted








 out wincilus

 and sixty mile in aisht hays. were a road that wan stong part of the way. On their arrival there were some tember tert that is. terober

apection revealed no weafing away of the sole of the fowt. and apparently no reason for soreness. To-day they are all right and could march from san Antoniofo Fort Leavenworth unshoul.

In Texas, where there is so much riding. there is comparatively little shoeing. It is waid that horses ruming at latge in the state will have on one range long and unsightly hoots, which are troublesome in moving about, yhile in another locality. Where the stomes crop out, the feet are sond restored to proper shape.

Captain Francts Morke, Niath Cavalry:
It has long been my opinion that horeromoedigs is werdone in the army and on every good opportunity I have had the shoes re. moved from my troop hgrses. At one time when all my horses were unshod. I was suddenly fequired to furnish a mumber of men to pur. sue a couple of Indians who had escaped trom the post ruard-house The detachment left. aed after traveling fast amd far for several days, returned without a lame horse. It was sereval rears atter this incident betore I confld get permiswion to make a general experiment. In the fall of $1 \times \$ 5$. as a concession. I was griven authority t. remove the shoes from the hind teet, and since that time wo hores has been lame therefrom. It has happened. however, that no wery severe or long marches have been made sillee that time-the haribest test being about four hundred miles of continuous marching. This and other experiments have convinced me that under moderate conditions of service the troop horse can pertorm his work withent shoes on his hind feet. It may be different with battery horses. which have to use their hind feet more.

Now as to the forefet. On arriving al fort leavemworth. in the fall of 1886 . I had the shoes removed trom the torefeet atso. The picket-line answersisomewhat the description of that used by Light Battery .. F.: Foulth Artillery. It consints of two portions. one of which is covered puith hard cinclers and the other is made ot crushed rock. like any macadanized road. The hornes stamd on the former during the forendon, and in the atternoon on the latter. For a long time quite a number of horses became lame in the forefect. -they were put on nick report and rested. but were not shod. The severe test for them was patrol duty. which required a horse to walk principally on hard, rock roads for eight hours out of twent.four, and is no light trial for the toot of an unshod horse. Most if them stood it, however, and now perform this duty as well as the ordinary drill, without skg of lameness. A number of them could
not wand the test, and I hate now ten horses wementer fore shoes. After persisting for ahout a year I fomb that they octasiomally became lame and temder, so I was compedled to rephace the shoes in tront tohave them fit tor daty.

Whether cavalys horses can pertorm their daties under all conditions of sorvice without shoes is a question upon whirh I am vers much in forbth. While I have sreat taith that they can, so far as the hind teet are comerned. when it comes to the toreteet I think many will tail. In active service every kind of conutry has to be woced. wet and dry, samdy and stong. The horse may be for many hours in mud and water with mo hard picker-fine to stand on: the hoot aboorbs moisture and heeomes soft. so that when at dry and tony country is cowountered the hoot is eround down and somen worn to the quick.

I am often asked. " Your horses being unshoml. What would yout
 them only when necossary.

After all it is a matter for moere extembed experiment. It Lisht Battery . $F$." whove horses teet have been prepared and hadelod. ran sucered in marehing to the camp of the tall manewers. take part in the exemeses and return to Fort Riley withort lameness to the horsers from the absence of shoes then aboint all that is clatmed lig Iienteman! Parkitrast will be comeded.
(aptain Finat b) Thuma. Fifth Cavalry:
It has been my custom to keep horses unshod as long as possibice. When shoes were used it was only where the condition of the hool rendered it imperative, and they were removed when the necensity passed. In fact, wo firm an alvocate an I of the theory that horses in a majority of instances are better off in a matual state than whel shod by theordinary ..smith." that I have frequently bept them withont shoes longer than was beneticial. Fxperience and actual facts show howerer. that there are times when horses munt be abod: to know when and how this should be done. how to care for the feet and what shoes to select are matters of far more importance than the solution of questions of endurance in pounding on a rocky picket-line.

In Arizona it was impossible, no matter how perfert the feet, to travel over the roads and trails of that region with unshod hornes. If it had been possible the Indians would, without doabt, have kept up extensive herds. for their capture of horsen trom stockmen and
 people in the world mopre tomd of ridills and eane in travelitus that

 steaks on the third day atter calture that time beriner sutticiont i． wear the liont down alyfore the the quick．From time t．e time halt


 unless their tee were penterted．



 entre intes seriee at fix sear of are．



 men，and whenever it waserostry termpley then an allion the



 viee was mot severe the war wot Eteat athl the ted kep in pertiot



 maintaned in an atticiept marehing condition in that rentury with． ont taking all prosilile prerations．At the present time in what homat my horses are monly harefonted．hat I shall take wowl are that the are shed in tront，abd well shod．before the tall chatmbl ment．

I have horsery that yntimareh tour milos an hour amd at the mate
 there are otheres that capoot gotive miles．no mather how much care I bextow or how often I subject them whe stome pornding proco． Families of horses transpit to their progeny umound．weak and than walled feet．This peculiarity we motice in a great many of our fashaonable dratt strains，the bood and defects of which have been intermingled with one excellent native stock．This clano of homer．

 well a－whew obthe math





 110－lum horae will mever attaill．





I was at the same time to divile heremmand intotwo parties_
 ingtome and then pual acrons the river at White Ford in Montgomrer and the other to mowe mally through Forderick. alous the
 wherever elae opmortunity otfered.

 Ganata be way of Niagamat hatd pushed.

The lotal satritiee at the commathe wobld hate heen well repaid be the rapture of Mr Lasoons hat I dil not enolider escape utterly
 Maryland.

The object was in create surl confinion among the telewaph and railroad and commambing ottioner that the small detachment having Mr. Lavoos in charge. Would esalate without attracting attention.
 however. and I set out to execote it.

1 was shoeing my hores and gretiner up my dismounted men and phtting everehing in order tor sharp and atetive work when demeral Farmy eame alone a tew days attere at the head of his coltomm, marehing to heal off HINter, then pushiner up the valley to Lạnchburg.

I knew deneral fiaris well ath wat attached whim by the comradebip of arms. he mer repert fir his intelled and hy marm hove for his gemaine manly. trat eharactere and 1 explanerl to him liy projected movement. He said it would not do. "Im groing to l.enchhorg." sad he. "and as soion as I smash up Mr. Histere little tea party Im ening to Washington meselt. Von'll put all that out. - you mustuit try it until I come hack.: He thell directed me to move wionmon and wateh the valley until he got there. By the last of June he came batk.

I was asigneal to the mavalry brigate of Genemal Wibinam $E$. Joses. who had heen killed at Mount Hope (hurch on Mesters advance. We began wur movement down the valley from Staunton. Rassonts cavalry division on the roads right and left of the Valloy like and the intintry and artillery on the macadamized road hetwern them.

Between Winchester and Martinsburg. Farmy divided his forces, directing Johssoscs cavalry and Ruodes' brigade of Ramserés division, under Earis himself. to the right to cut the Baltimore and Ohio railroad at Kearneywille and unite with McCarslands cavalry and Breckinhides corps at Martinshurg: Johsson and Mc.

Carsiand to make a jundion at Hainesville. behind Martinshure: and thas cut off the retreat of shiel. who was at that phace. I struck Leetown just atter daylight, and found it held be deoneral Melditas with two thousand or three thousand infintre. five handred eavalry und four gups, and just as the sun rose on the $3 d$ of July ${ }^{\text {I fired the first gun. Mrididas had agood position on a range }}$ of hills. The infantry of Breckinembie: was half a day marela he. hind and I had about eight hundred half armed and badly diaciplined mountaineers from monthwest Virginia. who would tight like veterans when they pleased. but had no ideat ot permittine their wwn sweet wills to be controllad by any orders mo matter trom whom emanating. They were aq brave and as tharless. and as undiseiplined, as the Highlanders who followed Chartas Ebwarb to ('ulloden. However after sevpral hours fighting. Mrithias withirew. and the junction at Martinfourg being then unnecessary beason of the escape ot Siges., we 中oved towards Shepherdstown. Early on the 5th of July I crossed the Potomac with my command. and that night camped two and a that miles from Boonsboro. On the tith I mored to Middetown and on the ith drove a small torer that showed itself on the monitain betwen Middletown alll Frederiek. back to Frederick and prossing atter it, arrived in front ot the town about midday.

I knew every foot of the comentry - having been born and hred there-and I had the adrantage also of an accurate kinowlediee of the condition of affatirs in the tofin. I proposed to semb one regiment down the Georgetown pike, into the south end of the town another be the Reservoir road, into the north end, and press on in front from the Hagerstown roadon the wast side. This would have given me atmut one thousand prisoners, and much hagrage, wagons and artillery. But my commanding otficter, General Rassom. thought I was over sanguine because it was ply own place, and retinsed to allow the movement to be executed. He directed me to withdraw. umber cover of night to the top of the mountain, until the infantry fot up. Accordingly we hay all day the 8 th in a drizaling rain on the mountain. At night I was directed to report in person to General Einhis. and found him on the roadside just south of Middletown. and he then -intormed me that he had peceived an order trom General Lae by a special officer, Captain R. E. Lee. dinpatched to him for the purpose. I was directed to march af daylight of the 9 th to get a position to the north of Frederick and watch Early's left until I was satistied that he was getting on all right, in the battle about to take place that day below Frederick. and then strike off across the country. cut
the railroath and telerraphs north of Baltimore sweep rapidy around the city. con the Baltimote and (han ratroad between Washington and Baltimore and push on rapidly was to strike Point LookGut on the night of the l2th. Captain Jons Pavoos Wiont was to be there in an armed steamer which he was tor ran out of Wimingtom. We were to eapture the place. I was to take command of the prisoneps there somd ten or twelve thonsand. and marel them up through lower Maryland to Washington. Where (ieneral Eabs. was to wat tor me. The prisomers were to he armed and equipped trom the arsenal-and magrazines of Washingtona and thas reintorced, Garly sampaign might be still further agereswive

I whal deneral Eariv that the mareh laid out for me wa- utterly manosihle for man or hores to acomplish: it gave me four days. not minety-nir humes to compass mear three humbed miles. mot countinge for time lont in dentroving bridges athl railroads, but that I wonld do what was pmosible tor men to do. Acoordingly I stated from Hagans, out the Catoretin Monatains. alout daylight on the morning
 road. two mile morth of Frederich, and waited until I was satistied
 rate my orders only to my Assistant Adjutant General. Captain
 Nichobas. of my -taff: and Cohnel leters. commanding the Twen-W-first Virginia. the ranking otheer of the brigade. But this cantion probably eost me time as I made an unnecessary detour in arriving at my objective. I moved through Liberty. New Windsor. Wentminster and Reisterstown. reaching the batereplace about daylight of the loth. While paswing through the latter place a ditizen in dishatille wat very urgent to he satistient that the tromes were confederates. At last convidion came upon his douhting mind to his great delight, which he gave expression to as follows: Well. I told JakE so; aint I got it on him? He thought they would never come. but I always satid they would." He was mach gratitied at his superior sagatity. Some hours atter lie came to me on the mareh, hegsing me to order a horse given back to him. which had been captured hy some proderery Confederate. "not that he cared for the horse." he said. "but that Jake would have such a rig on him. That his dear Confederates, so long expected and come at last, should take his horse!" He got it back.

We reached cockeysville on the Northern Central milroad about nine oclock Sunday. July loth. and burned the bridges there. Here I detached Colonel Harry Gilmor, under Eabliysinatructions. with
a part of the First and Reqund Maryand Batalions. to strike the railroad at cunpowder river. on the Philadelphia. Wilmington and Baltimore railroad. and deftroy communication between Baltimore and the North. Gumor actomplished this the next morning. Man: day, the llth of July, capthans several trains wring borth from Baltimore and took prisoner Major Gemeral Fraskins of the I'tited States army. That night General Fraskise escaped trom the guarl who had him in charge and who were utherly broken down by sixty hours continuoses ride.

I was oroapied several hours at Corkewille. and whike there
 to aseertain the condition of the troops and toreos analathe for the defence of Washington.
 knew that he was going to push into the capital if practiathle. . Ifter getting an agreabhe lunch at Haytields, the seat of Juns Merky max. Esti., I left two voung rentlemen there th get the reprert of my Baltimore scont and bring if to me as soon as posible. The charm. ing society, the lovely girlst the balmy July air and the luxuriant verdure of Haytieds all cophined to make the veene combantime to
 plains atul valleys of Virgitata.

From there I moved acths the (iredt Spring Valley. in Baltimore county and passing pear the conntry reside one of the then govermor of Maryand. Aquptes W. Benpord. I detailed Lieutemat - Beackistone. of the Maryland cavalry. to burn it in retaliation tor the hurning of the home dy Governor Latener of Viremia, which had been dentroved by Gengral Hrater. at Lexingtom.

I bivonacked that night at "The caves." the pace of Jenis ('an noll. Fisg. Ahout midnight I receiced at message hes the two couriers left at Hayfields. from Colonel ('hanes. whom I had sent inte Baltimore. He informed me that all the available transportation of the Baltimore and Ohio railroad was concentrated at Loedost Point: that the Nineteenth Corje of Grastis army, under Gemeral Fsory. and part of the Nixth Corps were on transports in the stream. a waiting the arrival of Genfral Emory, to disembark and move to Washington. I at once rent this information to ceneral Earis by an officer and escort. and indred on.

Passing Owen's Mill eard in the morning. We came across PantER's ice cream extablishment which had a large apply of that luxury for the Baltimore market. As rations were scarce and issued with great irregularidy, the ice cream was confiscated and is.

Shed to the troops maty ot whom hat never arell aly thing like it.
 phat it in heir canterens to melt.

 Carkob. Fief since dowernor ot Maryland. with whom I had the phasure of lanchins burins the athermon if that day. Monday.

 him the way arrow the combtry
 tace on Saturdag the gth. the firmer had mardhed direct on Wash. ingron. His ancance arrived betope the fistitications of that place on the 11th, hat awinge the theat of the weather and the hroken


 arainst the turtifications. withont maberstadine the state of thines, would have heen bure than filly." Atter entalation with Major
 moned to make an asatult on the enemy - work at daytight mext


 Jonsson from near Bathimore intormins me that he had reoeived intormation trim a reliable wore that two army corphad arrived
 in motion. Thin camsed me ge delay the attack mutil I could examine the works agate and an iom as it was light comagh were. I rode to the from and fiemel the parapets limed with tromp. I had therefore reluctanty to sive up all hope of eaptaring Wimhington atter I had arrived in sight of the dome of the capital abd given the
 War." pare B!!.]

The preservation of Wanhenton fiom capture was owing to the energy and decision of Jobs diahatit. Esif.. President of the Balti-
 military authorities.

Mr. Ganetets railroal wegraph had kept him thoroughly informed as to the movement: in western Maryhand. He had perceived as early as the Thursiay or Friday before. that Early had crossed the Potomate in force and that his real ohject was Washing-
ton. He had impressed hik views personally upen President Ias coln and the secretary of War. Mr. Stantos and insisted on the necessity of tighting a hattle at Frederick. in order to either gait time for troops to be got up for the detense of that city. or failints that, that preparations confl he make for its evacoation. Aecornt ingly when the batte of Monocacy was fough on saturias. wed he found Early in full, parch southward. he immediately prepared the transportation on his road, to receive the reinforcements which he was informed would arrive the next day at Locost Point Durines Sunday the fleet of transpote from Foetress Monrod. With the Nille. teenth and Sixth Corpes. began to arrive. but the othere in eommand refuned to allow any tropse goland until General Emont had artived After atriting in vain tostapt the disembarkation. Mr. (inarett peo. ceeded on a special engine the Washington and sor impresed him vicw on the I'resident and secerdary of War that he brousht back with
 report to him until GeneraldEmory shoulal arrive.

During Sunday night ehd Monday. (ianrett. thes actmally in command of two army corpe pressed the reinforcemente on his cars and hurried them to Washfngton. Earis saw their advance fiking into the works on Monday iatternoon, and the reat of them linings the parapets on Tuestay at phaylighti.

While these events werefaking place. I was prewsing in lot haste. through Ifoward and Montgomery munties. I raached Triadelphia after nine orebock that night, and unsaddled and tem my horses. and let the men get a little slect. By twelve wolock I reecered infor. mation that a large force of Federal cavalry had some into "alif since my arrival. at Brookyille. only a few miles ofti. I at once set ready and started to attack them. but on reaching that point fomad they too had received inforquation of their meneleome neightore and had lett. Thence I moved to Beltwille. oln the raileoad betworly Bultimore and Washington.

There I foumbabout ond thousand cavalry of W"asos: division. which had been dismounted in a recent rad in lower Virsinia. and sent north ter recuperate. They were mounted on steen horses and we drove them. atter a shom atfair. down the road towards Blablens. burg. It was now the molning of Thesday the 1 ? th. I was diluthat night at Point Lookogt, the extrome southeast point of Mary. land. in St. Mary's count.

It was physically impowible tor men th make the ride in the time designated. I determined. bowerer, to come as near it a- ponsible.

1 sent an officer with a detachment to ride att epeed throlash the comery impresing fresh horsesall the way ambintorming the perphe alour the route that I was coming They were unanimonsly my. triends and 1 requested them to have their horses.on the roabside os that 1 could exchange my broken down animata tor their tresh ones. and tha-berw them tior the ocrason During the pereding days,
 kept a supply of trow comes atherear of eath resiment. Is somb as a matis hore broke down be tell out of the ratike wated matil
 athe reamed his phace.

By thi means I was emahled to marth at a trot. which. with a
 ing down huras. allil hroken down hore- -peedity brak down men.
 to Point lowkent early on the morning of the l:ah.

Atere returning from the pursing of Whass catatry. I turned the

 He brought me ordere th report at obse at headyatitere at situer. Springe oh the secomb strect road. I moved down the WashingIon rad to the Aericultaral collare and heowe alone the lise of the Fenlemal pickets. marehing all hisht. oratsumally driving in a

 ather minhight amb fomb the whole army in rotrat. I wa directend
 reathed howkille duringe the dity, where lacksos wing pushed by
 remberel thinse very uncomtintable arempally


 who enot ont of the way with expedition. Their dinmonted men.
 as we paserd. The dust was $-\infty$ thick that in the elarge the mell could not see the horses in front of them. The horees of Sirloblas and tinkes wore killed, and their riders wonded and captured. As soon at this loss was diseoverent. I mate amother charere abd recaptured dispes. but was unable to retake Nubobas. whom they lad mounted on a spare horse. and run off the field.
luring the rest of the 13 th our pursmers treated us with more
respert. All night long wed marthed and stopped. and stepped and marched. with that terribl iedions delay and itcration so wearing to men and horses, ank in was not until Thusalay. the 1 tith. We reached Poolesville. Hery we were obliged to stand atm keep back the pursuit. while the intanter and artillery were pasoing were the Potomac. I got my arbillery in position and depored a strong skirmish line in front of Poplesville and checked the chemy tion we eral hours. At last. in the aftermonn a wide line of skirmisher conld be seen stretching far levomi wheh thak of those we had been engaged with and which poced tioward with a stady ablighment. very unasual for dismometed cavalrs. I sent word to demeral Ras son to come to my positionf that the intantry had arvivel and hat it was about time for carab to leave.

He soon joined me aty while we were lowking throngh our glases at the alvancing life. where their camerige lowes and canteens plainly showed-paft: putf! putf! went their tire all along the line. There was no nistaking the mand. The swish of the Minnie ball was so dear athe wo evikent that it cond not prosithy come from carbines. W. Whell on, neverthelows. makine a errat show with our artillery aipl repeatedly altempted to eharere with eavalres so that we delayed them matil their supports comble depher By this time. however, the enemy had heoome tat alvanced, athd having been motifed that everything. inelading my own hagger and ordnance train. had trosed. I withdrew comfortally athl sot into Virginia about sundonfu.

We had been marching, tightingand working from daylight duly Oth, until sumdown Ifaly 1 fth, four hay and a halt: or ahout one hundred and eight hours.

We had unsadded onlf twice during that time. with a hatt of from four to five hours ead time makiner nearly one handred home of murehing. We had isollted Bahtimore from the north. and rat off Washington tiom the Idited States. having made a cireuit from Frederick to Cockeysville on the east. to Beltwille on the south. and through Rock ville and poolesville on the west. We had tailed in the main object of our eppedition. Which was to relame the pris. oners at Point Lookout, ephere them into a new arma. vapture Washington, establish our fommunications across the Potomace by Manassas Junction. with Godonsville and Richmont. and log making this a new hass of operations, fince Grant to let go his hold and come to the rescue of Pemondrania.

The coiperative movement on Point Lookout failed. I have sinct understood, because the secket expedition of Jons Tayior Wood. hy
sea trom Wilminstan, was-prokell of on the stret- of Ridhmont the day betore he was whate started trom Wilmingtom. It was there fore conntermanded. becanse the confederate athorities well knew that the Federal general was so well served that he was ane mately and promptly intiomed of corrihills an som as it transpired in Thichmond
 impossibility of settine to Wahington hefore Momday atternown. For betione then, the encrey amb sagaty of Jons qarkett hat hurled reintarcements trom Jacust loint wishinston. mant of Whath had arrived betome Fiontis

ILis trains were running trom Loernst loint on sumday night. all day Monday and on Tuestay night. and the lant of them had passedt over the wad wot many home betiote I reached it at Beltaville on Tuesday mornines. The mesement on Wavhington was a teint on

 mond. I knew that two of his erper weme on the falapow at Battimore and had intiomation that other had moved up the Potomate. I youme man, repreatited to meat reliable. well kown th
 day, and he reported to me that he had sow (inoneral (ikast in Wabhingon on sumbay. I wan theretore fored bedieve that
 from near Batimore and atterwath when 1 joined him on the mornine of the 1:3th. Lat, wor thin day klow the urigin of the story of General (ixastrs presence in Washingen on Sunday. He may have been there or it may have heren amother seneral otticer of that mame. I have umberstom that there was amother cieneral Cirast in Washington. But he that as it mas. it in clatr that at bo
 have bero justified in attacking the otrong tortiticatione of Washington. His command comsisted of the depleted divisionm of Gerbos.
 cavalry division of Major Cemeral Robret Rassom. comsisting of the brigallos of Jacksos. Iollsson. MClitelant and Imboden. about 2.0100 bally armed worse equiphed and undis.iplined mounted men. and three battalions of artillery of about forty funs and 1.000 men: making a total efferetive torce of about 11.500 men , ft all arms. Washington could only have heen taken bey surprive. and it was impossible to surprise it, when General Ginast at City loint wan nearer to it than General Farly at sharpshurg.

Sharpsburg is tome marches from Wishingeon. It might be. made in three forced marthes. The sagacity of Mr. liarkettrs rece ommendation that a battle should be fought at Frederich. .eren it it were lost. will be appreqiated. It would have been neally equiratent to one whole day march. and extended Eantis time from three or four to tomer or fice days.

On the other hand. trapsports from City Point wobld readh Balti. more on the Patapseco. of Washington on the Potomar in Iwelve hours. They could have pransported Gencral (inasts whole army from the James to the Federal capital hefore derneral Fianay could possibly have marehed from where he was tered to aross the foth. mace. In this possibility lay the strength and weakness of the strategy. If Geant were bo inclined he cobld have withdrawn his whole force or such part of it as to have paralyed his movement. on the James. and the thenat washington would make him contemplate the necessity of fuch a mose. If Fisnis: movement hat induced him so to act. leve would have been relieved and the south allowed another yeat firr areathing sepll. It it did mot wo influence him. We were nof worse aft than when the attempt was made.

I hate alway considefed the movement one the andarity if which was its satety and po higher military skill was diphayerl on either side. than that show he General Fintis in this dating attempt to surprise the capital of 作s enemy with on small a foree
bRADLEY T. IOHNANS.

##  IのHF:-IN(GFI.FINGFN

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TWFAPTU IFTTEH.-HOW IS THE CAVALKY DREPAKED TO MEET THE KEQIIKEMESTS OF TIF PRFSENT TIME?

IVFHEN I reterred in my last letter to the differulties which the Gavalry will have to owerombe ith order to satisfe all that is demanded of it. I did mot wish to be umderstome as intimatine that those requirements had heen carried tow far

The exsentials and general requirements ran be enmetiated in at fow comprehensive words.

A squatron mas be able to travere more than four miles at the rapid gaits, thot and grallop, and still be in andition te enter upon and carry through an attack.

Select homes mun be able thenture sreat exertion-th travel from fitty to sixte miles in al day. in order to acomplish the distant patrol daties. The leadere of these patrols (ofticers) must be so thoroughly instructed in tactics. both theoretically and pratically, that they will he able to make such report regating the enemy and the country asigned to them. as will serve tor timadations upon which the cotmmanding general may base his disponitions.

The great cavaly masee most be in comdition to matreh twentyfive to thirty mile- per day tor thre sucerssive days. I pon at long and contimuou- mareh the distance marehed in a daty would necessarily be wortemed and in cave great exertions hate th be demanded on ally one day. then the mext day slomble be either one of entire rest or one of hint little exertion.
lu such extraordinary exertions the tithers for action must not be sacrificed either in ishlated spuadrous or in the command geturally. These demands are not excessive The caralry can and will respond to them if repuired to do so. alld it the neressary means are given it.
 of war, in which indisidnal ofticers have ridikn neatly ninety milas in one day and brought in prost important intormation. I comblid cite mang instances where officqres at simple maneuvers. have been in the sadde continuonsly for siskeen hours without rest or twol, and have still been fresh and capably of giving a somm upinion. becanse they carried enthusiasm into thop work.

So far as relates to the festruction of the leaders of ravalry pa. trole (officers) there is not fins more to be desiret. The war min. ister not only makes the ahmual savalry .e.exerefore riflen" separate and distinct from the egenpral statf rides." hut as this misht mot be sutticient and as it would oply improse the instrators, we see one or twice each year, at such times as the ustal coorse of instruction will admit of it, the collecthre otherers of reqiments making rides of
 a better insight into the duhies and purpences of otticers paters. I regiment which had in to pay neglected the other brancher of in. struction. but whith was eprellent in everghiner. reached sucha degree of pertection in reconmosance service. that in the autummal maneavers all the mon-ommissioned otficers. and many of the men. were able to accompany dheir rejrerts with sery intelligent suldesketches.

Only one question is merr answered in time of pate. vi\%: Can a division ot cavalry mare thirty miles per dim for three ancere sive days without sallerithng its actual tithess tior artion: This demami is mandatory upong is. In war it must be satistied. When an army is set in motion across the territorial boundary line. and sends its cavalry to the font. that cavalry mant be able in there days to gain a distance of from two to three days marehes on the army. To do this the caralry must marel from twenty-five to thirty miles ar day. while the army follows at the rate of from deven to thirteen miles a day. ( in the adrance noon Chatons. marehes ot twenty-tive miles per day fere actually made by an entire division of cavalry.)

It is only atter gaining this distance in advance of the army. that the cavalry can reduce the length of its marches to correnpond with the marches of the main body. It will then-it it has not done so before-come in contact whth the enemy and must be held in good condition for action. It must not have losi any of its fitness for service during these marchos.

This is the only point upon which our cavalry has no instruction. Experience and practice are required to admit of the execution of a
toreed mareh of three days bereat mases with the areatest persihe economy in horse-fleh. espectally when it is a campaign mareh against a real comer. or whot anderlyins itha or arthal war. There are innumerable things which repluire consideration in sueh "perations, be the ohservance of whath the trome will be spared fatigue and matntathed in hetter condition tor great exertions.

They begill with the dewination of the rendezous. The smaller the number of tropg at ally one renderons the leon the exertion of the troops it assemblings. It is decided atter cammining the eondithen of the parallel roats whether the whine division thas lee siver the same rendezons or cath brigale shall be siven its own. Then comer the asembling at the designated phaces. Nothiter is more tiresome to the trong than movilus hither and thither before dismounting at the place of asocombly. It often happrons that a suantron reperts at its operial renderons. then it weres the that of the resiment. then th the herade parahe and timally the histane the the peint of assembly of the division. In his waty reve moll time is lont which must be taken from the peat of the tromse and which can be aroided hepratising the smallent detachments ill quickly tind-
 aganst such squalmering of the and strengh in stringent orders: but we see the salle tatals sill repatent herame the then per are not given the neressary pratice. Practical experience in giving short. sharp orders trom the saddle. in which nothing is fiorgotem, and robrerning which mo doubts can arioe in also very necewary. Seouts should receive pactical motruction in their huties in order to ematule them to tirm fately correet estimates of the distaneres they may he in front of their commithds

When the division begins its alvallere it in meanaly alnse all things that the horses shoulif not tret, and that the gat he momerate if a greater distance than thirty miles is to be marehed. (ineol order and keeping well chosed are of the greatest impurante. As stoppages and delages are unavodable in a long column, the regulation distances must not be paintally athered to. eloe the alternate - rushes and shocks will unmeressarily excite and exhanst the horses.

Much exercise and practice is necessary wet the great mans to trot quietly. It must he insisted upon that cach squadron shall keep a distance between it and the next preceding. which distance mast be variable in order that disturbances in the gait may not be generated towards the rear of column: and furthere that the heads of squadrons must adhere more to the prescribed gat than to the regubation distance from the preceding squadrons. If. however. this
distance mould become eyceptionally great. then. the custom of the service must authorize the chiof of squadron the send torward indi vidual monnted men in order that the connection may mot be lout and that the adrancing thoops may not take a wrong direction.

The changing of the gaits must be done by the wateh. In istiti I marched from Poyshorta in front of Vienna. via Prague. to Burlia with a considerable nass of actillery and changed the gaits in sad a manner that, for each falf hone we moved at a walk. We trotted two miles and one-third on the first day. however. I matehed : quarter of an hoar at a walk and then trotted about two thonsand yards. In this way we iparched about four and seven-tenths mil.per hour. If the march qxceeded eighteren miles. I made about mid. way in the march tor that day a trot of tour and seven-tenthe miloinstead of half that distance. as was our custom, ami atter this trot a shorter culming walk, which was followed by a halt ot halt ath hour. Thus the eighteed miles were acomplished in four home Horses and men were that kept frosh and the horses grew fat.

It must not be overdoked that the cavalry arrive at a halting place by troops: and they should be mounted and dismounted by nquadrons after forming and great care should he exareised that the horses are not tired by the men remaining too long in the sadille. at a balt. It is a great mistake to let the whole division monnt at the same time for in makehing off it will be more thatn thirty min. ates before the last squalron enters the columu of mareh.

After the instructive of perience obtainel in the long march from Vienna to Berlin, I shopth arrange a forced march of thirtyone miles as follows: I woululstart with a halt-hour walk. then a twam! one-third mile trot. anothdrecoud walk of an hour. followed by a nere ond trot of tour and seven-tenths miles: then a thime walk of half an hour and a third trot of two and one-third miles. then a fourth walk of half an hour. There should be a rest of half an hour at some suitable time and farorable place during this part of the march. We have thus accomplished about three-tifths of the march. A rest of from two to three hound should now be given. during which the horses should be waterel and fell and the men do their aoking. The accomplishment of the remaining two-fifths of the day work will require three hours. In this way a division could march thirty. one miles in ten hours.

In the various condifions of the ground which one meets in such long marches as thitty-one miles. ample opportunity will offer to allow the division to pass once each day, from the formation in
march th the tiormation in action, he it agains a marked ebeloy or a - "Ippored cheme.

As the fied maneders of the adalry divisions are mow conducted the moving of the division in three lines is treguently prace tised. I have sern maneurere which lated from thur to sis hours. buring this time at least from four to six eavalry hattes were represented upon at areater or lese tield of operations. But they all originated at the place ot rendezous. I have never seed the arrangements surh. that the difficulty had th be wervome which presents itself to the cavalry when it has to pase from the marehing bormation into the formation for artion in the face or the rnemy. This diffeculty is greaty increased if the cavalry taker several paralle roads. In times of actaal hovility this will geverally be the case. The instances in which the opposingeavalry foreseshall stamd faring one another in their places of remberous and make the attack from there, will be very rare, The asees in which they alloountor ane another while in colamm of mareh will be by far the most freguent. especially if both armies make the proper use of their avalry massed and send them far in advance to reonnoiter and ewer the tront. Then that cavalry will gain the advantage. whith hest unAerstands the quickest way to deploy from the column of march into the three-line formation for action. And yet sucherereises are cencedingly mare. Aceording to my information. General Ranowit\%. was the first pereon to suggest the ideat that the cavalry should be osercised and that it cond be carried ancoss country in formation tior artion. His -usgention produced no results in his tities (he died in $1 \times .33_{1}$. In later times the cavalry of the Twelth (omps has been maneurered in that way. Iam informed byexcellent anthority that the experience was very valuable. But what is move remark. able is that the eont of the damages done in exereising in this way dial not amount to one-third the cont of hiring a held tor manelusers. Yet for reasons unknown to her this kind of instruction has necer been repeated with us. The French. bowever, manenver their avalry in this manner. The divisions taking part in the operations march toward one another from long distances, and atter a few dava the action is represented by their rushing upon one another

In order to give a practical expresnon to my ideas regarding the needed instraction of the cavalry through an example, let the following be the arrangement of a projected cavalry operation. as it probably should be in order to secure the resultes sought.

A cavalry divinion (say the five regiments of the sixth Corpe and one resiment of the Fitth (orps.) assembles in the vicinity of

Krappitz in upper silesfa and is required to reall the vicinity of Liegnitz in three days. The tirst two days it is permitted to oper ate upon any tactical and atrategical idea. the only condition preseribed being that on the second day it mast reath the vicinity or Liswa on the Weistritz. the west of Breslan. I think if I ware in the place of the division fommander I shombl make the matela of the tirst day on parallel road, erossing the Neisse at Michelat and Leer wen. with a supposed epemy and a concentration of the parallel columns tor concerted adta, at some designated point during the. march.

The secound day I shoplide adrance trom the Neisse th the Weintritz. with the division upited on one roath against an enemy julicated by wakes, possibly fintrolucins en route a representation of an action (attack of all thee lines). For the third dats a gemeral idea or plan mast give the division the neressary instruction tor it mbance against an chems who is known th have rathed liegnita and may be expected troin the direction of Spentan on the Bohere The enemy being another division (of the Thided (orgs), whith could receive, in like manner, the following instruction: the firet two days of their march to reach spootan trom Kuttho ow trent
 adrancing from Lisa.

The third days operations mast end with a collivion of the tw. divisions. This days work must be succeeded by a day of rest. Then two days could be ehmphey in field mateurers in the district between Liegnitz and Hugenatu: the two divisions to attack whe another or execute such maneusers as may be necessary to tirmly fix the elementary principles of the attuck in three lites in thie minds of those participating. if the previous "preations had -hown that such instruction wastueeded.

Mter another day of nest the two divisions separate. the tirst day each again acting upon some general straterical idead and they tilatly reach the places from whith they started. by fieh mancheers sume. what similar to those practised in commer.

I would not confine this instraction to the elementary exercises of the division in the taties of three liness as was the case upon the single occasion when we attempted a long march with a cavalry division. for it is my opinfon that numerous elementary ideas must be firmly established by fucular demonstration in such operations. and that mere theoreticaldemonstration is not sufficient. But I believe that there is more time decoted to drills. as now conducted. than is absolutely necessary.

I hold that the assembling and exercising of the division at one place as a unit, is a necessity, in order that the division may be in--pected by the higher officers. This is not.possible during forcend marches without. in some degree trammeling the action of the division commander by designating a certain rendezcous. which would take from the marches their actual war character: and by making the inspections in the course of the march the mork would be excessice. An inspection by the higher otticers is very necessary, for what is not inspeced is neglected. Anyone who bat been a soldier knows that.

Accordine to my plan sufficient time would be given for the in--pection and presence of the commanders. especially on the third day's mareh, at the collivion of the two divisions and then darings the two day tieht exercives between Lieguitz and Hagenan. On these two hays as well as during the six days of marching oplortunty comble found tor the division commander to unite the dirisions in the elementary maneuvers of a genwal action.

In this way the cavalry division which started from Krappit\% atter six days of hard marching, two days of field operations. two days of rent. in all ten dage would have again reached Krappitz and would he distributed to its garrisons.

It may be replied that the horses cannot make forced marches of thirty miles per day for three successive days. When a borse is sound in wind and has been hardened by work. he most be able (1) acomplish this service. As I have previously stated, seven hours are required for the march. four betore and three atter the noon hatt. . ddeng to this an lour and a half in going to and coming from the nights quarters. We find that the hoves have had eight and onehall hours work under the saddle. If all useless waiting in the sadde is taken up in maneuvering, the horses will not be worked over nine hours, and that is not too much. even if eighteen miles are ridden at a trot, for the horses are fatigued much more by carrying weight for a long time than by the gait. Ten hours' work per day for three successive days will not ruin horses; many farm horses must do more than this through the whole harcest season. At least. such ten hours work will try the horses less than often occurs in maneuvers. field exercises and in war, when they are kept under the sadille. without food, twelse to sixteen hours daily, and most of the time under the rider at a halt.

Another question is. how the time is to be found for such operations. Far be it from me to wish that the cavalry should not take part in the infantry maneuvers. On the contrary, I think it is very
desirable that the most intimate relations should exist leetween the cavalry and infantry. And to this end it should be practicallydemonstrated once each year that the cavalry only exist. for the infantry. and that the dfficiencies and necessities of the latter mon be completed and supplifed by the former.

I think it is very dedirable that all the cavales should take pars in the annual maneuver of the infantry, and begin their own opecial exercises after the infantry reserves have been dismissed.

According to the fufegoing plan the cavalry maneuvers wouh require ten days time. That would result in a delay in dismissiner the cavalry of twelve days (including one day for rest hefore athl after) it, as in the example, the maneuvers should cease at Krappit\%: but in other cases these quelve days might be extended to a fortnitht or to three weeks, and it might occur that certain spuadrons would not reach their garrisong until the midille of wetober.

I tind no evil in this The recruits are hrought in about the 3 H . 4th. or 5th of November, and the men would not have exceede: their three years' requiped service if detained until the midhle of October. The period of service of the men destined for the reserve. and of the horses to be culled from the ranks, would thus be lengthened by a few weeks, god the accounts amd expemditures for the cataly proportionally fnereased. But could not a correspondine economy be made soniewhere else? If not. then, it should be horne. and this additional cost would not be so excessive that it womld startle any one when the necessity of the measure is appreciated.

As for the additional expense, it would amount at most to the sum necessary to retain for three weeks longer in the service athout one humbed and eighty men and seventy horses for eath regiment of cavalry.

Another question might arise. Whether the cavalry can samd smech exertions with the present allowance of forage. Would it not be allewable to issue the war-ration for the period of such manerivers:

Taking everything ipto consideration I have arrived at the com. forting conclusion that dar cavalry is still in condition to meet the additional demands that the army is compelled to make on it ly. reason of the great improvement in tire-urms.

## DRII.I. REGICATIONS FOR CAV.ALRY. INITED STATE:

 AhMY.
## MOVEMESTS BY FOCRS.

Any number of men may he united thr this instruction.
Tis Ciont Fours.

1m3. Beins in line the instructor commands: 1. Count. 2 . Forrs.

It the command fiomre. the recruits commencing on the right count ofte, two.tiree. fimer. alld so on th the left.
Ti, Mimbl hy the Filunti in Columu of finers.
int. Being in line, the instructor commands: 1. Fours right (or lif). D. Mabra.

Each four wheels to the right on a fixed pivot. the pirot man turning strictly in his place: the man on the marching flank advances the lef shouder. maintains the full step and conducts the marchine flank so as to mareh over an are of a circle with a radius equal to the frome of the four: the men keep their heads to the front. conform th the movement of the marehing flank, shorten their steps acoording th their distance from it and preserse their intervals from the pivot.

Cpon the completion of the wheel, the guide of the leading four marches on a line parallet to the former tront of the mquad; the men of each four take the thll step. dees toward the marching fank and maintain wheeling distance.
185. Tu form column of fours and hatt. the instructor commands: 1. Fours right (or lejt), ㄹ. Marcil. 3. Squad. 4. IIalt.

The command halt is given the instant the fours complete the whecl; cach four dresen toward the marching fank.

1sit. In all wheelings by fours the forward mareh is taken up on the completion of the morement unless the command hat be given.

In column of fours e each four dresses toward the side of the $^{-}$ guide: the guide of the leading four becomes the guide of the column. These rules are general.
188. To change the gaide, the instructor command: Guil. right (or left).

To Change Direction in Cortemen af Fours.
189. Being in march, the instructor commands: 1. Col"m" right (or lift). ... March.

At the command mard the leading fugr wheols to the rixht on a movable pivot; executed as in parasraph 1st. except that the piret man shortens his step to ton inches in quick time and twelve incher in double time and gains ground forward in describing a small curve, so as to clear the wheeling point: the whed being completed the four takes the full step; the other fours move forward and whed on the same ground.

Column holf right (or left) is similarly executed.
To put the column of fomm in marel and changedirection at the same time the instructor fommands: 1. Formatl. ב. (i,n,i, rimht (or legt), 3. Column right (or lefit . t. Marcia.

## Tr, March in Getwmen of Fowre the thernt.

190. Beines in line, the instructor command: 1. Ri, hit ion lift forward, 2. Fiomes right (or left). З. Mabcir.

At the command morrl) the right four marehes staight the the front, shortening the first flaree or fiour steps: the other fours wheel to the right on a fixed piedt: the second four when it: wheel is two. thirds completed, wheels to the left on a movable pivot. and followthe first four; the other fours having wheled to the right move ther ward and wheel to the left on a movable pirot on the same ground as the second.
191. To march the column of tours to the rear, the instructor commands: 1. Fours right (or lift) diout. o: Mancu. 3. Guile right (or left).

The fours wheel about an a fixed pivot.
192. To face the line fo the rear, and to mareh it to the rear. the instructor commands: 1. Fumer right (or loff) alont. $\geq$. Mabrn. 3. Squad, 4. Malt, or 3. Guide (right. left or centre).

At the command morrh, the fours wheelabout on a fixed pirot.
193. The movements for forming line from column of fours, are executed by the same commands and according to the principles caplained in the Preparatory Lessons for the Troop.
To Open and Close Files.
194. Being in line at a halt, to take intervals of three yark between files, the instructor commands: 1. Open files. ㄹ. To th, right (or left), 3. March.

At the command murh, the lett tike. which is the base. stamde fast: the other tiles face to the right and move oft hach tacing to the from and haltines so as to find himelt three yard from the man on his lett.

If a ereater or lese interval be rendied the interal will be added to the second command.
195. To clowe thes the instruetor commands: 1. Clase fitis. 3 . Tuther right or leftl. 3. March.

At the eommamd math, the ripht man wha is the base stand fast: the wher men face the right and move off. earh tacilig to the front and hatting wis to find himett six ineher from the man an his right.

10m. Beins in lime the instructor commans: 1. Front tate


At the command marik. So. 1 of earh four marehes st maight on the front: No. 2 of each thar marehes staight the front when No. 1 has a distance of there vards: Xo. 3 and No. + move off in succesion in like manner: the romman hat is given when Nos. 4 have attaned their proper distanco.

To form fine atain. the instractor commands: 1. Form. $\because$. Rank.
 up intu their intervalo hetwen Nos. 1 and halt.

## MANCND OF THE SABFR AND AABER FNERCISF.

## FESCING EXERCISE.

250. The tencing exereise develops the agility intedligence and esprit of the trooper, at well as his adroithes and contilence in the use of the sater.

When practicable. masks. worden sabers. plastrons and right hand glowes are provided: the sahers to he of hickory, ash, heech or other tough wood resembling in shape and hength the regulation naler, and to have sheet iron or leather guards. When the wooden sabere are not provided the single stick is used : it is a stick three and one-half feet long. three-quarters to one inch in diameter at the hilt end. and somewhat tapered toward the point. A disk of wheet iron or stiff leather about tive or six inches in diameter should be fastened six inches from the hilt to protect the hand. To give the
single stick the proper balapee a hole may be bored lengthwise in the. gripe, into which is put the proper amount of shot or molten lead.

A target or dummy is made by firmly setting in the groumd :a post about five and one-half feet high. about which is placed a can. vas or leather bag about three feet long. and whith, when stuffel with hay or other-material will be ahout twelly inches in diameter The center of the top will he sufficiently indiative tor the head cuta ring painted around it abput ten inches from the thp will imdicate. the height of the shouldey cuts. and another ring about two feet from the top will indicate the waist : agranst this latter the thrustshould be directed.

The movemente are firs tanght without the saber. in connewtinn with the setting up exercise the hands being plated as in the eighth excreise.

The instruction may th given with the sither in the left hamh of with the left foot in tront.

Frequent short rests shopid be given.
251 . In all movemento the feet are at a risht allore, with the right toe pointing and the pres lookins the trom. This inle is general.
252. The squal being formed as in paragraph 1 ! 4 or 1!ni, saberat a carry, the instructor qations fonsing erorive ami commamis Gilaris.
Half face to the left, placing the right heel in tront af and against the left, the? weigh on the left lag: unhom the seabhard with the lef hand and gratp it between the ringe. batek of the hand outward, turn the hand infard and piace the left tirearm arainst the small of the back. (fwo.) Alvance the risht foot fifleen inches, both knees well benf, so as to be directly over the feet: booly erect and bearing equally on both less, at the same time lower the saber to the front, point about the height of the ere, enlye to the right and downward, hand li tiere and at the height of the dbow. arm about half extended. flbow in front of the bolly, thumb extended along the back of the sripe little finger joined to the others. right toe pointing toward the adversary.

If armed with the wood an saber or single stick, at the command guard the left fore arm is phaced behind the back. hand closed.

1. Carry, 2. Saber.

Resume the carry faced to the front. If without arms, the posi. tion of the soldier is resumed by the commands: 1. Squal. $\because$. Attention.

## ADVANCE.

Lō3. Raise slighty and adrance quidkly the tioht foot fifteren inchers. follow quickly with the lett the sane distance.

## hetire.

25t. Raise slighty and move quickly the left fiont fifteen inders (1) the rear. follow quikk! with the right foot the same distance.
FRUNT PGNABE.
255. Alsance quickly the left timt fifteen inchers the tront of the right. then quickly adsime the right foot fitteen inches in front of the left.

## REAR TASSALE

2ati. Carry the risht foot guickly fiftern inchest the teate then carry quiekly the left foot fifteen inches in mar of the right.

## Rllillt voit.

25: Face to the right thening on the hall of the right foct: at the same time carry the left foot quickly th it position in rear.

## I.EFT VOR.T

25s. Face to the left turning on the lath of the right foot at the same time carry the left fiont quickly to it. powition in par.

## LEFT TRAVERSE

-5!!. Carry the left fout quickly fithen inches to the left and abont there in bes to the frome follow with the right tom about ten inches to the left add about three inchers th the front

## BHillt TRATERSE

 and threce inches to the front: follow with the lef forct about fifteen inches to the right and three inches to the front.

In the traverees the tropere move on a cirche around the point of contact of the bide- when engaged

## I.C Nif.

2it. Advance the right foot quickly ahout fifteen inches. the right leg from knee to instep vertical. the leth leg extenterl, the left fiont flat on the around, boly erect. chest thrown out and head slightly thrown back.

It the command gumed, the trooper hring back the right toot.
The object, ot the lunge is to give a further reach to the saber and is made at the instant of delivering the cut or thrust in the attack or ripost.
262. Being at the guard: 1. Chomy. . 2 . Grard.

Plant the left foot fiffen inches in front of the right and take. the position of guard, leff foot in tront: change the saber into the left hand.

The quard is resumed with the right foot in advance by the come mand change guard.
263. To engage is to tross sabers, edge against cilge about eight to twelve inches from the point. The engagement is tierie when the. back of the hand is up, the edge of the hade to the right and the adversary's blade is kept the right. The engarement inversely- is quarte when the back of the hand is down. the edge of the blate t" the left and the adversaryto blade is kept to the left. The congage ment in tierce is generally the better because the more natural and easier position to hold the gaber.

The hanging or high endygement is when the saber hand is as high as and in front of the ritht shoulder. the back of the hand th the. left, the edge of the blade foward the front. the point about as high as the waist.

Being at the guard,

1. Fierce, … Evgaise
2. Quarte E. Evioatie.
3. High, 2. Eviacie.
4. All saber movenuents not specially excepted are exceuted from the position of guard The command !nmarl will terminate the morement.
5. The cuts are mande principally hy the movemente of the wrist, keeping the hand in front of the body near the line of defern. ? Which is an imaginary vertical line through the center of the boty- . otherwise the person will be exposed to attack and unable to recover in time to make a successfl parry or counter attack.

There are three principal cuts, i. e.. front, right and leit. Thu right and lef cuts are subject to any number of variations by the instructor designating the particular part or member of the lowly against which the blow is to be directed, e. g., right (or teft) whel side, thigh, leg, etc.

1. Fhont cit. 2. Giahp.
$\geq 66$. Raise quickly the point until the blade is nearly vertical. elge'to the front. withou any marked movement of the forearm (ㅆ) Cut to the front and ddonward, as at the head of an adverary at the same time extending the arm and left leg.

The cuts are made ligh $h y$. When they are made against an adversary the point is usually carried over the point of the adversarysaber.

2bia. Move the point quickly about cighteen to twenty-four incbes to the left of the line of defence. ( $\because$ ) Move the point and rut quickly to the right as arainst the particular part of the hody of the adversary indieated by the instructore at the same time extending the right arm and lett les. throwing the weight on the right leg.

1. A!minat left shmider (or side. eta.i, D. Lept crt. 3. Grind.

2tis. Move the point quickly about eishteen wo fwely-tour inches to the ritht of the line of detence. $\because \underline{\sim}$, Move the point and cot quickly the teth as asainst the particular part of the lody indiated by the instucors at the same time extemdins the right arm and left les. and throwing the weight on the right ley.

2ti9. The lunge may be combined with the colts and thrusts. The tronper is in-tructed that at the command tras be exerotes the lunge at the same in-tant he makes the cont or thrust : it exeruted without the number, then at the command rut, therwt. ette.
The Therst.

2ill. The thrust is an attank with the peint ot the sather and is usually made by lowering the point below the bade of the adrersary.

The thrust in adrised as preferved to the cut, especially monnted; the forwat movement of the lonse sives it torce amit does not derange the fosition.

1. TiekiE theist. ᄅ. (ifarb.
2. Raise the hathl the height of the neek and in front of the right shonlder. edge ot the blate up. point to the front and as high as the hreast. ( $\because$ ) Thrast the front as at the breast. etc.. of an adversary rasinus the hand as high as the forehead and extending the arm and lett heg. weight on the right hers.
3. Q'arte thrist. : (ifabd.

2-e. Raise the hand in guarte in front of and as high as the houlder, edge of the hade the the lef. point as high as the breast. 12 , Thrast to the from as at the breast. etc.. of an adversary at the same time raising the hand as high as the forchead and extending the arm and letl leg. Weight on the right beg.

## The Parries.

283. The parry wards off the blow of the alversary and should be made without disturbing the equilibriam of the benly, and only so far as may be necessary to cover the person. the point being moved as little an pussible to accomplish it.

They are simgle, double etc., according to the number. and are the anme as in the saber exiercise. (Pars. 244. $\because 45$ and 244).

In the parries the position of the hand and peint vary acoord ing to the direction of the blow, and so move as to receive the ad versarys attack on the for (strong) ot the blade. Which is the halt of the blade mear the hilg: the feathe is the hati near the puint The strength of the parry uminishes with the distance from the hilt

## The Feint.

274. The feints are indentional movements mate to deceive at adrersary by threatening fat or thrust ditferent from that in tended. They are simple. formbe. ete., acoording to the number of movements.

The feints by cuts are qually made by rawins the hade just sufficient to pass over the aplersary's point: and by thrusts namally. under the blade.

The feint should be wo well made that it will he mistaken for the intended blow, and thus thow the alversary oft his gramel exposing him to attack at another phint at which the lunge is quickly matle.
-20̄. The ripost is the quater attack. made ater having parried the adversary attack.

Withdrencing the ley is spe by moving the right her behime the left without moving the lather. This movement carries the boly beyond the reach of the adref sary and emables a ripost with a hoad hit. or hit on the wrist acpording as the attack was fore or hyw
the forearm. the forearm.
276. The troopers afte having been tatght the motions. tirst slowly, then rapidly, by the numbers are formed in two ranks tiat. ing each other, with intervhls of about two or thece vards betweot troopers. One rank is lesibnated $\mathrm{N}_{\mathrm{n}}$. 1. the other No. $\mathrm{N}_{\text {. }}$
276. The tronpers beifg first in prasion. the instructor com. mands: Prove Dintance.

Extend the saber to th front and raise the saber. edse to the right and take distance from the adrersary the print of the saber just touching the adversary hilt.

 for attack by No. 1, and the corresponding parries for detence by No. 2.

This attack is repeated seral times. and then No. 2 is cautioned to make the same attack, arhl No. 1 the defence; and so on with the various attacks and defencef. The trooper lungea at the instant of attack.

Examples: No. 1. Right ent at hes: No. 2. Right low parre. fower the point and hand amd commands: 1. Ansumte. .. (ivarb.

Aswint.
Front ent.
Risht burulder right cut
Right -ide. right cont.
Risht wherk, right ant

Left hacel. left ،ant

Lett side. heft cut

So.

## Parry.

Head parry.
Risht parry (raise the print and hatad
Risht parry.
Hean parre (hand in tront ot athl as high as the right -boulder. point higher that the head).
head parry, hand in fromt of and a little higher than the head. point below the -houhter.

## Ledt parres

The simple attarks and parries being familiarized the feints are (xplained and combined with the attacks. as

So. 1, Feimt right ut at leg, and attack misht check. No. 2. Parry low right and right had.

Atter the tropers have become famitiar with the garries the in structor will indicate the feint and attack only. the defence will make correpumding parries without indication.

The steps whe he combined with the attath. . g.. when No. 1 ath rames. No. 3 retires. ete.

The instructriexplains the ripost and tamiliarizen them first with the simple attatio amil simple ripost, amd carries them on up throurh the double. ette. attacks and riposts.
Mountid Fincin!.

2-9. This exercise is intended to mure nearly comphete the edncation of the horse and troper and to cultivate in them the prese ence of mind and individuality th inore suceresfully cope with the come during the melee intw which the charge finally rexolsey ita.lf.

The instructor varies the fencing exereines from time to time with some movemente on the track at all the faite, in order to relieve the monotong to those not immediately enzaged or to quiet the horses.

The sinads are formed at opposite ends of the hall. the instructor indicates one rank. No. 1. the other No. 2. then gives in detail the
attack. ripost and parries. first. when the troopers meet eath othen by the right, then by the left. and finally the attack and detenc. from the rear.

The engagement is nefce when the troopers meet with the al versary to the right and in quarte when on the lett. Eatch (oup). return to the left of their fank at the commanil mict.

The exercise will be had at a walk, trot and gallop.
The troopers are also formed into two ranks with intervals fatins each other, un explained wh/en dismounted. Par. $27 \boldsymbol{7}$. and are exereived.
280. In actual combat the trooper will put his enemy at at diadvantage by striking the enemy horses head. by sabering his bridle hand or reins; or lef attacking him on hiv right rear.

The greatest attention bhould at all times be given to maintain. ing the proper position and equilibrium of the body from which. b. too great an exertion in de ivering a cut or thrust the horseman may. be suddenly thrown. therepy losing the advantage of his skill in the use of his saber because of the effort he must make to regain his seat.

In delisering a forwarifthrust very little force is necessary whil. the horse is in quick motion, as the extension of the arm with a fomi direction of the point will be safficient. The forcing of the coup call be resorted to, when very near and closely pressed upon by an ahversary by suddenly extonding the arm and directing the edire across his face, or wherever an opening is given. beins carefal to guard against allowing an opening for the alversary.

When sufficient space if afforded tor choosing the point of attark. endeavor to take advantane of it; if this advantage cannot le taken. endeavor to prevent the ad persary from attacking on the left rear: ... meet this attack balt sudddnly to allow the adversary to pas- be. of bear over as closely to hing as possible. or turn quickly to the rish about and meet him.

When meeting an advepary to the left front turn sharply the left or left about on your onn ground which brings his left on your right, with the saber arm fee.

When pursued, endeard to keep the adversary to the right rear and goa can keep him at af distance by the rear cut and the thrant.

## SCHOO OF THE TROOPFR.

281. The object of thif school is to teach individual horseman. ship and the ready use of a mon on horseback.
282. Military equitation consists in the proper application of the aids in horsemanship, a d, in a settled balance of the body which
anables the tromper to preserve a dorret and firm sat in every variety of movement.

A thorough knowledge of military equitation is indispensable (1) the trooper that he may have the full treedom of his hand to the his wapons and te enable him to pertorm his daties with readiuess on all oceasions, wither singly or in rank.
-ss3. The progresion indicated in this selowol may be moditied at the diseretion of the otherer superintending the instruction. care beins taken to develop the contidence of the recruit by a progress ouited to his capacity and which will exempt him as far as prosihle from falls or other accidents.

The recruit will he tansht that his own disposition or temper is unatly commonieated to and reacts upon the horse and therefore it is to their mutual interest to preserve calmoess.

During the firs few lessons the instructor will devon his attention chictly to giving w the recruits the proper seat and cartage and to making them selfeontident on horvebark: he will guietly and patiently correct the fants of each individual as they oreur. firequently passing from one to anther, and will only exact by degrees the correct execution of his teachisiss: these understond and contidence imparted. the positions and motions will then be rigidly exacted.

The instructor maty dismonat if he can in that way the better - teach the positions. At all times he maintatins a military bearing ax an example to the recruits.

2St. Quiet well trained horses are tirst asigned. each recruit being required to change his horse from day to day.

2s.). All mounted instruction begins and ends at a walk. This rule is arreerel.
esti. During the drills in this sehool. the instractor gives the following rules for the care of horses until he is satistied by means of questions that they are thoroughly comprehended he the recruits:

Sever threaten. strike or otherwise abuse a horse.
Before entering a stall, speak to the horse gently and thengo in quietly.

Sever take a rapid gait until the horse has been warmed up by gentle exercise.

Never put up a horse brought to the ntable or picket line heated. but throw a blanket over him and rub his legs. or walk him until cool. If he is wet put him under shelter. and wisp him against the hair until dry.

Never feed grain to : horse or allow him to stand uncowerd when heated. Hay will pot hurt a horse. no matter how warm he may be.

Never water a horse when heated, unless the exereise or mareh is to be immediately resumed.

Never throw water orf a horse coming in hot, not even ovel his legs or feet.
the fafipment of the horse.
287. The instructor ifficates the different parts of each equif. ment and their uses before giving his instruction.

> To Fold the Sidill' Blanliet.
288. The blanket, after being well shaken. will be folded int. six thicknesses as follows Hold it well up by the two enrmers. Hw long way up and down; , ouble it lengthwise (so the fold will come between the ${ }^{*} U^{+\cdots}$ and $:=S$ ), the folded corner (middle of the blathe ket) in the left hand; tahe the folded corner between the thamb athl forefinger of the right hand, thumb pointing to the left : slip the left hand down the folded edge two-thirds its length and seize it with the thumb and second finger : raise the hands to the height of thi. shoulders, the blanket bequeen them extended: bring the hamds to. gether, the double fold falling outwarl; pass the folded corner trom the right hand into the lef hand. between the thamb and forefinger. slip the second finger of the right hand between the fisds, and soize the double folded corner; turn the left (disengaged) corner in, and seize it with thumb and foretinger of the right hand. the second finger of the right hand streteling and evening the folds: ather wen ing the folds, grasp the copners in the hands and shake the blankel well in order to smooth the folds: raise the blanket and place it lo. tween the chin and breadt; slip the hands down half way, the firtwo fingers outside, the dher fingers and thumb of each hamd in. side, seize the blanket with the thumbs and first two fingers. let the part under the chin fall forward; hold the blanket up. arms extended, even the lower edges, seize the middle points between the thumbs and forefingers, a 百d flirt the outside part over the right arm: the blanket is thus beld before placing it on the horse.
To Put on the Blanket and Sureingle.

The instructor commadils: Blanket.
289. Approach the horse on the near (left) side. with the blanket folded and held as jupt described; place it well forward on his back, by tossing the part of the blanket over the right arm to the
off (right) side of the horse, still keeping lowd of the middle points: slide the blanket once or wice from front to rear to smoth the hair. being caretul to raise the blanket in bringing it forward: place the forefinger ot the left hand on the withers and the forefinger of the right hand on the backbone. the blanket smooth: it will then be well forwart with the edges on the left side: remove the locks of the mane that may be under it : pase the buckle end of the surcin. gle over the middle of the banket and buckle it on the near side a little below the edge of the blanket.

> To Put on the Witering-Bridle.

290 . The instructor commands; Bridef.
Take the reins in the right hand. the bit in the left : approach the horse on the near side. slip the reins over the horse's head and let them rest on his neck: reall umder and put the togyle of the bridle through the right hatter ring. insert the left thunbl into the side of the horse's mouth alowe the tushes. and press open the lower jaw: insert the bit and pass the toggle through the leth hater ring. The bit should hang so as to touch. but mot draw uj. the cormers of the mouth.

The hatter strap is passed around the horses neek and tied securely, or is mbuckled and left at the manger or pickot-line.

To Cnlirille.
291 . At the command untrifle. pass the reins over the horse's head, and take the torgles out of the hatter rings.

## To Sudille.

202. For instraction. the sadhle may be placed fonr yards in rear or in front of the horse. The stirrups are crossed over the seat. the right one uppermost: then the girth and girth-strap are crossed above the stirrups. the strap uppermost. The blanket having been phacel as previously explained, the instructor commands: Saddee.

Seize the pommel of the saldle with the left hand and the cantle with the right, approach the horse on the near side trom the direce tion of the croup and place the center of the saddle on the middle of the horse's back wo it will fit close to it; let down the girthatrap and girth; pass by the horse shead to the off side. adjust the girth and ntraps and see that the blanket is smonth; return to the near side by the croup, raise the blanket slightly under the pommel arch so that the withers may not be compressed; take the girth strap in the right hand. reach under the horse and seize the girth ring with the
lefthand, pass the end of the strap through the ring from underneath (from inside to outside). thof up and through the upper ring from the. outside; if necessary, makefanother loop in the same manner. the enil of the strap being brought hrough the upper ring to the front: sei\%. it with the left hand, place the fingers of the right between the outside folds of the strap; pulf from the horse with the right hand aml take up the slack with the fett; cross the strap ower the folls, pathe end of it, with the righ hand, umberneath and through the upiner ring, back of the folds, the down and under the loop that crossithe folds and draw it tighth; weave the ends of the strap into the strands of the girth; let down the right stirrup, then the left.

The girth when first tihd should admit a finger between it amb the belly. After exercisin for awhile the sirth will be found to.. loose and should be tightoned. The sureingle should be a little looser than the girth.
293. To approximate the length of the stirup strap before mounting, they are aljuste so that the length of the stirrup strap. including the stirrup, is abfat one inch less than the length of tha. arm, fingers extended.

## Fo Unsididh.

The instructor command
294. Stand on the nearpide of the horse: unbuckle and remore the surcingle; cross the left stirrup over the saldle: loosen the girth strap and let down the girth: pass to the off side by the croup. crosthe right stirrup, then the $\&$ rth: pass to the near sile be the croup: cross the girth strap over the saddle: grasp the pommel with the left hand, the cantle with the right and remove the saddle over the croup and place it. as may de directed, in front or rear of the horse. pommel to the front; grasp the blanket at the withers with the left hand and at the loin with. the right remove it in the direction of the croup, the edges falling tog ther, wet side in, and place it across the saddle, folded edge on the ponmel.

If in the stable, place the saddle on its per as soon as taken oft the horse.

> To PyAn on the Curb Brilli.

The instructor commande: Brides.
295. Take the roins in the right, the crown piece in lef hand: approach the horse on the near side, passing the right hand along his neck; slip the reins over his head and let them rest on his neck: take the crown piece in the right hand and the lower left branch of the bit in the left hand, the forefinger against the mouth-piece:
hring the crown piece in front of amd slightly below it proper position: insert the thumb into the side of the mouth above the tush : press open the lower jaw. insert the hit by raising the crown piece: with the lett hand lraw the car gently under the crown piece beginning with the left ear: arrange the forelock, secure the throat latch and then the curb strap. taking care not to set them too closely.

The mouthpiece rests on that part of the bars directly opposite the chin groove: the curb strap will then lie in the thin groove without any tendence to mount up out of it on the sharp bones of the lower jaw. This position of the mouth piece will be attained tor the majority of horses by adjusting the cheek straps so that the mouthpiece will be one inch above the tushes of the horse and two inches above the corner teeth of the mare.

The thront lateh should admit four fingers between it and the throat: this prevente constriction of the wind pipe or pressure on the large blood ressels

The curb strap or chain foould he flat and smooth in the chin groove, and loose enough to admit one or two tingers when the hranches of the bit are in line with the cheek straps.

At the discretion of the instructor, the halter may be taken off heforn bridling. the reins being first passed over the neck: if the bridle the put on over the head stall, the ${ }^{\text {Phitching strap. if not left }}$ at the manger or picket line, will be tied around the horse's neck as in Paragraph $2!0$. The hitching strap may alse be arranged as folhows: Loop it two or three times through the ring so that the loop, may be about eight inches long: wind the strap sereral times around the loop and draw the end tighty throughetr:

## To Unbridle.

The instructor commands: I'sbrible.
296. Stand on the near side of the horse: pass the reins over the loorses head placing it on the bend of the leftarm: unbuckle the throat latch, grasp the crown piece with the right. and assisting with the left hand gently disengage the ears: grasp the bit with the lefl hand and gently disengage it from the horse's mouth by lowering the crown piece: place the crown piece in the palm of the left hand. take the reins by the right hand, pass them together over the crown piece, make two or three turns around the bridle, then pass the end between the brow band and crown piece and draw it.

It is hung up by the reins, or placed across the saddle on the banket.

It the hove has no bater on, unbridle as before amp push the bridle back wo that the crown piece will rest on the nerk behime the. poll until the hater is replaced.

> To Roll the Orerciet.

396 . Spread the overfont with the lining or inside down: follel the sleeves square across, the cutfo tonching at the back seatm: - proal the cape with the edges $p^{\prime}$ rallel to the fiont edres of the abat. the. cape reefed and drawn to tho back seam: turn the tails under abom nine inches, the folded edfe perpendi-ulat to the back seam: toht over the frout edges of the lonat and skirt to (form a rectangle, aboun thirty-four to thirty-six inders across, aceording to the size of the. coat: roll tighty from the follar with the hambathl knew alld brintover the whole roll that intre of the skirt which was turned under. thus binding the roll.

> - Tir Roll the B等t Bhaykit and Shelter Tint.
> (The blank meashrer $-2 x+4$ incties.
gas. Spread the shelter tent and tarn umber one end athent wh inches.

Fold the banket to thate thicknesess arross the hageve entere the folds then measure twentyfeight inches wide: pace the blanket thinfolled across the midnle of the shelter tent, the end of the folldel blanket about one inch abpre the folden edge of the tent; fold the exposed parts of the tent fover the blanket: roll tighty trom the (exposed) end of the blafket with the hamds and kilees and brines over the whole roll that part of the tent which was turned under. thus binding the roll.

On aceount of the ind fasticity of the cansas it will be foment necessary just before turnaty over the part which binds the moll t. apread the canvas a little ohere it folds inside. at the cond of the roll
To Park the Sirdllt.
290. Orercoat rolled at prescribed and strapped on the pommel banket, with change of cibthing inside. is rolled in the shelter temt (the roll not to be less than twenty eight nor more than thirty incher in length, according to bulk); mosi bag slipped over the roll outidu. of the shelter tent on the hear end and the strap buckiled ower the off end; side lines to be sppenil out over the blanket roll. the leather ends being brought together and the whole secured by the caintle straps; lariat rolled aroughl the picket pin and snapped into near cantle ring; conteen with (aiz) on strap attached to off pommel rines:



Fistral ammanition amb rations to be divided an as to cepalize the weight in the sathe hags: aloo. extea horse shoes ( fitted) and mails ( printed, when on arobe arrice am liathe to be weparated from trampurtation. When the haverack is carried the ehange of clothing may be paced in the sathle hage and the haversack. With the rations. meat can. etc.. will be carried on the near side and secured be pasines the haverack orap over the banket roll and under the off end: in thiv case the tin cup will be attached to the haversack strap.

On the marel the lariat to be coiled amd tavened with a thong to the near pammed or cante ring paseine under the the left stirrup strap i theree end napped into the hater ring.
(iemerally in field servere the bed banket shomble belded and phaced orer the saddle biatere on the horse.
Thi Pr,wition ut Stamd tu Horwe.

The itustrefor commamals: Staso To Morse.
:3oll. It this command each tronper plates himself. facing to the tront. wh the weat site of the horse the eves an a limetrith the front or the horee shal. su be catn see along the font and takes the position of a soblier except that the right hand maik down. graspe both reins. the torethrer aparatug them, six inchen trom the bit.
T.) Lont Out.

The troperes standing to hore to leave the sable or picket lime. the instrutor commands: leaf itt.
 and firm. conducts his horse, without looking at him. Wo the phace designated be the instractor.

If the hove shows a dieposition to resiat lming led, the tronper takes the reins trom the horse seek. bakes the unds in the left band. then, with the right hand holling the reins. conducts the horse an before. When leading through a low or narrow doorway, the horse whould be queted ly the voice or caressess and not allowed to pass throuyh hurriedly. The instructor may diect the trooper to face towark the horse holding ane rein in each hand. dose to the bit, and lead him by stepping batkwari : atter pawing the doorway the trooper condacts the home as betore.

The tronpers tirm in single rank from right to leta, and until further order, with intervals of three yards.

The instructor commands: 1. Right (or lift 1.2 . likess. ; Front.
302. The troopers dres to the right and move their horses for ward or backward. as may be necessary to align them.
To Mront (Without Sadill').

The instructor commatds: 1. Prepare to monnt. 2. Moist.
303. At the first com hand, drop the right rein, take two back steps, stepping off with the left foot, at the same time sliding the right hand along the left pain; face to the right as the right foot is being planted, and bring the left foot by the side of the right. 'This should place the trooper behind the near shoulder of the howe. Take both reins in the right hand aided by the lett, the reins coming in on the side of the foretinger, the loose end falling over on the oft side; place the right hand bn the withers, thumb to the left, fingers to the right, holding the reths short enough to feel lightly the horse', mouth; place the left baqd on the horse's neck near the withers. and grasp, a lock of the mane, the lock coming out between the thumb and foretinger.

At the command mount, spring lightly from the sround and raise the body, keeping it erect, and supporting the weight on the hands. (Two.) Carry the right hig, knee bent, over the horse's back. the weight still borne on the hadids; sit down gently on the horse b back. and take one rein in each hand, the reins bearing equally on the horse's mouth.

In the earlier lessons the recruit may reat the right forearm on the horse's back to enable fim to raise the body when mounting.

> Position of the Trouper. ( Without Sathll').
304. Body balanced on the middle of the horse's back.

Head erect and square do the front.
Chin slightly drawn in
Shoulders square and upll thrown back.
Chest pushed out.
Small of the back sligh ly curved forward.
Elbows slightly to the gear of the points of the shoulders.
Forearms borizontal and close to the sides without pressure.
Wrists turued in slight $f$.
The right rein in the fight hand, and the left rein in the left hand, coming in on the uffer side of the little finger, and coming out over the second joint fof the forefinger, which is slightly pro-
truded to the front of the other fingers. and on whid the thumb firmly hods the rein. the rein- bearing equally on the horse's month: the bight (end) ot the reine falling to the front and on the right side of the horse's neck: the other fingers closed on the reins. the nails wwame the body

The hands about six inches apart on a level with the ellowe and the barks straight up and down.

The butucks hearing equally on the middle of the horses back. the seat heines as flat as possible.

The legs strethed by their own weight, the flat of the thighesand knees clapping the horse equally.

The leese from the knees down bertical and tiee
The fiet parallel tif the siden of the hurne. or. as neatly or as the conformation ot the man will permit.

> Remurks on the Presition ut the Tronper.
 the point where the motion of the horse is heast commanimated to the rider.
 firward or to one side ami he unstealy
 dropping to the tront.

Shoulders squere and "rell throur" hack and the ahest pushed out. It not the chest will be contracted and the hack curved to the rear.

Small of the betk slightly ruried to the rront. Is this firm favors an erect carriage and eounteracts the tendency to slow hor drop the shoulders.

Ellu,irs slithtly th the reter if the shoulders. To assiot in kerpinar the shoulders back.

Forearme horizontal and chose to the sides rithout pressuce. To pres rent their being thrown wut when the horse trots: if with prensure, the motion of the body will be communicated to the hand and reins

The arists turmad in slightly. To assist in keepines the ellowis. -lose to the body.
 that the body will preserve its steadiness.

The net of the thi!hs and the kinees rlasping the horser ainilly. To give a firm, steady seat.

The legs, from the kneos dorn vertiod und free. That they may be carried to the rear. in aid in directing the horse without deranging the seat.

The feet purallil to the position.

The body from the hipu up should be movable and should. it : meanare, yeld to the motions of the horse: from the hipe to the knees, immovable and closi to the horse: from the knees down. mow able.

The arms move freely hat the shoulere to atodid conmmanatitne the motion of the boly to the reins: the hambuncillate slightly with the motion of the horse. fut with that distimetion the $\because$ are station ary, except to direct the hafre.

During the earlier lesegns the jonition of the recruit is mexome rily one of const maint.

No man can be said to the a grod horemath who has wot a tirm well balanced seat: it is therefore of the utmont importance: it will assist the horse; the wat of it. will imperte the horse a actions. make sore backs. ate.
To Lem!
305. Bring the hands fowards eath other withont turnine them in: grasp the right rein whth the thamb and tometinger ot the left hand, a short distance fronf the right thamb; relin the eranp of the right hand. and allow the brein to slip through, tust the proper bearing. then dose the righ hand and replace the hamb-
To Tubiffly Reine in Ow Himel.

30ti. To relieve the chentratint of the arms he changines their position, as well as to prefare the reernits for the we of the curt
 Take Reins.

At the second command, bring the left hand oppenite the midhle. of the body: half open anf place in it the risho rein. howling both reins as explained for the 胜t rein. except that the lithe finger arparates the reins, the right rein coming in alowe the lithle tinger close the left hand and dropt the right behind the thigh.

> Trud Ajust the Rivine.

3n7. Scige the bight with the thumb and foretinger of the risht hand; partly open the letif hand so as to allow the reins to sip through it; raise the righthand until the reins bear equally: droe the lef hand upon them. hetting the hight tall ower the finetinger and right rein: drop the right hame.

## 

: ans. The reins beine in the left hand the in-tructor commanla: 1. In both homd. : T. Tane rems.

It the second command. hatt opell the left hathl, seize with the right hand the right rein and hald them as previouly described.
T., Dr.,p Rcius.

Frop the reins on the howe neek near the withers and drop lath hatma lewhind the thisha
Tu Ritali, fire
:310. The inatractor commands: Take retss. The tropher re take-s the reine and hodis them as hetore dropping them.
 most.
311. At the first exmmathe gase the riarht rein inter the lett hand, then seize luth reins with the right hame in tront of the lent. ath plate the risht hamb on the withere thamb to the left. fingers to the right, the reins emming into the hand hetwern the thumband
 neek. direetly in tome of the withers and grach a heck of the mane. the lack confing out between the dimmb:and toretinger

At the command dismentit. mase the body on hoth hamde. carry the right heg. bue bent over the horses hatk without tourhing it: bring the risht les near the lett and come lighty to the ground on
 drep the right roin, tep th the fromt, siding the right hand atong the lett rein. and take the position of stathe the harst.

The troope being monated, to dimonnt on the off side. the in-
 blamost
312. The seond and third commank are executed asprevinusly
 on the oft side.



The instructor commands: 1. Prepare to morst. ©. Matst.
313. The commands are execoted as prevously explained. hint by inverer means.
314. If the command be, 1 . Siful, 2. Mocnr the men exerut. at the command mount all that has been presoribed at the command. prepare to mount and moun

If the commands be $\{$ 1. Squad. 2. Dismotist. or 1. Tu, the right, 2. Squall, 3. Dismodnt.

The men execute at thp command dismum, all that has been pre seribed at the commands dipepare to dismonut and dismiont.

These rules are generif, the command platmen. tromp. etc.. le-inw substituted for the commaprel sifuth.

To Rest.
The instructor commadds: Rest.
315. If the squad be dismounted. it is exeruted as in the sohool of the Soldier. except that the troopers retain hold of the reins and keep their horses in place

If the squad be mounfed. either marehing or at a halt. the men are permitted to turn thein heads, to talk. and to make slight changeof position, but they will fot lounge on their horses.

The command stamd offerest is executed as in the sehowl of the Soldier.

If the squad be monneal the instructor commands: 1 . it citae. 2. March.

The men are permittedth turn their heads or make slight changes of position, but preserve sfience.
 Attention.
316. At the command. attention, each trooper. if dismounted. Lakes the position of stanf to horse: it mounted. he tiker the proi tion of the trooper. Thispule is gentrul.

To Dismiss the $S_{q}$ uctil.
The squad being dismpunted, the instructor commands: 1. Bu the right (or lift, or right afd left). ㄹ. Break rank. 3. Manch.
317. At the command patrih, the trooper on the right leads hihorse one yard to the fron\# and then marches directly to the stableor picket line.

The troopers execute in succession the same moventont wis 1.1 follow the horse next on the right or left, at a distance of one yard.

The men remove, cleanland put the equipments in place. care tior and secure their horses under the directions of the instructor or senior non-commissioned offeer.

Each man, as soon as he has finished stands to heel. The in. structor or non-commissioned officer having satisfied himself by in-
spection that fhe horses and equipments are properly cared tor and that the precautions required on their return from exercise have leen observed, orders the men to tall in, marches them to the tromp parade and disminses them as preseribed in the sehool of the soldier.

31s. Stam to hel. eath man stamds at attention. one vard in rear of and facinghis beel post. St the pieket line he stambe at attention one gard in rear of and tacing his horse.

## NHITEB EXERCLEA.

31!. The mounted exercises make the rerout arile and supple. give him contidence and coable him to maninain a halamed seat on his horse in every variety of movement. . It trooper will be frequently practiced in them. in order that the agility and suppleness they have acquired may lee mantained.

Whenever practicable the recruite will be prepared for instruction in this sehool by the execution of the mountinss and dismountings and other mounted exereines. with a wooden vaulting horse about fifteen hands high. or with a borizontal vaulting bar, the height of which will depend upon the ability of the man. heing gradually raised until at the height of a horse.

To give confidence to the men the horse's which are apt to become uneasy during the tirst few lessons will be tied in roomy stalls. to a fence or 7 t walls of the riding hatl. or the horse may be put on the longe, the fromer dropping the reins.

The horses have the watering brille and at the discretion of the instructor mar have the sadille pat or hanket and sureingle. If the horse be tied it is recommended that the pad or bathket be dispensed with.
 or on the longe. to moant. dismount and to bold the reins, and when they have some contidence on horsebatk. which should be atquired atter they have suceeded in executing with rome facility as far as to include the eighth mounted exereise, the exercises are then continued with the horses in line with intervals or in column of troopers: also the instruction in marehing and the ase of the gids will then begin and thereater form a part of each lemson.

When the monted exercises are correctly executed at a halt. they are repabed at a walk, then at a trot and tinally at a canter.

The tropers will not lie reguired to go through all the monnted exercises in the order in which they are described; the more dift. cult exercises not being attempted and the gaits of the easier ones being restricted to a walk, until the troopers have arquired a secure, well balanced seat at a trot and a gallop.

During the exercises the tronper drops and retaken reins. With. out command. whenever phecessaty to execute the motions or th control his horse: and when he dismounts. he remains neat the shoulders of the horse and bas one hand on the withers (ore pomenel. horses saddled). When the horse is bot led. the hathi on the with. ers ( ${ }^{\text {nommel }}$ ) holds the refns with a beating just sutticient to let the horse know he is under control.

To resume position of shasis to horse. the instructor commands Stand to Horne.

32ll. In the exercisestat a trot abil canter. the tronjer when dismounted keeps pace wifh the horse at the shoulder by mealls is the gatlopingestep. Which he executes (keeping ane hand on the horme), by a succession of heaps. arising and alightiag in harmome with the rise and fall of the forehand of the horse keepinge the left or right toot in adrance afferding ats he is on the lett or right sith. of the horse, and suppording his weight on the halls of the teet. Frequent brief restes should he given in order met to stain or unduls. fatigue men who are not adgentomed to the exerevises.

The first, thiril. fourth. \#ifth. sixth. seremth. cighth. ninth. tenth. the first part of the fitteent and sixteenth cxercises may he exeroltel as preseribed in the sehoon of the soldier.
first mainten maibote.
3:1. 1. Lean Back. [be Lean back until the had reot-on the horses croup; the hander resting on the thisfis.
['P. Resmme sradually the presition of the trupher withent de ranging the position of the fiet and legs.

SECONI MOTNTED EXEHTISE.
32:2. 1. Ratse Knees. ${ }^{2}$. Down. Rase the kneer mutil the thighare horizontal: the lower lige vertical : the toes on a level with the heels: the londy erect and the shoulders square.
bows. Resume the position of the troper.
third Nol NTED EXERCLSE.
30:3. 1. Rane Feet. Down. Raise the feet tothe rear athlahigh as practicable of the filles of the horse: then raise the kinekecping the feet in place. until on a level with the ankle.

Dows. Resume the pontion of the trooper.
FOCRTH MOINTED EXERCISE.

1. Right (or lett). $\stackrel{y}{l}$.
2. Turn the bonly to the right, carry the rish knee twarats the rear, the lese antrife the horse the feet pointing th the right. henty erect: the hats rosting on the right thigh.

Frover. Resume the powition of the tromper

## FIFTH MOISTES EXPRCDE:


 ont the - wat athl st taced the the horees right: the hoty ereet. the
 the same chamant the troper pasing the rirht or left lege orever the renyf or neck of the hater.

$$
T h R \ldots \ldots \ldots
$$

The olpeet of the reathe- is to teath the reernit to regath his batance we impres him with the importance ot the hold of the legs. allul contirm him in their uace and to prepare him tor the nse of the ather monntere.

## SNTA MOI NTED EXERICIS:


Carry the right haml hatk up, strathot the from tingers and arm extended alld lurizontal.

- Two. Clow the late firmly. oweop the hathlyuickly to the right.

, Three., he-rame the position if the trooper.


## SEDESTH MOISTED EXFBCISE.

 limach.

The firs motion is the same as right reade
-Two, sweep the hand quickly by the right tothe rear kerping the arm horizontal. at the salle time makine a right tinee and leaning the body th the rear.

- Three, Re-mue the proition of the trouper

 At the second commami. hold the reins with the thamb and finefinger gravp a loek of the mate with the left hand.
(Two.) Bewd the looly w the fromt and downard. to the right of and near the horse: the right arm extented athl the thigere as near the ground as possible.
(Three.) Resume the position of the trooger.

329. The horse being saddled. the instructor commands: 1 Right (or heft) low, 2. Red er.

Hold the reins with the thumb and forefinger and grasp a lank of the mane with the other fingers of the left hand: free the left foot from the stirrup and garry the leg. knee bent. to the rear, sulu. porting it just above the a
(Two.) Bend the body: Ink against the cantle of the saddle.
(Two.) Bend the body d the right and front, and near the horse carry the right foot in the stirrup slightly to the rear. supporting it against the side of the hone: extend the right arm and touch the. ground with the fingers.
(Three.) Resume the
330. Being in line wi the instructor commands: Right (or left) low, .3. Res

At the first command, to the right of the horse : a the right low reach and pi

The same exercise maj The instructor observes that horses; that each trooper demonstrates his inability-
ninth
331. The trooper mounded and at a fare to the left (or right, in


At the first command place the right hand on the withers seize a lock of the mane with the left hand.

At the second command, support the weight on the hands. turning the body to the right bout, legs extended and joined, then pasthe right leg. knee bent or let the horse's back and take the position of trooper

## tenth hinted ex ermine.

332. The trooper mooned at face to the left. to dismount. I Prepare to dismount, : I. In worst.

At the first command, a lock of the mane with the fla
ce the right hand on the withers: seize left hand.
At the second command, support the weight on the hands. turn. ing the body to the right about, descend lightly to the ground on the balls of the feet, bending 4

If the trooper be at fade to the right, to dismount on the off side. command: 1. To the right

Executed as just described except that the positions of the hands are reversed, that the body is turned to the left about and descends ., $n$ the off side.

## ELEVENTH MOH'NTEO EXERGUE.

333. The trooper mounted at face to the left. to dismount on the ,f ti side: 1. To the right. prepare to dismount. 2. Dismorent.

At the first command. place the right hand on the withers: seize a lock of the mane with the lett hand.

At the second command, support the weight on the hands, turning the body to the right about. pass both legs. joined, over the horse's hack and descend lightly to the ground on the off side, alighting on the balls of the feet. bending the knees a little.

If the recruit be at a face to the right. to dismount on the near side.

Commands: 1. Prepare to dismount. 2. Dismocnt.
Executed as just described. except that the position of the hands is reversed. that the body is turned to the left about and descends on the near side.

## TWELFTH MOUNTED EXERCISE.

334. The trooper mounted, to face the croup: Far th the right (or left) Abort.

Place the right hand on the horses back behind the seat (with addle on (ante). left hand on the withers (with saddle on pommel) : raise the body, arms extended.
(Two.) Tilt the body to the right, elevating the buttocks. change the right leg to the near side. left to the off side. and take position facing the croup.

The trooper facing to the croup, to face him to the proper front, the instructor gives the same commands, which are executed as just explained.

It is preferable for the troopers to go through this exercise by individual trial, until they have gained the confidence necessary to facility before requiring them to execute it at the command.

## thirteenth mounted exercise.

335. To mount, marching: 1. Prepare to mount. <compat>ᄅ. Moist. Executed as prescribed from a halt. except that the trooper is at a galloping step; that he springs forward as he rises. and that as he drops into his seat, he catches against the flank with his leg to avoid passing over the horse.
 the right. prepore to disment $t$ ). ㄹ. Dismorver.

Executed as preseribelfrom a halt. except that when the lexs ane joined, the trooper presses the left leg against the side of the hores to push his body clear, and alights on the groume filced to the firmo and takes the galloping sten.
fiftesifir mointed exercise.

Executed from either fide of the horee. as preseribed tor the mount from a halt. except that the trocorer leans the twidy forward and carries both legs joineflover the horse's back withont tonching it; as soon as the body of atrs the horse be eases the right hathi gradually and takes it off the withers (pommel), inst before comint to the ground. alights on bifth feet and drops the lett hand.

$$
=
$$

Esecuted by the same fommands and means as a halt. exerph that the trooper alights facfug to the fiont. and takes the gallopinis step.
338. When the trooper is sutticienty well instructed the in. structor may combine the mounting dismonting and vallting For example: Mounted faged to the left. the instructor commanl-:

sixteenon mol Ntel enercise.
339. To jumpon "ful of er the horser. The squad being in lime at stand to horse without arps or spurs. A quiet hove is held with his side towards and fifteqn or twenty yards in front of the line. The troopers will be instrpicted as to the kind of jump they are to make. At the command: 1. First trouper from the lift, 2. MariH. the first trooper turns his hprse over to the trooper next on his risht or left: walks along the font and when opposite the horse to he jumped faces himard takes a fast ran; upon reaching him he placehis hands on the horse's batk. jumps astride of him or over him an directed, returns to his plece in the rank and resumes his horse. Each of the other troopers moves out successively at the command next.

The troopers will be expreised at jumping on the hove from the direction of the croup.
seventeefth mocnted enercise.
340. To.mount doulle "d to dismonnt. The squad is divided intu two equal parts; one part, d signated the first section. being mounted.
and the tromper called individually Nos 1 : the other part designated as seromb section. heing dimomoted, and its trompers called imblividually Nos. $\because$.

Nos. 1 remain with their horses and Nos 3 are ardered to join Nos. 1: or. it in the riding hall. the first seetion is put on the track in column of troners marching to the lett hand and the second seetion ordered to join it. Suse place themselves on the near side and near Nos. 1.
 takes the reins in the risht had. lower. the heft shoulder and carries the left elhow. hent. the the rear, and supports himself by elasping the horee with the leges and, it neeesary. phaces his right hand on the horses neek or withers: So. 2 elasp the forearm of No. 1 with his left hamd hank of the hamd up: places his right hamd on the horses batk direety lehind No. 1 and it marehine takes the gat lopiner atep.
 self hehimd No. 1, atrifle of the horse and tacing to the fromt: No. 1 at the same time rainins his lett shoulder and leaning his body th the right to asoist aml apport So. 3 and immediately resumes the ereet perition: Xo. estadies his seat berang the hands under the armpit- it So. 1. thumbs behind the shoubler.
341. Beiner manted double. W dismouet

At the first rommand. Xo. I takes the reins in the right hand: rarries hiv ellow to the rear and steadies himself as at the command propere to mene, for mounting double: No. 2 . prewsing against No. 1, pushes himself slightly the thear. and places hiv right hand on the horse's back between himselfand So. 1 , and his left hand on the left forearm of So. 1 outside of the ellww. back of the hand up.

At the secome command. No. 2 carries the riarh ber wer the eroup and comes to the ground. supporting himeelf by his hands. without hanging on No. 1. and takes the gallopinger step.

It the command be: 1. Number ome. P. Preparfe to mixarst. 3. Desmotwt. So. 1 drops the reins. phaces his left hand on the left thigh of No. 2 . and graspa lock of the mane with the right hand; at the command dismount. No. 1 passes the right leg over the horse's neck, rasing the right haml and re-seizing the mane as the leg passes springs fom the horse, pushing himself forward with the left hand and supporting himself with the right, comes to the ground and takes the galloping step. No. 2 then takes the reins and seats himself torward: No 1 retains his hold of the mane until
he can safely do without it fand then takes position as No. 2 alonur side the mounted trooper, wow become No. 1.

If the commands be: h. Squid. ㄹ. Dismotent. both trouper being mounted) first No. 2 dismounts, then No. 1 in front of No. 2 At the command: 1. Syuif, 2. Mocst. (both troopers being dia mounted) No. 1 will moun and then No. 2 .as previously explained.

If. when the squad is di mounted. the instructor wishes No. 1 t. become No. 2 . and No. 2 to become No. 1. he commands: Cuavif: nombers, when the troopers take places according to their new numbers.

These exercises are exeduted on loth sides of the horse and at all gaits.

## the aips in horsemaviship.

342. Preparatory to the morements. the instructor mounts the. squad and explains the use of the reins and legs.

The applications of the reins and legs. by which the movement. and gaits of the horse are fetermined. are called the Aids.

The trooper should not only know when to apply a given aid. but he should also understand why he applies it.

The reins serve to prepare the horse to move, and to graide. sup. port and halt him; their agtion should be gradual and in harmony with that of the legs,

In using them, the arms should have free action at the shoulder: when a light pressure will pe sufficient to govern the horse, the action of the hand should bo at the wrist; for greater pressure the elbow should be carried balk, but without raising the hand.

In riding, the hand should be kept steady, and ought not to move with the body; at the same time it must be kept light. for the bit causes pain if presse constantly on the mouth, lestroys its sensibility and makes the horse's mouth hard.

The hand is light whep its pressure is not greater than necessary, and when there is an almost imperceptible alternate feeling and easing of the hand an harmony with the motion of the horse. by which the delicacy of the mouth is preserved and he is male to carry himself light.

That hand is best, whic by giving and taking properly, controls the horse with the least frce and will best preverve the mouth.

As a rule it is recommended that the recruits ride with one rein in each hand; this will prdrent the bad habit some get into of holding the left shoulder adranced.

The legs serse to assis with the reins, in controlling the horse. Closing the knees, withou pressure by the lower part of the leg.
tends to steady the horse in position. Clowing the lower legs equally with slight pressure prepares him to move, or if moving to keep him up to the hand. Ciosed with: greater pressure they urge him torward.

Carrying the right (or left, leg to the rear and cloghg it with pressure. causes the horse to move his haunches to the left (or riphts.

The pressure of the legs must be an elastic mascular action: a heary clinging pressure, or a dull thumping with the heels must mot he permitted.

The reins act to direct the forehand: the lower legs incite to action and govern the movementa of the hauncher.
To Gather the HIrrot.
343. Close the knees gradually and gently at tie same time turn the little finger towards the body: this is to attract the attelltion of the horse and to prepare him to move. that his firwt motions be neither too ablirupt nor too slow.

## To Marr\%.

Being at a halt, the instructor commands: 1. Formard. Maron. 344. At the command formard gather the horse: at the command march bring the hand a little toward the boly. turning it in the wrist, that is, rein in slightly, then immediately yield the hand and close the legs wlightly to the rear. with a firm. equal and rlastic pressure until the horse yields to the impulse: then relax the pressure of the legs and adjust the reins so as to keep the hands in proper position and have a slight feeling of the hit.

## To Healt.

Being in march, the instructor commands: 1. Squad, ㄹ. Hal.t. 345. At the command "squit." gather the horse without slackwing the gait.

At the command ${ }^{-H}$ Halt." rein in by gradually bringing the hands towards the body, turning them on the wrist and carrying the dibows slightly to the rear, at the same time close the legs to steady the horse. When the horse stops. relax the hands and legs.

Being in line with intervals, to march by the flank. the instructor commands: 1. By the right (or left) Hark. o. March.
346. At the first command gather the horse; at the command march open the right rein and close both legs. the right leg a little more to the rear than the other; turn to the right by moving the horse over a quarter of a circle whose radius is two yards: when



the turn is nearly ended, dminish the effect of the right rein and lew asing the left rein and legtifo straighten the horse; when the turll is completed, close both figs and move off at a right angle to th. original direction.

When executed at a thot or gallop, the effect of the muter, it this case the left) leg sho hld be increased to sustain the horse.
347. A squad having geen marehed by the flank from line with intervals, is in column of troopers. with the distance of thur thei from the head of the horsd to the croup of the horse next in from of him.

For convenience in est mating spaces, eath horse with his ridhe. is considered to occupy a ppace of three yards in length and wh. yard in width, but by meqpurement the howe oceupies only atmat right feet in length.

Marching in column of troopers, each recruit should so condurhis horse that the recruit hext in front of him shall hide all wherin front; all follow in the frace of the conductor or leating tromper

Distances when lost shfuld be regained gralually.
If the column of troopers be marched by the fank. the splat will then be in line with ittervals of three yards between trooper-

348 . To halt the coland of troopers and to resume the mareli. the instructor commands: Sidurd. ․ Halt. and 1. Firiraril. : Marcil.

To
349. Being in line wi ${ }^{\prime}$ intervals. or in column of troopers. the instructor commands: 1.\|Right (or left) "hout. : Marin.

At the command mare feach trooper turns his horse on a hatt circle with a radius of the yards and then mores off in the new direction - the former reat

If in line, the instructor may command: 1. (iuider right (or l... or center.,

To halt unon the com letion of the ahout the instructor ...ntu mands: 1. Squad, 2. MA.t.
to obliqte.
350. Being in line with intervals, or in column of troopers. the. instructor commands: 1. Right (or left) oblique. 2. March.

At the command maref each trooper turns his horse half right on an eighth of a circle afd then moves at an angle of forty-fiv. degrees to his former direftion.

To resume the originafdirection, the instructor commands: 1 Forward, ㄹ. March. At dhe command march, each trooper turin half left and then moves
351. If. when obliguing. the commands: 1. Sifud. ㄹ. Hat.t. be given. the troopers halt in the obligue position: they resume the ohlique mareh at the commands: $:$ Ohiqu'. ㄹ. Mancm.

3 Be. Marcinge in columb of trongers. thenge dirertion, the instructor commands: 1. Colum rimht or lath . or 1. Colamn haltright (or half-lett). M. Machs.

At the command mard. the leading tronper exeent se the turn. or half turn to the right and marches in the new direetion: the other troopers turn suecessively on the same sroond.

If at a halt. th mareh and change direction at the seme time. the instructor commands: 1. Firncori. ‥ Column right (or laft). (or ?. Colum" half-right or left). 3. Marell

At the tirst command all the troopers gather their borses: at the command march the leading trooper tarns to the right. the other toopers move forward and in suceresion furn on the same ground.

To Ri" Bu\%
353. Being in line at a halt. the invernetor command: 1. Bum.


At the command brekerarl. gather the horee: at the command merrch. keep a firm seat. hold both legs close: roin in gradually until the horse vields to the pressure of the hit and steps to the rear: then immediately fied the hamd slightly to allow the horse to regain his halance keeping both legs doned continue in the same manner to yield the hamd and rein in atter each step.

If the horse temis to raise his nose and throw his weight on his haunches. hold the hands low and play the reins with rapid motions of the hands until he yields.

If the horse throws his hamedes the right. ease the left leg and dose well the right leg; if to the left, ease the right leg and close well the left leg. If this be not sufficient to put the horse in proper prostion. pen the rein on the side toward which he throws his hannches. supprting him at the same time with the other rein.

## AIIGNMENT.

354. To wive a general alignment to the squal the instructor orders any recruit to move forward or rein back. so as to be in line with the other men.

## Remurl.

For eonvenience the instructor may cause the recruits, upon leading out. to torm line with horses one foot and a half apart, and teach them to mount and dismount in line, to march by the
nank from line, and to form fine from columu of troopert, only employing these movements to aegin and end the drill, the interval of three yards being maintaing as before during the instruction.

To Mount it Line ( ${ }^{\text {rithnut }}$ Suldde).
355. The instructor callses the men to count fours and com mands: 1. Prepare to mount 2. Mocnt. 3. Form. 4. Ravk.

At the first command th odd numbers, stepping off with the left foot, lead their homes four yards to the tront, keeping opposite their intervals, and regulating by the right; all then prepare tomount: at the command mount, they mount; at the command rank, the eiven numbers move up in the intorvals without jostling or precipitation.
To Disum unt ( without Suldile).
 molet, 3. Form. 4. Rank.

At the tirst command the odd numbers gather their hormes and move torward four yards. a dall prepare to dismount: at the (ommmand dismonnt. they dismount. at the command rath. the well num. bers move up in the intersads.

Being in Lime rithoul Intricatr. t, March by the Flanl.
357. Being at a halt, hae instructor commands: 1. By tromper. hy the right Hink, M. Marcul

At the first command. at the command morch, he the new direction. The sed an soon as the first begin. him at the distance of four is executed in succession by second.

If marching, all hat at he command marde, except the man on the right. The movement ${ }^{\text {s }}$ then executed an before.

Bring in Column or Troppers.toform Line to the Right i.f Leit.
358. The instructor, opmmands: 1. Lajt (or right, int", lint. 2. March, 3. Squad, 4. Halt. 5. Front.

At the first command, the leading trooper gathers his horse ; al the command march, he tufins to the left and moves firward in the new direction, halting at the fourth command, given after he has advanced at least tive yard . The others move torward and at two yards before urriving oppo, ite their places in line. each turna to the left, forms rank to the leff of the man who preceded him. halts on the line and dresses to the right.

## Ther Riding School.

359. If there he mo riding hall, a rectangular track in lad out. one bundred yats long and thirty-three gards wide. The cornern are marked with stakes or stones. and the trooper is cautioned to keep within the preseribed limits.
spent tan. When it can be obtained makes an excellent cowering and should be spread on a track of six to ten teet in width. For the execution ot the mounted excreises, it is adrantageons to have the track enclosed. The tence should ineline outward to protect the knees of the troopers

The spaces hetween stables maty be milized for open maneges.
A convenient number of tropers, about twelve to sisterin, are united firr instraction in the hall. The horsenshould be equipped with the - mathe bit, and at the diseretion of the instructor may be saddled.

The leading and rear troperes. designated the conductors, should Ine mon-commiseioned utticers or instructed tronpers.

The march is to the right hand or to the left hand. acoording as the right or left hand is towards the interior of the manege.

The instrmetor repati- the esercises already preseribed, still patying more attention the thersemanahip of the trongers that te the aceuracy of the drill

The squad may be divaled into two sedions. The instructor designates the rear trowper of the first rection and the following trooper of the second section as conductors. The sections may then be separated by halting the second or catusing the flrst section to take an increased gait. When the leadiner conductore areat equal distances from each other. the second section takes up the march. or the increased gatt, and mantain their relative distances.

The eonductors are to arrive at the same time at the diagoual angles, the rear column regulating by the other. In changing handa in column. the columns pass each other to the right; in ehanging hands in line. the troopers pase each other to the right. and keep their legs closed in passing through the intersals of the opposite secetion. to prevent the horses from slackening the gait

## Tu Enter the Riding Schoul.

3tit. The squad being mounted. is marehed into the riding school in column of troopers: when the leading conductor is within two yards of the opposite side. the instructor commands: 1. Calum" right (or left). … March.

The conductor takes a changing direction exactly at the corners without command. The troopers follow, preserving their distances and recovering them by degrees when lost; just before arriving at a corner. calh gathers his horse and executes the turn correctly. The instructor. placing him. self on the inside of the track, superintends the movements of the men and corrects their positions.

If, in marching to the rithand the horse bears hiwnouldew in the right, open the left rei a little, and elose the right lag: if he. throw his haunches to the right. close the right leg in rear of the girth. and feel lightly the qght rein.

Chunge Hends.
pmmands: 1. Colum" right (or litt). : r is marching on one of the sides: and 4. March, when he arriver within two March, when the conluct 3. Coohumn left (or right) sards of the opposite side

Or. 1. Column hulf-right ductor enters one of the lod right), 4. March, when h

Or, as moon as thé last Right (or leift). whlique, : when the squad arrives ne

Or, 1. By ther right ( ont is marching on one of the flank. +. Maroh. when the ponite ride.

In marching in line. eit
(or half-left). 2. Maren. when the (onn If sides: and. 3. Cohumn halfol, fit , or hal!!. nearly reaches the opposite side.
man is upon one of the long sides, 1 .
March, alding. B. Formard. 4. March. $r$ the opposite side.
hift) Hank, M. Maren. when the eolumn tong sides, and. 3. By the left (or right) line arrives within two yards of the op-
h trooper regulates his horse loy that wit in column.

Ti) Trot.

36i2. Being at a walk pon one of the long vides, the instructor commanda: 1. Trot (or otur trut). 2. March.

At the command trot. father the horse : at the eommand marill. yield the hands a little anf close the legs by degrees, until the horse obeys, when the hands arefgradually replaced and the legs relased

The gait is slow at tirs and the instructor sees that the tronper feel lightly tinir horses mputhe without hearing upen the reins, and explains that the necessaty ease and wability are acpuired by wit ting well down on the hove or sadde, and partially relaxing the body, thighs, and legn.

He requires the troopers to preverve their seats by balancing the
boily: that they avoid the common fant of leaning the body or rurving the back to the rear: that they sit erect, and keop the thighs - lose to the horse

The monement. already tathe at open intervals at at walk. are repeated at a trot. name being taken to give the eommands when the spluad is marching on one of the long sides of the track. or when two yards from it. la turning by trooper to the right or lett. the instructor seev that the trot is neither shackened nor increased.

Recruits at first oten support themselves with the reins and rling with the legs: to remedy these taults they are made to ride whout hodeng the reins. the arms folded: to acomplish this, the troopers are formed in column of twos. or two parallel columns: each tropher in one cohmon is instructed to pase the reins over his horser - head to the trooper next to him in the other costamm the ride then comblueted at at trot.

The ame instruction may lee given on the lunge
T) Tu Pins irmm the Trot to the Will:

Be:3. Command 1. Well. . Maren.
It the enmmand adk. gather the horse : at the command mard. rave the hands he degrees, and hold the lese elose to preveni the horse from coming to a hatt: as soon as he walks. replace the hatme gradually and relax the leges
Til Inerיos, alnd Diminish the Rapidity ut thיe Trut.
:36t. Being at a slow trot the instractor commands: Trot ツT

It thin command yield the hands. and close the legs by degrees until the horse er radually increases the gat to a tast trot

A- soon as the proper gatit is attained, the itastructor sees that the horsen are kep up to it. and pays particular attention tor the positions of the trospers: if their seats become too much deranged, be brings the squal to : shew trot. or to a walk: this in expecially im. portant in the carlier instructions of recruits.

3ti.). To resume a moderate trot. the instructor commands slow trat.

At this conmand. rein in hy degrees until the horse monderates the sait. elowing the legs to prevent his taking the walk.
T, Pass from "M, Mit ta the Trot.
366. The instructor commands: 1. Firnard. 2. Trot. 3. Marcil. At the command formard, gather the horse; at the command mureh, pass at once to the trot as explained from a walk.
Tr Halt from " Trot.

36i. The instructor pmmands: 1. Squad. 2. Haitt
Executed as explaine from a walk: the troopers stop their horses together, but not to abruptly.

To Pass from the Front to the Rear of the Colum".
368. Being at a walk to teach recruits to control their horses. and to use the reins and legs, the instructor commands: 1. First trooper from front to rear; 服. Mareh, 3. Next.

At the first command the leading trooper gathers his horse: at the command march, he leper the column by a left or right about. according as he is marchitg to the left or right hand. moves parallel to the column and enters $t$-again at the rear by another about.

Each trooper successifely executes the same movement at the command nert, which is fepeated by the instructor until all the. trompers have passed fronf front to rear or from rear to front.

Ti, Pans frum the
Being at a war to the Front of ther Colum".
369. Being at a w $k$, the instructor commands: 1. L.ist trooper from rear to front,

At the command trot, the command march, he 1 trot, moves parallel to t another oblique and resul

Should the trooper enfor the column at too great a distance in
nt of the leading trooper, he slackens the walk until the leadiuir front of the leading trooner, he slackens the walk until the leadinu trooper arrives at the pro
370. The conductor teen or more yards from rle to the right (or left),

It the first command, at the command march, ho the other men follow, eac the circle, keeping him or Trot, 3. March. 4. Next.
hhe trooper in rear gathers his horse: at aves the column by an oblique. takes the e column, enters it again at the front by es the walk.
re he slackens the walk until the leadina
ber dist March in Cirilt.
eing on one of the long sides, and sevencorner, the instructor commands: 1 . $\%$ March.
the leading conductor gathers his horse describes a circle between the two tracks. gathering his horse before entering upm it by the inner rein. and supporting him by the leg on that side.
371. While circling, he squad may pass from a walk to a trit and the reverse, may be halted in column and put in march. as when marching on the tryck

To change hands, the instructor commands: Column righif. or left), ᄅ. March.

The nquad passes over the diameter of the circle. and circlen in the opposite direction by the commands: 1. Colum" left (or right): 2 . March ; the command. mirch, being given when the conductor is two yards from the circumference.

To march again on a straight line, the instructor commands when the leading conductor arrives on the track of the boug side: 1. Forirard. :. March.

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1
$$

The conductor followed by the troopers. then takes the track and mores forwaril.

## Individnal Ciriling

37ㄹ. Marchine th the right (or lett, hand on the longe side it the hall. The instructor commands: 1. Trompers, circt to the right for lert l. Z. March.

At the command merch. cach trooper marehes on a circle four yards in diameter. tangent to the track. guiding themselves on the conductor all completing the turn at the same time. Tbe troopers continue to march on the circle antil the command: 1. Fircard. ㄹ. Marci. given as the troopers take the track: they mareh on the track to the same hand as when the movement began.

The troopers when marching on the circle to the right. open the right rein and close both legs and it marching at a trot or a gallop. the left more than the right. to sustain the horse. If the commands: 1. Squad. ㄹ. Halt be given. the troopers hat their horses facing in the same direction as the conductors.
To Monat | with Saldit

37:3. The horses being equipped with saddles ald curb-bridles. are habitually formed in line. The troopers standing to horse, the instructor canses them t" connt formers and commands: 1. Prepark to Moint. … Morint.

It the first command, the odd numbers lead ont as previounly *xplained.

All the troners drop the right rein. take two back nteps, stepping off with the lett font. at the same time sliding the right hand along the left rein: half face to the right as the right foot is being planted. and bring the left foot near the right. Whith whould place the trooper abont opposite the girth; with the aid of the left hand take both reins in the right hand, and place the right hand on the pommel, the reins coming into the hand between the thumb and forefinger. and held so as to feel lightly the horse mouth. the bight falling on the off side: ( Two). Place a thirit of the leff foot in the
stirrup, with the assistaffe of the lef hand if necessary. and support it against the forearm of the horse: rest upon the ball of the right foot ; place the left hand on top of the neek, well torward amd grasp a lock of the mane, thelock coming out betwern the thmmbend forefinger.

At the command mont, spring from the right tioot, inoliner firmly to the mane, and keeping the right hame on the fommel; bring the heels together. the kned straightened and resting arainst the saddle. the body erect.
(Two.) Pass the ribht leg, knec bent. wor the aroup ot the horse without touching fom: let the body come wently alownintw the sadule; let go the manednsert the right foot in the stirrup. pase the reins into the left hand qid aljust them. $^{\text {and }}$

At the command. 3. Rorm. \& Rask. the even numbers move up sx before explained.

Povition of the Wrooper Mounted (with Suddl. .
374. Same as previdusly explained, with the following exceprions: Buttocks bearing equally and as Alat as poxsible ugon the middle of the saddle: the reins coming into the lett hathd on the wide of the little finger, ath leaving it between the thumb and fore. finger; the little finger atween the reins, the right rein above it : the other fingers elosed. We thumb pressing the reins firmly on the necond joint of the forefinger the end of the reins talling to the front and outside of the right ruta : the left forearm horizontal, and chose to the bouy withont presumf: the wrist turned inward. so that the back of the hand is almog perpendicnlar to the front and bertical the right hand behind the thigh, the arm falling naturally: the tiot inserted in the stirrups sof that the bails of the teet rest on the tread of the stirrups. the heels ghty lower than the balls of the feet.

Stirraps.

35:. The stirrups shodid support the teet athe the Weitht of the legs only, and be of suchthength that when the legs are in proper position, the feet out of pe stirrups. the trearls will be on a level with the lower part of the

The length dependsespfnewhat on the formation of the man : " man with a thick. heary thigh requires a shorter stirrup than a man with a thin. flat one. Alad the galtop and trot. for long distaticea. require a shorter stirrup then the walk.

When riding with the tirrups, they support. in a measure, the weight of the body in its afscent to the sadile by a yielding of the the muscles which distributes the downward motion between the fiet. thighe amb seat.

It. atter the tronger has been exereised a short time at the mond prot. he has a chse seat, with his leg in proper position with his hed down. and dues hot have a serure hold of the stirrup. then the stirraj reanires shorteninar.

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T_{0} \text { erosethe stertups. }
$$


Throw the ripht stirrup were w the near nille, then the lett one to the eff side. the strape resting on the withers in front of the pommel. the hools outward.

The isespuctor frepuently direets abat the stireup be erossed. The trochers monm amd dianount with timups erossed ats it the horses wore unsablled. phacine the right hatal on the prommed insteat oit on the withers.
firmup mom be taken again buring the tiret lexsom at the $f$ fallup

> To Disumont with Serddl.
37. 'The imbumer aommands: 1. PREPARE TO HSMOINT. Z.
minmost.
It the first eommand the odd numbers move forward tond yards. remblatiner by the riabt. All the troopers then sei\%e the reins with the right hand. in tront ot amd near the deft, so that they come in on the wide of the thamb and foretinger; place the right hand on
 ara-p a lock of the mane, the lock comand out betwen the thamb and foretinger: take the right fout out of the stirrup: partly disenware the lett bot keeping the borly erect.

It the command tranment. rise upon the left stirrup. pass the right ley. knee thent. over the eroup of the Lurse without touching him: deacend lighty th the grount, remowe the lett toot from the atirnp and phaw it by the nide of the right. keeping the body erect: let $g$ o the mane: pases the ead of the reins on the neek near the pommel or the saldle with the right hamd, which then seizes the len rein. ITwo., Fare to the lett: take two short repss, leth fuot first: -lip, the right hand along the beft reill and take the powition of stand
" At the cesmmand. 3. Form. A. Rask, the even nambers lead up beture explained.
378. The general pranciples for the use of the reins and lear. already explained for the fratering bridle. apply to the management of the horse with the cufb bridler. except that the hridle hand imoved instead of both hards. In all movements of the hand the arm should act freely and with fut constraint to the body. and as the bit it the curb bridle is much more wesere than that of the watering bridi.e. it must be applied graduglly and more gently. particolarly in hah. ing and in reining back.

To turn the horse to the right (or left). Curry the hand a little. forward and to the right (or left, so that the left or right, ruit bears on his neck.
Sputis.

379: The spur is an aid and also a means of punishment. It i- ath aid when it is used to augnent the effect produced by one or beth lege; it in a means of pulishment, when the horse refuses to whey the actions of the legs.

To use it an an aid. the trooper continues the pressure of the lews until the spur touches the kin. and adds its effect to that of the lewe.
'Io use it as a means with the legs, turn the tod press firmly with the spuf leehind the girth. Without moving the
panishment. hold firmly to the horne body. until the horse obey

The spur must never be used unless absolutely necessary, anil then with vigor at the mothent the horse commits the fault. [ 11 . .necessary strokes will arope his resentment and induce atublom. ness; a thumping or a confouous light touch will either make the horse insensible to the proper action of the legs. or alase him th kick.

Instrurtionxurith Saddle. Curh-iridte and Spur.
380. The movements dalready prencribed are repeated. The in structor causes recruits dof first to use the sadde and waterine hridle, and does not give them the curb-bridle and spur until the: bave confidence in their seda, and are able to ride fairly well.

As a general rule, after commencing the use of the saddie in th. riding hall exercises, about pne-half the time of earh drill whall he. without saddles, the saddles being removed and conveniently place.l in the hall.

A man who can ride bard back can ride with a saddle
 311

## The Gallop,

3 x . The gallop in a succession of leaps, during whicin there is a small interval ot time that all the feet are in the air. In galloping on a straight line. it is immaterist with which timet the horse leade. hat troops will march with greater ease and comfort if all the horses leat with the same foot.

A horse gallops on the right toos whell the right fore and hind legs move in advance of the lent fore and hind legs; he gallops on the left foot when the left pore and hind legs are in adrance. ILe sallops true when he gallops oh the right foot in marching to the right hand. or on the left toot in marching to the left hand: he gal. hops talse. if in marching to the risht he gallops on the left foot. or anversely.

A horse is disunited when he gallops with the near tore leg. tollowed by the off hind les. or the off fore leg. followed by the near hind leg: in wither case his hadance is deranged mad his strength im. paired.

When the borse gallops an the left toot the rider feels a sernvible movement in his position from left to right : When hegrallops on the right foot. the morement of the rider is from right to heff: when the horse is disunited the rider experiences irregular movements: when the horse gallops true the preserves his balance and in case of a mise take he has his legs under him and can more easily recover himself: When he gallops talse .or dinumited he is apt to fall whenever he makes a blunder.

382 . The cater is a short. wollected gallop: the horse's torehand is raised. his whole figure is collected and shortened. his neck bowed and his head drawn in, and be moven by the spring of the haunches. It in the gait that should be used in the riding hall ex. ercises and mounted gymmastice.

The rallop cannot be sately ussed in the riding hall. unless the hurne gatlope true and the track is in good condition.

## T, (rallop.

363. The recruits marching to the right hand, the instructor mmmands: 1. To three yards take distancr. 2. Trot, 3. March.

At the command march. the leading trooper takea the trot: each of the other troopers in succession take the trot when the cue in front of him has gained the distance of three gardm.

This precaution is taken with recruits to prevent the horses running on each other and causing confusion.

The instructor commands: I. Gallop, :. Marce

At the command gallop，gather the horse ；at the command maral． close both legs and rein in with a firm．light hand（this is ${ }^{(0)}$ brins the haunches under）．then carry the bridle hand to the left and press the right leg with viger（these actions throw the weight on the near hind leg and alluy the off fore and hind feot to lead）：ar soon an the horse rises gite the hand and relan the right leg：rein－ ing in slightly and clositg the lege with light pressure will keep the horse at the gait anll up to the hand；a dead pull whould be． avoided；if the horse leans on the hamd．yield the hand and phay the reins a little，then clpse the legs and rein in a little abruptly： as soon as the horse obey，yield the hand．

The gait at first is resirkced to the canter．
To keep the horse trie the rider must accommodate himsilt t．． all the horse motions，particularly in changing direction at the corners．When a horse gallops false，or disunited．his rider is or－ dered to leave the column come to a trot and pass to the rear of the column，taking care not to interfere with the other men：arris ing at the rear he resume the gallop，the instructor explaining how to keep the horse true．The gallop to each hand will he kept up only once or twice around the riding school the horses being brought to the trot before changing hands．

In turning the cornery，the gait is apt to be too hurried．To cout－ rect this fault，the bridle hand should be carried forward（with pres－ sure on the inward rein）apd the horse supported with the inward ley．

The instructor will nodat first dwell upon the mechanism of the gait，but allows each recruit to accommodate himself to the motion of the horse without－losing，his seat．

The men must keep ther horses steady；when able to manage them properly at a gallop，the distance ot one yard from head t． croup in gradually resumad．

In order to make it easidr for the trooper to start his horse true． the instructor will find it edvantageous to march the squad in line with intervals across the hall at a trot and upon approaching the track，commands：1．By 化 right tank，… Gillop，3．Marci．

Or，to give the command to gallop when the squad is circling at a trot．

When the squad has beeh sufficiently exercisefl at the gallop on wtraight lines and in circlifg，it is marched by the flank，and circling by trooper at a gallop；he instructor taking care that the turns are not made too short，hat the troopers keep their horses true． and that they do not dernge their positions．．During these exer－ cises the stirrups will somatimes be crossed．

## To Pasw fram the Canter tio the Giallop．and the Conterser．

3xf．Befing at a conter，on one of the long sides），the instructor rommands：1．Gallop．ㄹ．March．

At the command marde．give the hamd．and elose the lege by de－ srees．until the horse increases his rat to a allup：when the proper cadence $i=$ attaned．the instractor pays particubar athention to the positions of the trongers it their seats beome ton math heratured． he bringe the squad to a canter，or a trot．

38．5．Tu resume the canter．the instructor commancis： 1 ．Canter． ？MamCh

At the command marrh，rein in by degees until the horse mod－ erates the cadence．chosing the lexs to prevent his taking the trot．
To Pase from the Gisllop to the Trit.

3sti．The instructor commands：1．Trot．\＃．Maris．
At the command trot．gather the horse ：at the command meareh． rein in by desrees abd hohd the legre chose：as soot as the borse trote． replace the hame gradually and relax the legs．
Remarks.

The objeet of the pasiafes and the circlings on the forehand and haunches is to teach the horse to be obedient to the pressmre of the leg and reins．and to intruet the recruite in the application of the aids．

Each of the movements will firs be taught to the recruits sep－ arately．It the movement be new to the horses．the tromper should have one or two light phant switeles sutficiently long to reach the horse behind the sirth．which are used at the time and on the same ride an the preswure of the leg：when the horse vidhes muth should be made of him：it will encourage the horse wiel him atter each effort．

Care is taken that the movements are not hurried，or too much required of the horse during the tirst trials．

38i．To turn the horse on hiv fore－hand the instructor com－ mands：1．On forchaud．$\because$ To the right－（or left），or，ב．To the right （or lett）about．3．Marci．

At the first command gather the horse＇：at the command march． －lose the right leg behind the girth until the horse steps to the lett with his hind feet．keeping him straight and preventing him from stepping off with his fore feet．by supporting him with the lef leg and the reins；relieve the pressure ot the right leg as soon an the horse obeys．Continue the application of these means until the
horse has turned to the raquired degree : the tore feet should remain in place. If the horse dopen not obey the pressure of the legs at first. open slightly the right reln.

If the horse steps his fore feet tio the right. increase the effiect of the left rein to keep them in place.
388. To turn the hopse on his haunchen the instructor eommands: 1. On haunches 2. To the right (or lett). or. ㄹ. To the right (or left) roout, 3. 4 人RCH.

At the command manck, rein in, to throw the weight on the haunches and close the fogs to prevent him from backing then carry the bridle hand tolthe right. pressing the left rein on the horse's neck, to make hindfep with his fore feet to the right, at the same time supporting hin with both legs. the left leg well behind the girth to keep the haunches in place.

## To Passage.

384. Being upon a loffor side, the syuad is marched by the flank and halted. head to the wall or track, when it arrives near the ops. posite side. The instructpr then commands: 1. RIaHT or d.FFT, pass, 2. March. 3: Squild, t. Halt.

At the first command, rather the horse and incline hin to the right. by carrying the bridle band slightly to the right.

At the command mareh, rein in. close the legs, to force the horse to the bit; bear the hand fell to the right. the left rein pressing the horse's neck, and close the left leg behind the girth, keeping the body erect; keep up the passage by a gentle applicastion ot the same means.
'The horse's shoulder sould precede the haunches. that is. he is hold inclined to the righ Only $n$ few steps should be taken at first.

At the command halt, sure of the left leg as soon as the horse moves his haunches, and is straight in line.

The application of the feins and legs should be in harmony with the sensibility of the horsd if the horse obliques too mucb, diminish the bearing of the reins; iff he steps too quickly, moderate the effects of reins and legs; if he badke, force bim up to the bit by pressure of the legs.

The passage in colum the same means.
390. For this exercise one foot, and the width
may be executed by the application of

## Jumping

the height of the bar should be at dirst the ditch, two feet. As the men and
horses beeome used to jumping. the height of the bar and the width of the ditehare gradually inereased: this exereise should generally be practiced near the end of each drill.

Horses are first tanght to jump the ditch. then the bar. They are equipped with the watering bridle and follow a steady horse who is aceustomed to jumping.

This instruction is also given on the longe
The horses are taken in the open tied and practiced at jumping shallow ditebes, fallen logs, vers low fences. ette. If the horse retuses to take the jump. the instructur may give aid with the whip, but in such a way as not to territy him. If the horse be timid. it is - sometimes adrisable to place the har on the greand. Great discretion must be used in applying the whip and the horses will not be required to jump repeatedy over the same haige or at the same phace.
391. The instructor torms the - path in lin ? abont thirty yarts from the whatacte and commands: 1. F:, : is er frum the right or left). ?. Marin. 3. Next.

At the command merrifl. the troper on the right moves to the front at a walk: be takes the trot when he has iassed over about one-third the distance and then the gallop

After making the jump. he takes the trot, then the walk, and takes his place in the rank. which is reformed about thirty yards beyond, and on the right or left of the obstacle. and facing it.

The other troopers move out successively from the right at the command wect.
392. In the riling hall. the troopers are formed in two squads. in line. fating cach other at oposite ends of the hall; two bars are placed across the track, whe on eath of the long siter ot the hall, about midway.

The instructor commands: 1. Fitst tronper from ther right (or lift ). 2. March. 3. Next.

It the command march, the trooper on the right of each nquad moves out at a walk and marches diagonally across the hall: on passing each other both take the trot and when abreast of the flank of the opposite squad, they take the track at a gallop (or canter), the borse leading with the right foot; after jumping both bars, each irooper takes the trot, thenme walk, passing around the left flank of the opposite squad, marches at a walk diagonally across the hall, and forms on the left of his squad.

The other troopers move out successively from the right of each squad at the command next. This rule is general for individual er. rccises.
393. In making the st anding jump. the horse is kept at a walk. Ride the horse up to the par or other obstacle, at an animated walk: rein in with a light hand and chose the legs with coersy to pace. him on his hauches, then field the hand and legs as the horme rises, feeling the reins, orfy enough to prevent them from becoming slack; grasp the horse foffly with the knees and legs without turning out the toes, keeping the seat clowe: hold the borly erect by inclining forward; as the , dise is grounding keep the bexty eret by leaning backward, and ghther the hove to support him: continue the march at a walk.

394. In making the fring jump, the same semeral prituciples are observed aw when mafing the standing jump. The horse mant not be hurried nor allowel to rush: but be held steady and straisht for the bar or other obstaple.

If the obstacle be hith . hring the horse up at a collected eanter. rein in near the obstacledeth a disht hame and elone the legs. with. out turning out the tees. with a vigorous premure to make him -printe high enough to clear, the histacle.

- Jumel the Ditc.lo.

305. Ride straight for the ditel at a stealy animated sait. elowe the lege firmis without tffoing out the toes and keep a firm haml: the instant the horse surfors. sive the hatnd, and as he ground- alltain him with a light stefly presure.

The instructor mast denerve that the trooger daes not thrust his ${ }^{2}$ weight into the stirrups for throw gut his ellows. bor cheek his horse too abruptly. If the horse is checked with a sulden violenere after making the jump, 费 takes it as a punishment and may thore. after try to avoin the obfacke.

Recruits are apt to fry to sustain themselves instead of the horses; to prevent this, fhe instructor may find it neressary to atbow them to place the bfidle hamd on the horses neek until they have gained contidence. If' necessary the hat shoulal be lowered th a height at which the redfuit can casily keep his seat.

When the troopers hafe attajued contidence, leap without cherking, and maintain controgover their horses after the jumb, they may be exercised at jumping frith sabers drawn. from lithe or cohumn. ir trooper, twos, fours or life entire. When in columm the troopera. twos. fours or platoon. fay continue the march at a walk and ap-
proach the obstacle ly taking the trot and gallop in suceession: they close distances after passing the obstacle, the head of the colmon continuing the march at a walk. The troopers will be practiced jumping obstacles without saddles. without stirrups and with girths untastenent.
396. Toleap the bar, dismounted, with the horse.

The squads are formed in line and the troopers move out as prescribed fir jumping. The trooper dismounts four or tive yards in tront of the bar. takes the galloping step and the position of prepare (t) monnt. jumps with the horse comes to the ground at the same time as the foreteet takes the galloping step and mounts: when the wat is aswere he takes the position of the trooper.

In leaping the bare the trooper should be careful to spring. and not trag on the horse which might turn him and make him fall.

Atter the troopers have become expert. they may be requirel to monnt as son : the horse rases his forehand to continue the gallop atter kaping the har.

The trongers will atso be reguired to monnt the herse while leat ing the har. These exereises are executed from both sides of the horese athl with or without saldle-
Th, Wresth.

3!: The traper are intructen as the hathere of the exere -ises. At the command: 1. Firat tromper from the right. Z. March. the right troper of each rank moves out at a walk: they approch and other on the side indieated by the instructor : when they eome wonther they hatt lock hand or arm- or chasp arme ahout each oher: watist and eadh, retaining his own seat. endeavor- to dis. mount tre other.

The Eections being in line with intervals at opposite side of the hall. faring gath othere and the troopers in one rank being opposite.
 commathi the sections appoach at a walk and each tropere wrestlen with the one opposed to him. At the command attentwh. Wey cease wrestling and resume the former formation. $\qquad$ $\cdots$
The equal being in any formation. At the command: I. At rill. 2. Wheste. the tropers wrestle with adversaties of their own selection. At the command detention, they form as they were previou- the themmand wrestle.
The Pirrunit.

3!- The object of the pur-ait are to test the trompers okill in horvemanship and to contirm his contidence.

The instructor prescribes the limits or: boundaries within which the pursued may ride ; if he leaves these limits to avoid the pursuct. the pursuit ceases in fato of the pursuer and both troppers return to the squad.

The instructor designays two troopers, one as the "pursued." or No. 1, and the other as th" "pursuer," or No. 2 : he indicates a point toward which No. 1 will pharch until the pursuit is ordered. The instructor commands:marches at a walk in the direction indicated. followed by No. a at distance of about fifteen fards. At any time after they have this distance and before reaching the designated point, the instructor commands 1. The persuit .2. March.

No. 2 will endeavor th touch No. 1 on the body rexcepting the arms, bands. legs and feets with the right hand. or to pluck a rosette or something of the kind fastened on the shoulder or breast of No. 1 So. 1 will endearor to perent this by turning. cireling.reachi ng. dismounting, etc.

At the signal or the fommand helt, the pursuit ceases and the contestants return to the

The instructor sees that the conditions latd down tior the exercise are observed and the the horses are not overworked. The ground tor this exercise spold be selected with referellee to obstacles to jump.
399. The wrestle mat

First. The pairs being formed as for the pursuit. the instructor indicates the nature of the exercise and conducts it similarly to the pursuit, the result desired being to overtake and dismount his antagonist.

Second. The squad boing in any formation, the instructow commands: 1. At rill, ב. Pursce and wrestle. The exercise is com-- ducted similarly to the westle at will.

Any of the exercises pay be executed at will, e. !!: 1. At ,rill. 2. Dismocnt and Mount, (or 2. Vaclet, or 2. Drop saber. 3. Rifilt and Left low, 4. Reach

At the command attenfion, the troopers retorm line or column. Exercises at Will.
400. The instructor dmmands: At will. At this command the troopers will be permitted to do any or all the exercises berein, and to exercise their own ingentity and fancy. The instructor must be on the alert to prevent disoders or improprieties. At the command
, ittention, the troopers resume their places in the formation they had at the command at rill.

The object desired by the exercises at will is to develop the indi. viduality of the trooper.

## MANIAL. OF THE CARBINE. MOINTEH.

401. Carbines being slung. when the trooper has placed him. selt opposite the horses shoulder after the command prepare to mount. he passes the carhine over the ripht shoulder. betting it rest against the back. mazale downward.

After mounting the trooper execontes riturn arhine. (Par. fllis.)
At the command prime to divmennt. the trooper takes the carbine from the boo with the right hand and passen it over the right shoulder in the same manher as at the command prepare to mount: as soon as he lismonts, the position of sling carbine is taken.
flle. 1. Adrance. © ('arbise. Grapp the piece at the mall of the stock with the right hand: raise it, and place the hatt upon the right thigh, barrel tw the right. the piece inelined to the front at an athgle of about thirty degrees.
 hine th the reare ineret the mazale in the lowt and hrop the right hamd by the shle.
To Lim, the Cirhiolt
414. Beines at alvance cartine the inatructore eommands: 1.


Drop tine piece inte the left hand. muzzle the front and the the lett barrel pointing downwarl at an ande of about forty-five desrees. supporting the carbine at the babance by the thumb and fore finger. the other fingers elosed on the reins taking care not to change the feeling of the reills: had the piece as in lar. 104 . and take ahethore rambine.

The piece may be landed from the proition ot ritar" athore by the same commands. raising it from the lemt.
+10.). Beinspat advance carhine: 1. Squrd. ㄹ. Ready.
dock the fince with the right thamb, and reture the thamb to the small of the stock.

## AIM

thri. Drop the carbine into the lefthand asin load raise it with both hands. and aim as in Par. 111. well to the left of the horse's head.

In aiming care should be taken not to disturb the horse by a change in the feeling of the reins; this may be effected by slipping the left hand along the stofck and leaning the body forward a little.

## FIRE.

407. Fire as in Par. wit and resume advance carbine.

Cerse firing, is execute as in Par. 165 and litig. except that the piece is brought to adrante carbine.

Cease firing, lond, is ex cuted as in Par. 1iti, except that the piece is brought to advance car ine.

- 408. Druc Cartridye, is executed as in Par. 111, and then resume adrance carbine.

The cartridge is alway drawn before executing return carbine. This rule is general.
409. Being at return farbine: 1. Inspection, こ. Carbine.

At the command carb, ${ }^{\text {en }}$, raise the carbine and pars it into the left hand as in load, open he chamber and take adrance carbine.

Each trooper after the inspector has inspected his carbine and passed, lowers it into the left hand as in load, closes the chamber and returns carbine.

Inspert on of Arms (monnterl).
410. The troopers be hg fully armed, and at return carbine: 1. Inspection, 2. Arms.

At the command arms all the troopers take the prosition of inspection carbine.

The carbines are then inspected as in Par. 409. Each trooper after be returns carbine, qubuttons the flap of the pistol holster.

The pistols and sabers are inspected as in Pars. 123,124 and 125.
To inspect the squad nore minutely, the inspector dismounts the squad and without forming rank, commands: 1. Incpertion. ${ }^{2}$ Arms.

Each trooper, as the ispector approaches him, drops the reins. executes unsling carbine find open chamber, then pasises his right hand inside and under the right rein and returns the hand to the small of the stock; the rean rests in the bend of the right arm. The inspection is executed as

The inspection usually begins on the right of the rank of the odd cuinbers; the inspector then passes in rear of the rank from left to right, inspecting the horse and equipments; in like manner. he then inspects the rank of the e

## maitial of the saber, motinted.

411. The instructor canses the recruits to take the saber when they can ride well.

The saber is unhooked when the trooper has phaced himselt opposite the horse's shonlder after the command prepere to monent.

After dismpunting. the saber is hooked up and the position of stand to horse is taken. This rele is general.

Before bexinning the manual a few movements may be cxecuted to quiet the horses.
+12. The manual of the saber monnted is executed as when dismonnted. excupt as herein provided.
413. The saber is drawn withont using the left hand. At the command drome. reach with the right hand over the bridle hand and pass it through the saber knot. without quitting the reins with the left hand: seize the gripe and draw the bade six inches from the stabbard.
Position ef rorry Saber. Mounted.
414. Back of the hade against the right shoulder edge w the front, the wrist resting on tol of the thigh, the forcarm near the body, the little finger outside of the gripe.

The instructor sees that the position of the bridle hand is not deranged and that the right shoulder is not thrown back.
+15. The saber is returned without using the left hand. In returning the saber while marching, the back of the blade rests againat the left arm until the point enters the seabbard; but if the scabbard is attached to the sadde. the tronper may be permitted to assint with the left hand in inserting the point in the mouth of the sabbard.
416. Before executing the saber exercises mounted, the instructor causes the squad to take distances to the front.

Being in line the instructor commands: 1. Front theke distaner. 2. Mareit: 3. Squed. 4. Malat.

At the command march. No. 1 of each fhur marehes straight to the front: No. 2 of each tour marches straight to the front when No. 1 has a distance of four feet in front of his hopse; No. 3 and So. 4 move off in succession in like manner; the command halt in given when Nos. 4 have attained their proper distances.
417. To form line again, the instructor eommands: 1. Form. $\because$ Rank.

At the command rank. Nos. 1 stand fast and Nos. 3 and 4 move ,"p into their intervals, between Nos. 1 and halt.

The instructor may orm the squad in column of troperes and then form line by marchiper by the flank and halting with interval-
418. The saber exerdse is execoted as when dimounted, except that at the command !! ${ }^{\prime}$ rif. the troopy: move the right lamd and saber only:
419. As the recruit hecome more skillful in the use of theif sabers they are practise in the saber exereise while marehing in column of troopers at ally gaits. care being taken to increase the dintance to two yards. Thy will also be exereised in leaping the diteh and the bar, at first with the naller in the seabhard, atherward with the saber drawn.

## NOIES ANI) COMAENTS.

## MAR"HING AND (.AMPIN(;

 we are struck hy the lack of agreement between the anthors. ser cral of them officers of areat experience and well known in the army. Thronghout the entire service it is the same. Scarcely two officers atree as to the methods to be ued in ranp and oil the mareh: and some of the opinions. on eren the mos essential points, are so much at variance that it is hard to believe that part of them are bot radically wroner. In what a sad pligits is a young officer when he looks to his elders for guidance in this most infortant part of his daty: For instance if he were to inguire of Colomel Bervart how to make an ordinary days mareh, he would be told to do it at a walk of tour and a haffimiles per hour. ('olonel Ifenky would put in a slow trot of ten minutes and tive or ten minutes lead. intin in every hour. Capain Wond does not had un such a mareh. Major Chafee marehes tive miles per hour, takine ahernately a walk and a sliw trot of two humired and tifty varde per minute (s.jo miles per hour). Everywhere we tind similar differenes.

The almost equally important art of breaking camp. seareely touched upon in this discussion, is the subject of quite as harge a number of theories: and on minor. yet important prints there is the same lack of unitormity. There must be wome lest method for the average cases, and it is believed that a hord of experienced and competent cavalrymen could evolve a seheme whirh wedal come near this. Their conclusions, piven the proper authorite. would put an end to the numberless styles now in vogue, some of which must depart widely from the eorred system. Many marches are scarcely anything but experiments, and many a good otficer has kearned hix method by making mivakes. which were anything but a pleasure to him and were by no means a protit to the government. Experiments are very well when made intelligently and under proper direction and control. but they are too expensive ta alow their heing made when the right way has already been diggovered and can easily be pointed out

In the past the comditions have been such that everyone con-
ducting a mareh hats been hamost tree from contwol and at liberty to follow his own ideas；but purpose of instruction，an eral method，so that the command．In the presen was made；such instructi neem to have little bind cocer all the cases most without forage，with wagh without either，de．When forced．deviations being explanations should incur

A great deal of care and set of rules．Our own ext adopted，but it would be ${ }^{1}$ ence that has been gained alry troops still kept up ir

It would be better to pursue the course pointed than to have a system that would need patching up a in session can incorporate to get the best results it wh further discussion of the $q$ a brief outline of the plan down would be of great rad now marches are being ordered tor the it is a good time to prescribe some gen－ nstruction will mot be different in every tacties too much effort at comdensation ns as are given are indefinite，and they ag force．The new instructions shonlid kely to occur，such as marching with or transportation or with pack mules．or once adopted they should be rigidly en－ llowed only in exceptional cased，when bly be rendered．
work will be required to get up a proper rience should dictate much that is to be ost unwise to overlook the great experi－ n handling the immense numbers of car－ Europe．
t matters alone，allowing each man to ut by his experience and common sense， would not stand the test of use and that soon as tried．The tactical board now he instructions in the new drill book，and ald seem well for the association to invite estion，requesting its members to submit each thinks best．These opinions boiled ue to those in charge of the work．
w．E．SHIPP．
Second Lieutenurt Tenth Curalry．

## PASSAGE OF THE

On May 31nt at Kiett Fifth and Sixth Sotnias of swam the Dnieper，passin The troops，under the pers of Colonel Mikhalloff，co officers of the regiment， Dnieper at a point where miles per hour near the b： middle，and where the wit

The right bank is sted and roots；the other bank

The passage commence had the difficult task of bank．not allowing them closed by rafts，but forcit tarther．The troops，preteded by column of threes．It waspastrange sight to see these heads of men
and boree spead ower the river，and hardly vinible trom the point of departure．The silenee was only broken by the neighing of the horses，which could be heard for a long distance．

The head of the columin entered the water at twenty nrinutes past six，and twelve minutes atter．it reached the opposite hank． The men swam on the＂up river＂side．most of them holding by the mane：those whose horses moved more slowly，held to the tail： anme swam alcrow，holdins the reins in the teeth only．The horses were not unbridled．

A non－commissioned officer arosed without a horse．eight min－ utes ahead ot the volunteres and selected the point of landing．

The regimental commander announced that those who could not －wim or who feared to cross．might remain on the right bank．but no one accepted this offer．The small boats that had been provided to carry aid in case of need were only used by the spectators．

It was not easy to make the horses leave the bank．or to get them to ross the current．It was necessary to wim wer four hun－ dred yands along the bink at one hundred yards from the shore：be－ sides the horses had to jump into the water from the top of a steep bank．The movement was executed more easily by the horses in rear of the tirst．Some．moreover，took the current directly：two or three horses，after reaching the middle of the river．wished to re－ turn，bat were prevented by the cossack－swimming by their sides； two or three tried to throw themselves upon each other．（one on ac－ count of tatigue．）but their riders succeeded in restraining them．

I＇pon the opposite bank，after resting for five minutes．the re． turn was executed with more order and quickness：the horses moving more willingly and crosing the current in a better manner．

The entire distance in going wa－over eighteen buidred yards． which made more than two miles for the double trip．

As we have alrealy remarked．the horses were not unbridled；in fact it is shown that the bridle or rein was a great belp in case the horse wished to turn back．

To conclude with some advice：Ride the horse into the water； he will then be more willing to go into deep plates．When the horse begins to swim．leave the raddle and hold to the mane on the upper side．Good and sure swimmers can hold by the tail；it is catier for the horse but he cannot be controlled so easily in this wav．The swimmer need make no effort，as the horse will easily puldhim alons．－Rerue du Cerile Militair，Iuly 28． 1989.

## A HAND－PROTECTOR FOR THE RIFLE．

In order that men may seize the weapon with bare hands with． out burning themselves．after rapid and prolonged tiring，the Aus－ trians have just adopted a hand－protector，in the shape of a sait－ －loth ease，covering the stock and barrel in front of the sight． Within this case a piece of felt rests upon the barrel．and a piere of leather covers the magazine－－Rerue Milituire de l Etranger，July 1.5.

THE LANCE IN T T G GERMAN MOUNTEI SERVIC'E.
In consequence of th pgiments experimentall reports that have been received from the now be armed with the 1 equipped with lances. all the cavalry will
now be armed with the gnce. The dragoon and hasar regimentwith the exception of tose that take part in the Imperial maneuvers next month. The ": ments have already beed Regimental Instructors" of the C"hlan resiImperial maneuvers the tanght the use of this weapon. After the eive the lance: so the remaining cavalry regiment- will alob re croops will be as far at weapons and equipment are comearuad a cavalry unit.-Deutsche Heeres-Zeitung. August id.

## REVIEWS AND EXCHANGES

The. Opecitions of the Mi.hinan Ciewlry Brigute in the (iettysbury Comperign. Addres by General, James II. Kumon thenceasion of the dedication of the monument erected on the battefield by the state of Michigam.

Derlicetion or the Momument of the Sicth Pennsylranin Caralry on the Buth rield of Gettyshery. Octoler 14. 1sss. Addures of Colonel F. C. Newhatio.

Dediontion of battle monmment and annual remmont of the Tenth


Oration of Comonel W. L. Hermancer at the dedication of mumment. Sixth Nee Yurk Cotalry, et Grttysturg. July 11. 1ss\%.

In the hot times of the great war the calls for action followed the trooper so closely, the restes were so short. the lines of communication so insecure that cavalry records are nearce, mearee and often misleading. War cormeopodents like Forbes. MacGabay and Finserty did not ride in that day at the heals of cavaly columne, realy for anyturn of the fight or foray. So it has happened that our arm has received scant notice in the chronicles of the times and amid the fow ot reminiscence which followed the war the trooper's voice has been sedfom heard in assertion of his deeds. The pamphlets which we notice here are a valuable addition to the literature of Gettrsburg. as well as an encouraging sign that the silence is to be broken and that the history of the caralry is in good hands.

Colonel Newinali has spoken to the point several times before: General Kido's paper is a most valuable one and deserves a much more extended notice than our space will now permit.

Beticeen the Lines. By Captain Charles Kino. C'. S. A. Marper's, New York, 1889.

A bright soldierly story. full of the glowing life which coursed through the veins of so many of the young heroes of a quarter of a century ago. both those who wore the blue and their opponents in the grey.

Captain Kiva has here exchanged the plains and mountains of the West for the beantiful ralleys of Virginia as a scene for the ac-
tors in his drama, and intead of the weary little columa of trond. ers trailing up some blafing canon in Arizona. or silently clonins in on the doomed rillage of Sioux or Cheyennes in Moritana, We now see the dense columns of the cavalry corps of the Army of the Potomac and the Army of Sorthern Virginia.

The character sketchihg is good throughont. The hero. Iien. tenant Kearsy, is the tofer of the young soldier of the Forth. cheerful, resolute and fofl of zeal for his cause. Fresh trom hiv alont mater. Princeten, 10 gives up home friemds. and the briphit career opening before bith. all recognize him, though do we know the wretche Merifase. the ward politician turlted

 regard for the newspader correspondents in eamp. is capitally drawn, as are the brave eld soldiers. Granam with his long armis training, and Westerico feran of a score of European battle-tichis

The story of old Julef Armisteab with his strong unon venti ments up to the very hoyf of secession, but who feels it his duty $t$. go heart and soul with pas State when she has once dechared her course. is that of many a fouthern gentleman. hut the unjust suspi. cions under which he falksad the complications resultinge trom hiv son's magnanimons tredtment of a wounded toe are new athat striking.

The old judge's daufhtor, sweet IdCy Anmistean. ज attmative and winning, as Kiva's hepoines atre wont to he, and Kfarsy's lowe for: her fiurnimies the thred cavalry exploits, which no brilliant cavalry battle op told and many a veterar pulses thrill as he Ininets Frery page is full of libe guidons: we hear the thun sabers. Once again aftep of the peerless Joun Bred and Farnswortio, as the meadown of the great tha Cisinat an they fash deff and once again sweep by -the splendid batteries
 the rest. We see them all as we turn over these pages. Ver. We are boys agatin, the mist fises. the eres fill. and the jresent tinle
 the brigade is going into 4 tion.
"With helmpnd blade and lance arrayel,
And plupes in the gay wind dancing.
With squadfon square we'll all be there.
To meet the foe adrancing."

Captain Kivi has given us a capial story-the best we have vet had from his pen, and the arong in general and the cavalry in par ticular are once more deeply in his debt for the accurate presentation of the stormy scenes now fading into the prast.

## Jotrinal of THE ROYAL CNITED SERVICE INSTITCTION.

I',hume XXXII_-('avalry Outposts. Horse Artillery, Journal of the ['. S. Cavalry Asociation. Mounted Infantry Notes of
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-p. 4it. Lord Wolskiey on Quick Firing Guns.-p. 494. Volunteer Equipment.-p 505. The Aldershot Maneurers.- 1 . 511. A Nailless Horseshoe -p . 509 . The Army in 1 scs. p pes. The Russian Cavalry.-p. ©es. Mounted Intantry-p. 5.51. Chili and Peru.-p. 566 . A Prqcical Staft tor the Army-p. 5il. The Principal Veterinary Sprgeon's Report.-p. Dist. The New Bullet. -p. 593.
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## JOURNAL

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Vil.. II.<br>DECEMBFRK, 1NSU.<br>NO. 7.


 revised firing tactios for our army this rear. the cavalry helal - batrate competitions ambl used their wint weajoms.


 known distances, have leern allowed the earbine ats rompuration.

From the berimning ot target practice and compertions the eav. alryman hav heen askinst tire a hetter arm. and this want of contidence in the marbine led to the isule of a cortain number of infantry rifles tw eath trow of cavalry: as a matter of courve, thes arman fell into the hands of the best shots. ame the opinipns of these experts set the rule. ' Praetice with the earbine was eontinued during the tiring measot. but was comsidered. in a way preliminary. To get hold of a long frun was the emd and aim of all marksmen. ('avalry. men at all competitions put aside their carbines and used rifles. The tow men in each trony fortunate enough to get hold of the loug guns were allowed all the ammuntion they desired. 'Iliey were generally excused from fatigue, stables, parade, retreat, ete. They were "selects." and having mothing else to do but practice. it is not -trange that high noores were made and the long ginn considered
a necessity. lut it is unquecountal, that such a delusion could hatw been practiced for so loper a time.

Late, but not too lade, the cavalry have suceeded in obtaminer separate competitions, and this year they were hedidas follows: A1 Fort Wingate. New Me fiow for the Departments ot Calitirnia athl Arizonat at Bellevue, Nebraska. for the Deparments of Daknta the llatte amd the Coluthba; ;at Fort Leavenworth. Kalnals, fir the Departments of the East the Missouri and Texas. All wore ermburtell as division competitionsfand. in giving the scomes male ly the cas. alry, as well as those make by the infantry in their competitions and in comparing the two. if will be seen that the carbine. "p twat including six hundred yagds, is not inferior to the rifte.
Division of the Atlantic, tofal score for iniantry team,......................... 515. At Fort Leavenworth, total seore for cavalry teann,............................... ;ine Division of the Missouri, total score for infantry team.................. ....... ins. Division of the Pacitic tot score for infantry te........ At Fort Wingete it tot score for cavalr: team, Atals of the thre in intrt teane for cavary team,................................... Totals of the three cavalry feams, ... .................................................................ni

The wisdom of confining the cavalrgman to the use of the arm issued to him is now appurent, and the good work dote on the dittir ent ranges this year, should contirm us in the beliet that we hate only to give sufficient tifne to practice and that the arms we hatware efticient, or at least sutheiently so to make us pertictly independent

Supplementary to the carbine competition we had our revolver competition. It was quite interesting on aceount of this heing th. first appearance of that weapon in army matehes. The casabltiowere limited to one horse, shot in the neck. Asonly ous competitur was allowed from each organization it was not a fair test, the morn being detailed principapy on account of their proticiency with the carbine. However, the affair passed oft creditably to a majority ," the contestants, but confirmed most cavalrymen in the opinion that the revolver can ouly pe made a useful weapm in the hatms of an accomplished horseman and an expert shot. In our serviee it is prac tically useless unless we pan get better horses and have more time t. devote to this special dty. Most of us beliere in the revolver and desire it, but the resuld of the firing at this competition proved ${ }^{\text {a }}$ many that the horse had much to do with the making of a score an: that when both horse aff man were awkward the revolver was in:deed dangerous to friends in any direction within range.

There are doubtless in each troop a certain number of men wed prepared now to use thip weapon, aad they should be so arment, an: time should be allowed to train all horses and pertect all the men
but to place a revolver in the hands of a poor rider on an anbroken horse is absurd amid inasmuch as this monle is insisted upon frequently. it is not strage that many are oppesed to its general use.

The cavalreman never makes a more dashing apparance that when mapilly firing the revolver, with horse at pered, yet well in hamd. so that the will of the rider extembs to the feet of the horse and where buth seem to have a single objent in view. There was a number of gool horsemen and grond shots at this rompetition who. making the run of eifhty yards in six seconds and hitting every tarsert, called applause from spectators not supposed to be qualified urities, and made many converts, among ravalrymen present, the the revolver.

The reverse of this picture might he deseribed but it is already. ton well known in the service. We were indeed tortanate in having only one horse wounderi, and the thought oceurred that. if the officers who cantrol the drills could be present at a compertion. more attention would be paid to monnted pistol practice fior more reasons than one. It is dexirable that the total score with beth carbine and revolver should be counted. in order that the prizer may ge to those who have perfeeted themselves with hoth weapoms.

It is guite evident that the cavalre of our day. with the arme we have is a very difterent tore firom that deserihed in the books we read. and inasmath as independence of action seems the the principal object to be attathed, any force, that can hold its own on the tiring line and at the same time can mowe with the puickloes of cavalry most be eomsidered the strongest in all respects. Where a trooper can carre as good a rifle as an intantryman and can use it aseftectively. it must be that any improvement in fire-arms impreves the cavalry in greater proportion than either of the other arms of the service: for when we meet an infanty force that can not be charged in tront withont annihilation. we can move around and maneurer until we tind a weak spot; or we can certaing hold it where it is. destror its communieations and supplies und finally starve it out.

The murmur of a reaction in target practice in the army is now perceptible and those opposed to devoting so much time to that part of a soldier's duty are going to extremes in their denanciation. In the matural course of things this was to be expected. as any reform without a reaction would be a thing unheard of, and the force with which target cranks were carrying things was too strong to last. Some post commanders who favor target practice make their men live on the ranse ant work there until they are worn out. neglecting all
other duty, while othersfon so tavorable. have only sutticient prace tice upon which to frame a report and escape inuriog. It is to lue hoped that common sense will be made the rule in this matter. and $\boldsymbol{r}$ that the reaction now eoming will not be allowed to carry us hath to the situation of a tew ytara since. when soldiers were well intormed in every particular save for the knowleqe of their arms in tiriner.

There is perhaps no ifhmediate ilanger of this. as all oftioners come manding or serving with troops are fully aware of the neressity of having them efficient in the use ot their arma. It is only meresary therefore for us to avoid bextremes and wark toirether tor armed drill as well as fair marksmatelip. It would ye as bad to have men unable to come on the firing line propestan an have then unable t. hit anything after arrivisus thexp.

[^10]The pistol may well bed as an adjunct to the saber. commeneing to fire at about fifty|yards, and reserving two or three shots until after the collision. 恠 fact, some shots would quite surely be left as a result of commencing tire at the refluced distance.

There would then be no particular diffeculty in trawing the saber, fastened under the leg. ds we now, carry it, where it cammot swing.

Now as to the saber, in nineteen years service in the cavalry. have never neen or headd of a troop commander who made any very earnest effort to perfect his men in its use. I little drill has been given in the thrusts, cuts. etc.. occasionally a riding sebool with heads and rings is aftempted, but not enough is done to famit iarize the men with the 保apon or to induce contidence init. This is not always, or even oftell. the fault of the troop commander. :

We are taught to consider ourselves mounted infintry, and are generally spoken of abropd as such. Most of our time is taken up, learning dismounted drifl, and in gaining meless perfection and precision in the manaal bof the cartine or as aften in that of the pick and shoyel.

It is also natural that men should have no contidence in the saber when it is always isfued with about as litthe edge on it as an an ordinary club.

The blow of a property sharpened saber would be almost equal to that of an axe; but an it is, most men would rather have a good club. To arm our soldigres with a weapon of this kind amounts to an absurdity, but we hate been dejng it for years and probahly will continue to do so. In the Austrian service some reurs ago. I saw sabers issued with edges fike knives, and of lengths propurtioned to the men's heights. Why can we not take the same common selne view of the subject? If a weapon is mate to womb or ta kill, why not let it be fashioned for that purpose?

A digression has been made in tavor of the saber-the idea be. ing to retain that weapob. but by mome to abandon the revolver. In the charge, the pistol might be properly used with ctiect and the saber drawn when at clofie quarters. If the manis cowl. he can re. turn one weapon and dnaw the other in very little time. We used to to it at West Point, between firing at one head and cutting at the next.

It is not practicable, with the large amount of carbine firiner re. quired of us during two months, to give, in the intervals of that practice, the proper attention to instruction with the pistol. Take for instance a single tropp which fired over 22.1001 rimuls of car-
bine ammanition during the last season, and what time could there be for ancthing else?

From the very fact of there being a figure of merit mbe made with the carbine. and none with the pistol, material interest is naturally centered in the former arm.

Dats unsuitable for carhine practice copecially raing. windy or dusty ones are just as little suited to instruction with the pistol, as all our practice is out of doors.

The remainder of time is too short : and men. tatigued be attendance on the range from early morning to noon in the heat and glare of the sun. are not naturally disposed to take ally interest. it taken out to pass what is lett of the daty at pistol practice.

Ther wobld hadly have energy emourh to liven to explanations. Fer this is the way in whieh they are to be instructed and acoordine to the "small Irms Firing herulations." all is mbordinaterl the the carbime.

It was with the utmost diftienlty that we were able wive anythine like the perper atention th the pival, athe my trop onty tithished practice on the day hattation drill was revumed.
 days were riven to pistel practice: dismomoted pratice, which in-
 already taken sewen hays

A grat protion of the time tir moment work was taken up in training the horse twenty-nte of which were newly purchased and many of them as momanareable a horse could well be. During the mix werks earbine pratice the hat bere almont unused exeret for herd guard.

It the weapurn in ter rexise proper attention. we must hate not
 the clowe of the drill season, When the horsex are in a gome state of disciplife athlet his lac emtirely spatate trom the catbine season.

Gur gallop. which require he to matere eighty yardin fiftern-
 were able to gallop at that gatit, and when required to go more sowly. they repeatedly booke in their gats. dropping into the tron and then resiming the gallop under the spur, so as to chtirely derange the
 secomd Gme of my own private horses cond not pass the targets at an rebl gallop in more that lwelve seomens: and the other passed in eight at his slowest sfit.

There is:modrantagd except to a poor rider, in gallopine dowly. The main thing for good shooting is an ceren gat. which is hent ,he tained by letting the hote gallop tredy: besides. under theor eir cumstances, he is less liafle to she.

Any man whe is not lexceptionally awkwarl. amd a peore riber is able to fire five shot- with deliberation, starting with the revolver cockel, in ten or eleve日 seconds. The limit ot time should lie. changed, and the gat incteased, wo that the time oroupind in paraine eighty yards at a gallop fonid not be lew than ten mon mone than fitheen secomin. If men wre in action they would certainly net chatra at eren ansiow a gat ais reconmembed

 prevent the horse from fhyinge as be often dees. from the side on which the tiring is donce. When he tinds the next shen tired on the other side. and is confronted with tatrets there which he rantur in cape. he will be disposed tio keep the middle compe.

There is eno advantade in makius the seme five insteat of is shots to assimilate with therse of the carhine supposines the ahos. suggestion to have been afoptent the men womblave lens tronble in marking: and then the same number of shots would be fired on each side. It would alsd grive the trooper leether paction in tirine atternately to the right add left, and make him leso liable to leatn to. much out of his sadde, therely deranging the gat of the horse

Firing to the front shendid.not be commenced at a greater ditance than fifty gards. the being much the mest dificult direction in which to shoot. It has been my obsersation that few hits ar made hefore the last two shots- the others are merely thrownatway even when the men are well trained. The seore to the front should not consint of more than four shots.

- It is a bal principle to educate a soldier to exhanst his ammuni tion before reaching the enemy. Whatever is tatught on the drill ground is sure to lave it effect on most men in action. The magor. ity of men are not very fool under fire, and the effert of this in struction would naturalle be to cause them to exhamst their ammu nition in a charge before reaching the ememy, and then th hatre th choose between running \& way and a late drawing of ablers. which would undoubtedly demofalize them:

After a thorough trialof the system of $\cdot$ snap shooting ${ }^{*}$ as rec. ommended in the small afms firing regulations, I am satistied that it is not the proper way tb shoot. Every man who is not . rattled takes more or less aim in shooting on foot. In such shooting. if the
"smap - - otem" in tried, the man cither pulls the trigger tow soon or tow late: shonting ower or ander the target, su that little renult is ohtamed at wer ten sads. The life ot the shot is often werably
 enhalls. most of ma mises. both monnted amd dismounted. Were -1...- il:at went below or betweol the tert of the silhonette tiring ato. ${ }^{\prime}$ : liner th the rules prearihed in the small army firing regula-

 not praticable.

By experimento. I have finud that the bent remble were obtatined be the tollowing methonl: The piotol is raioed athe eocked as pre-
 approwhing the tarest bower the haim rapidly thll the forarm is horizontal athl prontine in the ereneral dirertion of the target; thent the gintol forwambin the direetom of the target till the arm in
 is on the principle that a monnted man wan. fire a moment. point his
 and the errore of under or aver shonting are entirely eliminated.
bliming the practice season we experiencedoreat diftienty in extractine emper catridere shells. This was mot the case with the sulitheated ohes but with those of the reloading type.

All gave the same trouble although made in differemt vears. They sedmed to well when firel and were prodactive of great trouble when reloated.

The rim of the shell is tow homat and sticks on the trame of the revolver. Nearly all my revolvers were new, havind been drawn atter returning trom the GERosimo campaign. in $18 k=$ : and ten of them became disabled from cabses other than ordinarf use, or onequarter of those used in pistol practice. The frame seme to be too wite, and besides. the evlinter in nearly alt of them dewew not revolve to the proper peint when set at halferock.

The extractor is also a miserable attiar, allal works with the greatest difficulty mointed.

It was oberved that the worst results were whained in firing to the front. This was not hae entirely to the facts alowe stated. but to the scarcity of silhouctes at this post. There are ondy thirty of the standing ones. which are the only ones we couth use, so we had to utilize them on ruch days as they cond he obtained and betore most of us were realy for them.

If it is lesired to give the revolver a fair trial as a weapon for
caralry, we certainly ought to have a fair allowamee ot ammunition to test it with, and not lef than 500 rounds per man should be allowed.

A revolrer of smaller quliber, say. .3s. amd rarying almut twenty graine of powder, or less, yould rive us all the results we now have with the naving of a useles amount of recoil and a great weight ot ammunition. It is not necessary to have a pistol that will rabse nearly as far as a carbinp. expecially an it is mot supposed to he effective at more than eigrty yards.
 mule's head. and then go dfinmming the it from a ricorhet.
-We wànt for service "womethingr liftetent from a small eatumo: The present weapon will tange nearly soll yards and kibl. The oh. iect is not. generally to kilf. hut to disable, whirh i- duthe just as wed with:the Kghter weapon.

There are other defect ${ }^{\circ}$ than those mentioned above' one is thatt. in firing. the spring of the ejector-rorl becomes weak : and. when the pistol is raised to be cocked, the rod falls into one of the chamblim of the cylimber so that it will not revoive. This is a werions defent. and one that might happhat ang time. lisarming at man when in action. If the rod drops. it conters a chamber of the erlimber amd stopsits action.

The Colten revolver. as weapom. is ly far the stronifont ame heat shooting pistol male: butht is some fourteen rears simer I silw the first revolver of the presegh pattern issued to trocips allal it hat the same miserable ejector then that it has now. It seems about time that something shouild be shastituted for it.
 recontly inspected them and elosely. They are all meally mew. amb there are searcely more than athene of them that would mot lin nearly or entirely disabled. tymporarily at least, it trom twelve to
 cartridge shells. There were times on the tareret iromal when hatt a dozen men at one time there sitting on the irrollol. hammering on © the ejectore of their pistop: with sticks ant stomes to set the empet sbells out. If asked why they were dring this. the atnower in. variably was: "My tingreffare worn out and wont tand the work any longer.:

I have been the owner $\phi$ t five or six resolvers. ot the grovernment pattern, parchased fiom pricote tirms, and mever had any tromble whatever with, them. Is if that the Irms Company make an interior
arm. to sell th the ['nited states? ()ne hew govermment pistol was diabbled in my own use this year from causes just sueli as described.

Gf eonurse. much of this may have exived for cears. and never hare been diweovered to such an extent as to be reported until broatht mure prominently into notice by the greater amount of fring done thia year.

Our piatold have but had mueh use ot late yéars: and, though often earried. have principally leeen worn wat in the hohster.

Let us see if we tan mot be something more than monnted infantry and take care of our-elves ar well on hormehacts an on foot.

The results ohtained by my trool this var in two werks prace e tice were as follows:
 percent.
 per cent.

This js not very remarkable. but shoses what may be dome in a short time How much more might le accomplished in six werks, with wo other tiring to interfere!

Why shombl there not he a figure ot mert. tow with the pistol?
The instructions for Small Arms Firiner are bot suttiriently definite abont the neoessity for havine markers and soorers trom* another tromp in pistol practice. It it is devired that nach markers and soovers should lee furmixhert, it is mot on umderstomd by many troop commathders.
 worthy ot it. We have heen pretty nearly ablecp on this subtect for mare than twenty vears. hut we hate tuture gears for practice and intelliment ohervation. The eondition- wow are more farorable than they hate ever been. for examination into the merits at our various arms. With lithe of the lonely letachment ant soouting worfén do. while it used to form a grat portign of onr lives, with larger gatrionm-in most vases, amb with greater farilitiestor axperiment and reseateh, we ought to learm a wood deal. There has been a tembency of late years to fall into a riat. and tolet carbine and rifle firing thrust everyhing wat of place and occupy attention the the Clusion of everything else-just as signallinge did sume veare ago.

It iv mot an evidunce of a groń judgment or af an unprojudiced mind to condemn and dismiss the pistol without proper examination or consideration. as some do. Low much of a friend of the pistol the

Writer of the ..Nmall Arms Firing Requbeimos is. may he interred from the fact that he gives ten parey the explatnation of its prantice, while devoting zas for the rithe and carbine.

These results of experience aml ouservation in at single season are simply offered for what they maty be worth. in the hape that others may to the same.fand in the heliet that we will be berefited ly a full ant firee companivon of ideas.

RICHARW A. WII.I.I.AM:
'inpuin Righth Girmere:

## 

$\mathrm{I}^{\mathrm{F}}$
 that swerhiner more that the publication and dions-ion ot proprod improvement and otep in adrane is meersary. The very
 nolack of portentimel zeal and unity among our member: that weak





 sugerentone ot value he paper or in dehate the tielther that atter all
 dob but inerease the notion of bow litteralt it is wamplioh any




 hate finally disappated torever in owme of the doep "piseon-holes"

 ization and aloptina: o Thi pu-hing of worthy meane is certainly the special province of the Asweriation: of course beemanger gralaally and upon those most uresenty needed. The present is manifestly an atopicious time tor such action. The War Department reem- imbued with the spirit of chathe and progress and not at all arerse to new phan or experiment which appoar tw be in the might direction.

It will be the object of this article to briety diseuse a few subjects connected with our cavalry service that be common consent are admitted to be susceptible of improvement Andwhile not attempt-

 of the Burden hoor. Thlle these whe are sati-mel with the Barden will not be antaronizarl.

For thase trong commankers whe are satiotien with the diond-







 bepartment which berep an aldihe rearly wit, liat of artiches for the eoment and eftienence of the suthere would eetatinly be willing

 hos of all. it maly malle to fiod that therely great satistaction wonld the given to the service.


 Captain burst recommendent and made dalmrate plans it a shoe in most ...sential- the same as the one proponed by the later board.


 hack wheir -lamber along with the later proceediner went -all the papers in the aree. and it is needlecs to add that their reot is
 really interented.

## HITS AND RITTINA

Thenget the whole cataloge from the heavient and severest of fing bits, a jerk of which will pull the avergare horse back on his haunches, w the wher extreme of light and midd lits. whe principle "pplies:

To gat the hest resulta. the hit must be fittel ti, the indiridulal herese's movih.

This cannot be accomplished with our sionemaker hit. Ite thred sizes seem to liffer chiefly in the height of the "fport." a variation that may produce in number two and hree increded severity. But as the width of the opening of the port is about the same in all three
 about the only fittime that ran be home is lengthening or shortenine the chece-straps. or alterfing the corlh-strap.

 prece being the same in lengrh athd in thicknew in all three sion
 important point to look ak is the dintance letwern the whok-piowes
 aceording to the width of the horses month.

Uur bit is generally ton wiale tor most horees. and thpe tron sid


 ened, the animal has lof his reputation of beinur healstemer and - unruly.

 month-piecere and witth of openinge ot the porm.

C'uptain Cakr. First Cualry. in hisarticle on l'uger Bittines Su


 paralyzed by the rmploythentont a hit like that wow in ase.
 may will be atfirmed that improvements in the hit have wot bept pace with those in other artieles ot our equipment
 a bit and get the Oriluapee department watake and turnish it in lieu of a due proportion dif the shoemaker bit.

I do not think that the Orhame ('orjw womh wheer in makins at Bock Island any hit dquired and in meven or di.fht sizas

Thus those officers whererer the shoemaker bit will mot be disturbed nor feel that they are intertered with hy fheorists ar en thusignts on this subject aind those who desire a ditterent one will receive it.

Tocarry weight. let it be the real wish of the I-vociation that the new bit should not be a starting departure from the one we are accustomed to, or lengthy argument will arise and prevent acomm plishment.

Officers like Captain C Wh, Lieutenant Robritson anel othere who have already been heard from on this matter. would presumably be
of the number to oftier patterns, anal watd, doubthes, emberly in them the resulte of their experience ats to the other sariations; such an relative length of upper and lower branches: reduction of weight: width and mode of attachment of curbstrap. The present curb-strap wears away viry fast so that a sudden pall by the horse cuts it through: I have recently seen halt a dizen chat were nearly new. cut through hy horses trying to . ${ }^{\text {b }}$ bolt "at pistol practice

The main print. howerer. is to set real rariations in any bit alopted. o that be ning different numbers or sizes some actual fitting and selection for ditferent horses can be done. Carefal itting, with light sensible bits, will do more tran anything else towards enabling un to move harge bodies in line at exact caite.

And now that mounted revolver practice is made a matter of recond and comparison. there is no phace in which the resulte of improvement in bitting will he more readily shown. Comfort to the horee will give ease and safety to the rider inhandling his pistol. and consequently improved moores.

## RENOCDTS

It i with some hesitation that 1 venture to include this suhject. with the other two disersed in this anticle -an it was the awored intention to seak only of matters on which there was enotgh namimity of opinion to warrant the hope of harmonious action and conseguent accomplishtuent.

While there is little or now disent from the idea that our present way of settins horses tor the service can be improved, the method- proposed ditfer widely. The imprortance of the subject and the desirahity of making even the smatlest steps in advance, -hould be a sutficient appeal for us to lay aside edaborate plans that seem unlikely to he carried out at present and unite in working for what can probably be obtained to start with. For if the resulte are but slight at tirst. evidence of their being in the right direction will cusure our obtaining further and further concessions, and in the send full realization.

Conder a mode ecently followed for a few years a contract is made with the lowest bidder at some particular place at Louisville, - St. Louis. etc.. to furnish a certain number. Horsea are presented to and inspected by a cirilian hired for the purpose by the Quartermaster" Department, and if "passed" the monoy is paid by an officer of the Quartermaster's Department.
some of the detects inherent in this method are
First. The successful bidder fills his contract by sub-letting, or 4ne reaches the distant portions of territorv from which he draws. by
sub-agents, middemen fer minor dealers. Take out their various profits, also the expensefof brincing the stock in to the point of delivery, it is easily, seen that the figure offered the breder must be on low as to purchase onld a chass of horsen interior to what is attathe. able at the contract priqe.

It may be replied. that horses delivered or oftered for sale at a central point like st. Ipuis. must be a little higher than if sought out individually on theftarm: but this is one of the unneressary expenses of the systemf the rementy tior which will he spoken it later on.

Second. There isatinost nothing to bedone when new horme with disqualifying defects arf finally received bey the trop commander Theyare often purchased just betore or just after the new timal yat begins, then banged arbund in cars and stock yards for days and nights of mid-summer heat and thirst : and posible then herded and driven over miles of dry desert or adkaline phats. Fivery bath of new, green horses must have on arrival. some which are out it ant dition. sick with distempers*mi other hisombers or infured in sisht bead or limb. An exandinger bard at this stage is hamedy cowe able to accomplish much. Iffe present system does not somin ionomemplate any inspection; but should a board be comvened to act on certain horser, any defect will be allewed to have been entimely produced." route, or any how, increqsed to a dispualitying degree on the jour ney. The horse will heleft in the post quartermasters hathat tion recuperation and filally the troop commander, who know, he mat not get another in his phap tor a couple of years or even more, will generally take the horsd if he can be used at all, and will simply "growl."
 lowed for some years phevious th this metholl. had the draw-hank that officers were not al rays selected on account of capability or $\times x$ perience.

The price paid per head varied so from vear to vear that bredow could not look for a stedy market by selling to the gevernment Hence, the board could never tell whether it would tind suitabhe horses in any particularflocality and would often have to make un successful journeys far and wide. Then the contractor. in dexpair because good horses were not offered, and poor ones were not an cepted, would probably protest to the Quartermasters Departmen that the whole businest was at a standstill, that there was littl. prospect of ever filling phe contract, owing to the extreme exactionof the board. ete.

A, a result. subl member as were comsidered tow hard to


 martor* beparment

This way of timally erpediting the hasimes has cridently ledt to the mode of havine wo lwarl at all. and aceptiner without question whaterer herees the inspector ehomes to take. Sow it in evident that this is meral impmement on the board sontem.

While not intendine to attack the -kill or integrity of any of the present citizon in-peremes. which wonld prowore controwers and involve delays, it neds matrenment to prove that it a board ceven if
 to dee line nearly all the horses utfered hy the combactore as not up to



The deep seated root of the trouble lies in the tact that the fybe of horse wanted for ravalry is erowing satreer abd warter in the loniterl states.

The demands of trale are lealing to the disemination of the beaty Pereheron and Clydestale strains amonget beeders. for dratt purposes: or else attention is devoted antimy to raising troters, that may "lower the recort": or to thoronghbed rmining horses.
 that in mane localities where sutable horses were obtanable a few years agre the type haye ehanged so fast alld no rompletely. that horses abaped for cavaly have now almost disappeared entimely. A step infallatme was berun last vear. ( 1 ses). A contract at Leavenworth tor a momber water hores provided for the in indere
 veterinary surgeonand a civilian inspector." Thenontract price was only siz1.is fire each borse deliseredand accepted. It would have been easy th predict the rejection of an immense mumber of dorses, and conserpuent delay and triouble. Of course this method leaves the poter in our own hamds. but, as long as the contract system is forlowel. it is almost imposible to prevent bils being made at figures no low on account of competition as to ensure just such results.

Remedy.-That the Association urge the authorities in Wash: ington to abolish the rontract system and to allow purchase in open market. This would require but the change of a few words in legislative action, and there could scarcely be any objection exceptthat it would involve a little more work and time to get the num.
ber of horses required. On the other hamd. this delate would he an adrantage, for some horses would be bought later on in the fiscal rear, towari winter, when prices always drop. or it in any particular locality there were advantares in wating till the follow. ing spring, this could be dophe. The horese would then be shipped to the extreme southern popts at a colder season and arrive in better condition.

If citizen inspectors select all the horses required. they could certainly do better and wo申ld, perhaps, be pleased and stimulated t., greater excrtions if allowed to bay in open market. If 1 am not mistaken. there is at least ione inspector who is cmplosed permarnently. It would be very fittle additional expense to permit him to travel constantly, picking mpod horse here and there rishton the farm. and have it shipped from the nearest railroal station to any point at which an ottiepr of the Quartermaster s Department is stationed. The extra cost of sending an individual horse or a few horses would not be very much greater than by the car-load, and would be more than covered by the cheaper first cont of the animals

The foregoing remedy suggested as what can be done without incurring the opposition of the Quartermasters Department-fir this would still leave the fourchase entirely in their hamis. torses being bought by their owh employes or betteres of that department, and handled until aransterred to a troop entixely by that department.

I agree fully with Major sicmer in his remarks on Cuptain Harris' article in the Jocpmai. March 1asx-that our homes should be bought by boards of cayary otficers of experience, and that every officer on the board should "sign the report of inspection and be held responsible for each hfrse."

But, as he also says, " Xteglect to perform this duty properly on the part of caralry officers has no doubt caused the framing of the law now in force." At all enents, it was martly from this and trom the other causes already noticel, that caused the system to be changerl If a board, composed as hal been mentioned at Leavenworth. is al ways convened we can harply ask more as long as the contract system is followed. There are, however, some other phans which I would urge the Association to codsider.

Partial俍medies.-A in case of entire purchase by citizen in. spectors, let the "open market system" be followed. but in this scheme endelavor to get the Quartermaster General to allot only part of the available funds to pay for horses selected by his agents and then send a part to regimental or post quartermaters sper
ially for dishursenent for horses that may be purchased by troop commanders or by loards of officers.

At certain posts. in this way, there would gradually get to be a steady supply of horses brought in from the nuighborhood earh year. an it became known that the government would purchase at a food figure and that the money yould be paid at once.

To encourage farmers and beeders. the price paid at a western pont for a horse accepted there. sliould be higher than in Illinois or Missouri, for the gorernment would have saved the transportation expenses.

At other posts where there was no likelihood of accepiable horses being brought in for sale it would the quite practicable to permit troop commanders in the fall. after target. drill and maneuwer seasons are cmoded to trater more or Tententensively through certain likely districts and draw checks on the post quatermanter when proper horses were found. In cases where by Ibecentor lat there was still money in the latter's hands, which it had been impossible Cotioburse judiciously. there would yez be plenty of time to return it to deparment or difision healynarters or to the quartermaster General and have it used in metter localitien early in the winter when nwners will -ell the chopest.

One plan proposel. of a depot in whare of setected cavalry off cers, where all newly purehased horses shall be vent to be trained and broken ath then sent to troops cohored aml matehed. We can hardy expert to inalugurate without encountering opponition from the Tairtormanters Department. It can be gradually worked up. posibly he using new horse in the tronpe at Fop Riley for a year. and Arattine from there widjeent resiments, rephacing these again by new oble

But small depots in charife of the Quartermakeres Department (ath be started without ditheulty or antagronism;' and under select ofticerzof that corps, the money gradually ohtained for increasing the size athl scope of their "phant will be greater than officers of the line could ohtain

The rers hest kind of remonnts would be ohtained trom a gov. ernment hreding entablishment as velecting and mingling of differ ent strains would be always in the direction of producing exactly the typedesired. Possibly many officers think with Captain Ilahris, that it is almost useless to consider this scheme as there is no prob ability of carreine it through at prevent: but an.entering wedge in that diection will mot be hard to whain. nor interfere with the other propored remedies. Let the Awociation work in unison with

[^11]
the authorities in. Washington for just a line in the next ajpropria tion bill, providinge ther the purchase of a tew, stallioms. liy the datar termaster's Department.
(aptain Pond or some other officer of the (2artermastur, Department at Fort Hiley, whow would be interested in such work. could make arrangements to have proper mares brought in there from the country about, or to take fhe stallions on short thurs: satistartiny coltes to be takell at certain rates.

The expense would beftriting at first, a tew enlinten men trom the large garrison at Rilde, could be easily spared from certain duties, to handle and care for sires and colts; and the Quartermats. ter General would certain'f get from year to year Jarger sums and finally build up an establifoment of which his corps atol the army at large would be proud:

As only a few stallionstwould probably be appopriated firr at first. the matter of who sibhald buy them might well be lett a-ide, even if some one most emphently adapted for the work did but happen to be selected by the secretary of War at fimt: the main thingr being to "feel our way" fof a few years, until the scheme is matured enough to speak for itself dy its grood results. Then appropriations will be more and more fredly bestowed.

The wonderful buiding up of our bew nayg bears withew that there is no hesitation in groting money for what is shown to be proper and legitimate for onation of sixty millions of people.

To scm ce: There would be then, 1. Part of the fumds disibursed by the Quartermasters bepartment, as at present. but in ...0pen market." 2 . Part turned oper to regimental and post quartermanters; if not used to be returnod in time to be spent as the first part. 3. Gradual tormation of sub-depots, abso of one larger depor at Riley. 4. Beginning of a breeding farm there.

No matter what changes the future may bring in our weapons. ammunition. tactics or dell,-one thing remains ronstant: The need of each trooper for a hort-coupled, clean-limbed, sound. active. and nimble horse, of mediun size, with enough "coarseness" to make him hardy and tough in the field, and enough good blood to remler him spirited, intelligent and kipd; rationally shod, so that he may belie the adage that one horse con wear out four pairs of legs: anil carefully bitted, so that he understands and obeys the slightest pressure of rein or leg, and thus afcords to his rider the utmost freedom in the use of his weapons.

Is not this within our ieach?
WM. BAIRD,
First Lieutenant Sirth Canalry.

## TIHE ©AVAIRY AT GAINEN MHLA

$$
\text { - The cavalry here caused the loss of this action."- } \boldsymbol{k} \text {. J. Porter. }
$$

T11F: batte of (iaines Mill was remarkable for its sampainary Clarater and the stabbern resitance oftered ly the Federal trople. The emíre force brought into antion by General Porter, did thet exceel ?!omm men. While that on the Contederate side could wot have heen hese than is..j00.:

On the night of the Obth and the morning of the $2-7$ th of June, friz. it will be rememberel. Parter wighdrew his command from its alvancel $\mathrm{l}^{\text {misition and tormed line of hattle tacines the west and }}$ north. on the slope of a platean in the vicinity of Gines Mill. corering the romds leading trom Ganes Hoase. New Cohd Harbors and ahd cohd Marbor to De-patch Station on the Richmond and Fork Viser R. R. The part of the platean oweupied. trended in a southeaterly and northwesterly direction. noarly parallel to the Confederate slde.

Chickahmins, the westerly end turning somewhat abruptly toward the suth, and falling inte a rather steep desernt. united with a low. opell and marwhy strip of hand alone the river. At the foot of the platean on the north and west side was a small stream flowing sontherly and emptying its watersinto the thickahominy. The slope of the plateau on this side was fringed with a dense wood, which embraced both banks of the stream. From this fringe
phatef - infantryandartilery according to Gencril Whatin "The Peninsula." numbered 19wifuen. He say. that init of the rexular cavalry under ceneral Eviny were put in powition
 army onthe risht bank. Tas falling back howard the White Huss. The Fourth Pennayivania


 woulit make tortric-whole ntrengh on the thelit wis mis men.

The Count of Paris places the streagth of the confederate arms on the 3ith of June. 1802,
 Beaver-lam ireek - which could not have been less than : when - we bave bxino on the

The combined lowes in killed and wounded were at least 14.000 , being a fraction lese than fifteru per cent. of the aumber engaged.
of wood the ground has a gentle slope upward toward the east. and is open and uninterrupted by obstacles of any kind. It varies in width from about 400 of 1.000 yards; the south and east sides, sloping irregularly toward the river, merge into a strip of undulat. ing bottom land varying foim 300 to 800 yateds in whith.

Bridges had been constucted at several points over the ritur. in rear of the position Portés had selected, for the use of then $\bar{m}$, of the Potomac during its ocqupancy of the line of the Chickahoming.

Syeres division was plaged on the right of the line and Moreaid: on the left. following the thend of the north and west slopes of the plateau. The line of the feft wing, being in the timber along the foot of these slopes, extended only a short distance to the left of the road leading from Gaines House toward the the southeast orer the plateau, thus learing a potion of the wool on the extreme left. unoccupied. McCalas divison, an a reserve, was placed about dow yards in rear and opposite Moneln.'s right. The batteries of the left wing. including a number attached to Mreatios division. which could not be placed in position on the front. Were hedd in reserve along the brow of the plateau. Three of them. Robertwosis I. s. Horse, Eastos's and Kerks Pennsylvania, were on the extreme left and rear, a few yards fon front of the eastern brow. facing the - unoccupied wood about somparts in front. Ronertson was harthere to the left, covering the approaches via the bottoni land. The portion of the reserve cavalry division. present, was paced in josition on the extreme left afd rear of our lihe. some 201 yards trom the foot of the south and east slopes of the plateau. facing the west and covering the bottom lapd in that direction.

As there have been so many misrepresentations and since from these misrepresentations so batny misconceptions have arisen in regard to the part taken by the cavalry division in this battle. and the number engaged. I deem it fbest. before proceding turther, to give the organization and numbers in detail. The division was composi.. of two skeleton brigades. The first (ieneral cooke persmally in
 S. Cavalry; Captain C. J. Whitiva, commandinge about $2 \cdot 0$ sabers.
 Lancers (as it was designated at the time.) colonel R. H. R1sh. commanding, about $\mathbf{2 5 0}$ sabets. The second brigade (Colonel G. A. II.
 - II," First U. S. Cavalry. thieutenant-Colonel W. N. Grier. com manding, about 125 sabers; fand the Provost Guard of the division,

Lieutenant Balk. Sixth Li. S. Cavalry, commanding. 3! sabers. Total strength for the division about 634 sabers

The division manenvered in equadron formation. double rank; the Fitth l. s. Cavalry forming two and a half squalrons: the First two. and the Sixth Penneytrania three squadrons. The tactical disposition on the field was that of contiguous clase columns of regiments, the Fifh C. A. Cavalry on the right, the Firet U. S. Caralry in the center. and the Sixth. Pennsylvania on the ben

By 11:30 A. m. the dispositions of the forces beretofore mientioned were about finisled, and we awaited the tirst onslaught of the onemy who was approaching. Soon a hoytack by . . P. Hum's division began on sroes front, and be 12 m . it bal reached to the right of Morelis division. This attack was spedily repelled. the enemy falling back in disorder. About two hours atter. a second attack was made by the combined divisionsot Lavistheet and Hill. this also was repulsed : and at about $\mathbf{a}: 30 \mathrm{P}$. M. these divisions -reentorced bya part of Jacksos army-made a third attack which engaged our entire line. but was as unsuccissful in its results as the tormer ones

Som atter the secoul attack, MaCants divinjon was sent foramard to reenforce our line, and hater Soomens of the sixth Corps-which had been sent across the river-was allded to it. thes leaving the line without any infanter support to fall hack upon in catse of a reverse. Every available intantryman had heen sent into action to
 of the lett, were th fany trope except the roserve cavalry and the batteries heretotiore mentioned.

A little after if $p$. m. the troops of the enemy which had made the successive attacks upon us.having been reninforced by Jacksons rewerves. made a general attack throughout our entire front. This attack was-stabbornly resisted tor some time. When suddenly the center and lett gate way under the pressure of ocemolmine numbers. most of our troops talling back in a disordered condition. A tew regiments. however, keeping up their organizations, tarmed and delivered a fire while in retreat, while othere were completely broken up, the men scattering and pushing to the rear anfast as possible. The reserve artillery wav thus left without ally suppert and some of the batteries limbered upand slowed to the rear.

Jast atter the center and heft had been broken, and our troops were in tull retreat a brigale of the enemy intantry (Pleketris) appeared at the edge of the wood on our extreme left, in frow of the batterien preicously reterged to, and began to move toward them
-
$\qquad$
$\xrightarrow{-}$

The batteries opened fire pon it Nith pherical case and shell. The enemy kept idvancing, anf the hatteries haging no support. the one on the left began limbering up. At this moment the cavalry divi sion moved toward the bateries. and when it had gotten quite near the left battery General Conomenoticed this movement, and rode toward the battery commanfer and told himp to go into hattery and he woull support him with his cavalry. The pieces went into battery and commenced firing again at the adwancing toee. The wavalry division was halted on the sope in rear of the bateries just below the brow of the plateath feneral cooke examined the gromal in tront and finding our penftion untivorable tor a charge (as I sup. posed) on aceount of the hateries in our tront. moved the command by the left Hank around the sope so as to bring it into line tacing the prolongation of the enqmys line. While the commant was in this position, he role tiowifal and survered the sromed: retarnins. he ordered the division to powe tward its ohd ! !"sition and when it arrived opposite the interpal between the batheries it tiormed lime. of cose columns be resimfuts. in rear of the batteriow tatitus the front.

During these manemer. the enemy adranced shely towath the batteries, only halting to lobiland ieliver fire. The batteries repliod with loner range projectilds until the enemy had approwhed t. within about 100 yards, when canister was used. the firing beooming very mpid. The enem halted, and his line watured under the effect of this fire. Large setpe could be secol in his ratak- in front of the batteries.- the right add left of the line was hardly tourhed.the fire being too much egncentrated. A- we stomed wath hing this fierce contest, our position fas unmasked to the ememy on the right. . as he ascended the gentle stope. We were then subjected to a severe
 hearily.* Soon the bateryer almost ceaseel tiring. their ammunition beroming exhasted. The enemy, taking alrantare of thilull, moved forward. - The risht battery legan to limber up: the cannoneers and drivers of the other battery begat to leave their pieces and go to the rear, thi battery being so much cut apley the loss of officers, men, horses and fajury to material that it was impowible to bring the pieces away. fhout the time the batteries ceased firing. General Cooke, who was in font of our line, turned to (aptain Wuring and directed hitn to chapre his regiment, and then goins about,
-In the Firat C. S. Cavalrs, one fricer wounded, four enlisted men killed anil eighteen

## wounder.

In the sixth Pennsivania Cavalr, ope otheer wounded, tive enlisted men willed and fise
 $\square$
frocendelt the hett Hank of the division. Captain Wharima, after watine a tew moments, wave the comand wove torward. The -athers of the men were in their abhares. I partly furned to my men athl ordered thelu to. . draw saber" and thin "ommand wan taken up all atous the lime

 a- poxible an we proweded maward: but at we did not have suttirient -pate in trint to take the chaseins sait. We could not rench iniv lime in fall career. Arringe mear the lime we were recoived by
 the oftioers exeept one heris if combinit and ghite a mumber of men:-
 paocel torward and through the ranks of the sheme. Whike trag-ment- turned to the rifht and moved to the rear."

Our eanaltion were sreat. Lieutenant Swert wat killeil. Cap-
 and Captain Whrisi ingured he his lorse bedite killed and talling unon him. Threcentisted meth were killed twelty tive womded, and twentg-tour misoitg. Tolal commiswoned and entisted killed. wombed and mixine titgeight. Twenty four homen were kiown th hater heen killed.

When that fartion of the command which was intact strack y -mema. his line watered and was hroken here and there amil was -rme little time hefore its comthuity was rothed. If The charge had heen followed up by the other portion of the divisiom. it wouh
 ererythine was made tavorable to that end he the rharge of the fifth IC Cavalry Exen after the enemphad recosered from his comfision. he tatiled to move forkard to take poseswion of the guns that remained. but wated an it expecting another atheck. But the sixth


 until I attempted to stand up, that I had any idea of heing woumseng filing arouna,

 he recurgized me and cuminx up, helped mee mount the spare horae. Just then sheils from
 1 moved toward the east. keeptilg under the brow of the hill in rear of the Al.as'- house. Coming to a helge feace with aditch on the far side - and the firur beroming warumer and


 borse gone. Tsmambed ont if the Mich ant drakker sir line one of our pierea coming den by the hedge, to an wen space of gmunit near nur ine ,

Pennsylvania had been fithdrawn (to support Robertsos batter? which retired safely), jult as we were making the charge, and the First U.S. Cavalry, althotgh its brigade commander had been orduru: to support us, and char if necessary, had ordered it to the rear just after we struck the fenemy, thus leaving this little detachman: of 220 sabers to do battle against fearful odds.

The tropers did not retire through, or in front of any of the in tact batteries as has beef reported; as at the time the charige wamade, all pieces which cofuld be moved were about iroing to the mar. those remaining on the field beinge in such a comdition that ther could not be gotten off, perticularly in view of the fact that the in fantry which should hare supported these batteries, retreated. lian ing them to sombat. abone. the overwhelming forces adrathitus against them. The battoties were handled skilfully and dealt tial ful havoc in the enemy ranks, and they did not succumb motil their ammunition gave oft and faite a number of officers, menall! horses had been killed anh wounded.*

The battle clowed with the charge of the Fifth I. S. Cavimy Most of the retreating tofops were rallied on the platean near the riser under the protection of our remaining hatteries and catalr: The enemy, obferving re申nforcements coming up. did not press bio ward, but contefted himpelf with firing a tew shots from hiscantil lery, and night yproaching, both armies remained quiet in pusitin,

Gencral Pofter attributed the loss of this battle to the cavalr. Ho saye-in hit letter to General Seth Wiblams, Avistant Aljun tant General to Cumeral AcClellan, dated Harrisois Bat. July 4 . 1862. in which he reemunended the removal of ceneral Covike frem command of the cavalrythat "I was horritied to tind cavalr! charging through the batheries on my left and the men Heeiner it terror.- The caralry thene caused the lase of this dition $\dot{t}$ and the abandonment of eight pides of artillery:

This ntatement is unjupt to the cavalry and must have been mad. without ilue knowledge apd consideration. It is also preposteron-
 and attenuated forces, at the last attack, fresh tromps in werwheln ing numbers.

In the right batters. 1 'aphain gerss was wounded. seven enlinted men billed and ele ve: wouncled. makiug in all tineteen bliled and wounded. Ten honsey were killed aud two ghll. loat. One hundred and thirty-eigh apherical cast, thirty-six shell and seventy-five caniste;
were fired by this battery. In the left battery
 Tnis battery lost its four guns.
t. The ithlics in quothtions are

The handtul of cavalymen who made the charere cond mot have influence! the rosult even it they had charged through the batteries as he says they did.

Betore elowing this subjeet 1 de-ire wonbmit a few cxtracts from the reports mate at the time by some of the ofticers who commanded trons in this action

General Markil. commandine the left division, says: ... About b: an wedok the eame on in irrexisthle there ath throwime them-- wes chiefly against the center thad leth. swept un from the ground ty ocercheluing numbris and compelled us to retire. * * $* A$ we retired the artillery opeled fire ferm the beth ated rear hat the
 -mall bodies to support it.

General Botterfabid. enmmanding a brigate of thin division which constituted the extreme heft of the infantry on the lime says: . Fiodiag it uselese to attempt longer to hold the ground evers eftort was made to form a new line in rear and orachally witharaw the brigade under cower of the hatheriew on our risht. Twice did the greater fortion of the command form and deliver a tive with a batery and sallatiry worthy of better saceres whil the chemy pursued honly in erer-pmering numbers $* * *$ The fring of the atillery chowed the seene and saved us from dentraction.

General Martiname. commanding the center brigade of the left division. ays: .. The ememy came on. $* * *$ lt wat a very
 prepomberine of firre. At wher the whole line gave away and re: tired in disorder.
deneral dirifys who commanled the right brigade of the left division, says: . The artillery by order of deneral Porter and under my direction opened fire upon the enemy advanging upon onr left. but it was too late. Our infantey had alrendy comanenced to jall buck and nothing being left to give contidence to the artillery men it was impossible to make them stand to their work."

General sermore commanding a brigide in MrCabis division, says: .. Towards evening both the right and the left of the line were forced. The enemy came through oin great nombers and from the edge of the woods poured a tire upon the artillery. The batteries had already played an important part. They now endeavored to drive the enemy and opened with rapidity and precision but could not contend successfully against the bullets of the infantry at this short range. -
$\qquad$
$=$
$=$ -
-General sykes who fommanded the right division atml whom troons were not influerferl by the rejorted bad condurt ot the
 to pour in jresh tronps arsfainst the 4 gon men who hat batthed him a.
 of his brigade with areal daring in front athl aroumb the Medint house and tirmiy matintaned himselt until the ereter of pontrav
 when the enemy had phthed hatel the tronds opposed to him. hl. Tenth. Eleventh and Sevintecnth E. A. Infantry were hrourht tur warl * * * but thet tiele was tan strom! tar thrm. $\because \quad \because \quad \because$ These hattalions exhantad amd out of ammanition sultenly retirat aloner the slope in rear of Mr(rimef: lowse ami wited with the res of the division at its based.
 what took place on the kef. says in a letter to the difutant lienerat

 under the most merciless fire batteries which otherwine. on atcomat of having mosupport, wouphare been obliged toretire much atrlion than they did, thus waspepding a fire that kept the enomy in cherk
 parting-in submitting their reports-male any allu-ion lo havine lost their guns thromgh th) conduct of the cavalry. $A=$ tw .. Hewing in terror. $\because$ the caraliy m thave lecovered from it very puickly an they were on hand immeriately aftere to stay the adranme of the Confederates.

The extracts given above coulct be moltiplied indetinitely, hat sufficient havebeen quoted to show that General Portak was wiond in attributing his defeat fo the cavaly. whereby he did it a meat Injustice.

Instead of censure, the highest praiser, shauld hate been awardod to it, for thus sacrificing itvelf to support betteries which other wise would have retired whthout eherking the virtorions vinemy. whe were about to envelop ourd left and center: this combined cffort. at the batteries and cavalry giving time and opportunity to our in fantry to retreat to a saf position, where, with fresh troops the enemy was held at bay unfil too late in the day for him to make an other attack.
A. K. ARNOLD,

Lieutenard Cobimel Firsi Cidalry.

The regiment is dinmounted from line. line of columns, reare of columns. and colamn of squadrons.

With regard to commande and signals. the attention. preceding a command or a signal. signifies that only the reserves. or the closed fractions are addrenced. The babing indicates danger of cavalry. The siguals are rarely used, and the whistle serves to attract the attention of the rowers.

The dismonnted squadron displays a chain of okirmishers uphn a front of 100 to 120 paces. A support fidlows at about $\mathbf{B l o l}$ pacen. and approathes nearer as the chain doses on the enemy. The first line adrances by successive rushes of atomt 100 paces, When about 200 paces from the objective it executes a file-fire the supports join. and the whole squadron moses forward at a rum. At fitty pares they give the Lurrah! and throw themselves upon the cnemy. In the ordindry dismonted tighting. the led borses move to shelter and follow the dismounted groups as much as posible. They move forward as rapilly as pussible to meet the dismounted men when the latter are realy to mount. In the heary skirmish line the horses are lett in place and are then protected hy a mounted body. the strength of which is of course variable. This takes pont at phatoon distance in front of the forses and detaches patrols and videttes on its flanks and rear. Its mission is to pursue a beatem enemy in case the font fighters are sucesofill or in a contrary case to extriate and protect the latter while they are rejoining their mounts. The monnted reserve must alos maintain communication with the fiot troopers and protect their flanks.

Omitting other minor details, which somewhat resembles our own, We will go to the secoud part of the regulations which gives general instructions. to serve as a guide for the tactical application of the formations heretotore preseribed.

These instructions set forth the principle that the cond and aim of cavalry is mounted action with the sather or fance. It must dismount only in detault of infantry, and when the nature of the ground. or other circumstances, prevents it from fultilling its proper mission. Such exceptional cases would be to defend a pasition step by step, or to dislodge an enemy from an important point. Evenin these cases. only the number ot men atrictly necessary for the project in hand should be dismounted.

The hedry orler for toot combat inan exceptional expedient. In resorting to it. the horses should have entire security in a place where they need not be moved during the action. Bxamplew would
be found in the defense of a bridge a causeway or a detile. For this duty the dratoons whould be employed preferatly to the cossatks.

The fighting rules of the infantry are applicalyle in mont caters It nuash be remembered however, that the cavaloy is lese tree than the infantry. because it is tied to the horses. The former should fight on foot wifh less stubbormess than the latter. for. even in calse of success serions loss of men would resalt in the disabling of those squalrons that had muffered mont. We reamoll of the extra horses by which they would then he imbara-and Ot the other hand the calalrymen return th their homes. in cane of failure, rather than run the risk of losing a great mamber of thoir mounts and of being thrown into an inextricable diowner at the moment of mounting. \&o. in the accomplishment of the diverse missions that devolve upgit it on foot the cavalry must comeacoronly

- to gain time by delasing the progress at the enemy. while awating the arrival of its own infantry. "pposed to hostile fomesthlier in force, cavalry will generally succed better in delay ying them. by re.
- maining mounted and threatening their Hataks or rear by wid. detours.

Acting on the defensife dismonnted caralry ohould immediately give the maximam intenaty to its fire: on the offensite it -hamal close with the coemy as quickly as posible and if the attark tails.
 toot. will thareore put the maximum mamber of carbine in its he.
 it be sustained be another monted fraction. Several dismomond ennedrons. drawn up in tho lines. will phace in the alvallere lime at least half their strength. With regari to the firing. the instruetions require that the indiviluat fire be mot resarted to bevoml alll yativ Volleys may be tired at ding distance. Firines adetinite numioer ot shots by eath man is regtiored when the ehicf"s roice cath no honser be heard. and when therdis presented an object of vast dimensionwhich may rapidly disaphear. Indirect and planging tire mas be employed at more than 1 poo yarids when it is certain that the enom. is concealed by the gromple or is behind intrenchments. I'p in soll yards the point-blank of the arm is used, but the men are cantimund Whether they should aim at the head. body, or feet of the adrersary.

It is useful when possible, to ascertain in advance the distance of permanent objects in fromt and on the flanks of the position. In order to reserve the mojt ammunition for the defense within the effective range, 800 to 20 gards, the firing should not berin at to, great a range. As soon as the assailant has reached this last di-.
 it- horses if the object of the defence is merely to gain time

They will mot allow themedres to de drawn into a contlict with Side arm- exept where some lowtile fraction have ventured tow far
 the lant extremity. the recree should make a eronter attack in close -rder at the meneme of an-atult.

- The purnit of a repulad emone in exdu-ively reserved for the mannted -uppors. The dimmunted men will mot allow themselves Io be drawn into it. but will nse their tire 10 ancelerate the retreat. If diremmander promit. Hey should join their monnts. in order to

 thowe of the intantry benwere it is reommembed the cavalry to
 From thi- to and paces the aduane is rapid: at his last distame the merthodical antark commencer.
 Gur rexulations for the di-mounted cavalys arting against monted
 rally all the anmmant of their chict- and awat the attark of the





When the ratalry is acompanied by artillere it is racommembed



11. T. MIIFES.

First Lieulenent seemd Cavalry.
var. were they put into training and transterred to the officer to whom the young horses were intrusted for instruction. The non. commissioned otticer. however, dad not leave the retanonts as they were. Four-year-wh hores. which are alrealy strones enough io "arry a rider. mat be advaned in their traminge: if not, their devel opment i disturfed and injured. or matural fante of build and char. ater will be more trmly withlished and they will offer a more obstinate resistance the instrotor when the training is undertaken. The last mentioned is what generally takes place becanse the noncommiwioned otheer ioncerned did not understand emploving the sear ith -uch a way as to advance the development amd socure chedience at the same time.
 areured that the instuction of the gounts remounts might hegin
 really still weak in hiv bones and sinews. hat he is docile and

 treatment he rexico.
 lase bergh the intruction of their grone horses as som a they are recoived I hate seen antomishine results therefrom. The
 a willagnew which, without demom-dration. Werall have been con-
 -how a ther intruction, all improcement in gait and bome; they are hetter heveloped and are stronger. But where these rowhle have heen whtamed the squatron ehiet. tarether with his most ex. pret aticer has eriven gerial attention personally to the yount re. monnt- from the tiret day of the ar arival.

It wa otherwise when this ststem of instruction was entrusted to inesperiched officers. Then it was mot ath unusual thing to see yourg rellombt ingured durine traninge of they were trabed wo much that their natural and rewalar sationere ruined. This slown incelf at oree in the walk, which is uncertain with the hime quarters not in lite and in the trot, which is without a regular calence. This fenerally results from forcing the voung remount inte the shortened trot too soon, and makes him beoome a pacer side-wheeter).

If ang one wishes to awoid such a premature ruining ot the goung remennti: he must entrust them to the most experienced men of the squadron. All will go well while both are ingarison. When the mpadron moves out to the great maneuvers the otticer most compre
tent for such duty must be left back in charge of the soman remonnand of the still younder horses that may arrive. It is a hard de mand on the squadron and get harder on the reximem, to hate th leare their most skillful lieutenants behind at the muly time when it is permitted, in time of peace, to show what one can do. Ind wer there is nothing else to be done. The horse is the fumbatmental cle ment of the eavalry the basis of its serviceability. Coless he is protected from the vent begiming. the cavaly will never he cunai to its tank.

In order that I may not be misunderstomi, I will at once at nounce what degree of finstretion it is nerewary that the gumer re mounts should reach. before undertaking the work of the soromb year. Those remount which. later ohe as instrocted horew, were consjhered the most enghring athd serviceable. were such as were re. ceived from depot in fuly, and at the em of danc or berimitne ot July of the following fear, were in about the thllowing wodtion in the course of instruction.

They moved matmatly at a mean. suatre trot: they cond in crease and diminish the cirche and chathere diretion: they carrien the rider. bridle and hater, naturally: they hat matam suth conti dence as to permit the rider to mount and di-momat, and to hat upon their backs; the worth mose off imdivitually. jump -man hurdles and ditehes, ampl in moving on the cirele at a walk allel men would bead their ueche to the insithe. The very mont that rat in accomplished, in alditipn to this. hy atamal instrution of and goune remonnts, withont injuring their wat and their bones. Wouli be, takine the short fallop from a trot, in the ridine hall. and the lous gallop upon a gratight track. It. during the periond ot whin we are spating, the ef wation of the gound remount is carried fur ther, say. to the "s souflem in." the "pasatre." the takines of the gallop trom the walk, and the simaltamenus movement it the whol.
 For the later serviceability of the howe it is of areat impertana. that the goung remounts shonld be gradually acerostomed to eover jng long distances at a frot on the straight track, mather hath to turi quickly, to halt or to partage. The long mantename ot the tent puiet-

* the horse and gives hin more contidence against halter and bridla Naturally this can le capried too far and through tow eneat exertion the horse may be injuged. Practice and experiene ate the ouls meays of leaming to tuin horses rationally.

The recruits come th the squadron much later than the remomar—early in November. In regard to the instruction in equitation ...
recruits. I have moriticism to make. so much attention has been devoted to this banch of the service by all thinking cavalrymen. and by men who thoroushly understand equitation, that. although we tind more or less difference in the resulte obtained ly various instructors. yet a thadamental defect never appars
[ have often remarked with moch surprise that in the instruction of receruts dismonated. the cavalry have not atailed themselves ot the improved methods which have produced such brilliant results in the infanter. The squadron chiefs and rerimental commandere correctly hold that marching dismounted does not hate the same importance fin cavalry as for infantry. But every whimer should have a military bearing. Many recruit come to the syuadroms sublly set up, and in much a newlected mental condition. that they are not greaty fantry havins only to deal with men. has aboped a method by
 ally. more erently and yet more quickly than he was umber the eartier sostem of harshness and drill. They hegin with ohoer les-
 be limen dress. Atter the recruit is made familiar with all his sur-
 which he at first ferls. and has hy pratioting the exerciow sermed a certain supplenco of timb and of bearines he is piven the heary unifiom and is cererem in it. This tases the care and patience of the inntructor fir the first forthight fion the imdividuality of each recruit mot beconsikered: but time hing the reward athl atter wath the prostess is more rapidand the hearing ot the men in much better and more continent than it was with the ohd ar-tem. when he
 to ansume the rexulation porition on the firs day and wav worred with the slow olep watil he hat campe in hi manclas.

It hat alway- beell a source of womber to me that the cavaly in. structor. who shows surprising pationce with the homen and erars ually teathes the beants how to une their limbe and how tw run. shows no patience in deating with the men. athe expert peasants. porters and cobblers to pertiom. an the tirst day. like drillew men who know how to math The exphantion is that the ravalry has not the time to fremd in sueh thorough instruetion. But there is an - economy of time in the conrac of instraction pursued by he infantry which attains its end more quickly. A horse may he injured by allowing his training thegress too rapilly so that it may be necensary at a later perided to sacritice much more time in repairing
the injury; and just as the more rapid progress is made in the edncation of the horses by going slowly but taking great pains. so is it in the physical education of theman: consideration of his individuality should be given the itst place and but little demanded of him in the beginning. It isfof the greatest importance. in the instruction of the caralry recruits, that time and strength be economized. The unfortunate recruft suffers terribly becaluse he is not in the habit of riding: the subjects of instruction are very munerons, experially since reconnoitering duty has as) increased in importance, and instruction in rifle practice has become necessary: amb every means of economizing time or diminishing labor is of the greatest value. To my great astonishment, there still appear in the dismonnted exercises of the cavalry regiments, a few nicetiew which the intantry resulations have cast aside long since as utterly useles. hecatise the $y$ simply worried the soldfers to no purpose.

As I lay the greates weight upon a thorongh. systematio and complete instruction of the cavalry dimmonted. I will here remark that I do not desire more in the entire instruction in tiont exereises tham is necessary to endile the cavalry to march. upon owcovion. with the fiot troops in a soldierly manner: for example in moine to church, and when it is hecessary. on parade. Nothing more thath this is necessary.

Another part of the ducation of the recruits is theoretical. The time devoted to this is pot ahwhes somployed as to most surely secure the desired result What i have to say on this shbject applies to the theoreticul course for each elas: recrnits, old men ath moncommissioned ofticers. fo is very comfortable to take upatext book and read it aloud and then ask guestions. here and there as is sen. erally done. It an insthuctor does otherwise. he changew the text book into questions and answers which are committed to memory hy the pupils. Then the upfortunate soldiers gise thedrwwemechanically, with much anxiet ${ }^{\text {b }}$, with their eves perpping out of their heads, and without the least thought: and I sympathize entirely with the soldier who. when askel what theoretical instruction meam. answered, "An instruction which is not practical." Only in exreptional caser have I foudd instruction which the men fully unterstonid. and in these casep it was based upon ocular demonstration. In the generality of casp this is quite possible.

As a preliminary lesson in reconnoitering and security service. I have seen the instructor take his men, as patrols, through the harracks. or through the nefghboring streets of the city. and they soon anderstood what a patron signifies and could reflect thon it. Such
squadrons am had heen instructed in this mamer. were most reliable in the recomositering and necurity service at the maneuvern of the next anmmer

Following the course of instruction, we next come to the inspection of the recruits in December. In regard to this, 1 make nownggestion: it is done vers rationally and it is desirable that nothing be chatuged.

In the month of february it is customary for the regimental commander to hold his suatte inspection. There is, very properly. a high degree of importance attached to this inspection. for the education and traingig of the horse on the smathe is altrays rital: and. much as 1 have admired Batcherts results in the direns. I have never beell able to believe in the correcthess of his system, aceording to which. the shatte is cast entirely aside and the curb used on the horse from the beginning. Leon this point every lerussian caralryman will arree with me. But finally our horsts are only used on the curb, athd riding with the snatte is maly a means to an eod and is taught only for that reason. I have therefore considered it Acsirable that the snatte inspection should not be postponed until the end of the period of instruction: and that it shond mot. like other insiections. be considered an the proof. test. and eriterion ot the capabititien o ${ }^{\text {ensetractors and pupils: lot that the regimental }}$ commamier concenthed might well make this inspection a fortnight or three wevk betiore the expiration of the time al which the horses were to be put under the courb. Then lie would be alle 10 assist the squatron chiet. athd instrutor. by his valuable and tried experience, as to how this or that horse should be treated. cta.. hefore it is put under the curb. It has been practically demonstrated that the date shoubd not be arbitrarily fixed upon which all the horses of designated chases. of the whole regiment, or of the whole squadron. siondit be put muler the eurb. It is andisable that mome horses should wear the shattle tor a week bonger. cte.. and the more perfect the education on the snatfle is. the more tractable nod flexible will the horse be under the curb.

Theretiore the sattle inspection should not make a detinite eon-- Huson of \#lle ellacational period in the monnted detachment concerned. but should rather serve as a means for contmolling the course of instruction. and of promptly setting the course in the proper direction when there is danger that it may go wrong.

I cannot leave the subject of the winter instruction in equitation without saying a word concerning the requirements of the new inmiructions. Which differ from those that have served our purpose for the last sixty years.

It appears that in many cases the old classitications have been changed; and that. instend of three classes, one of recruits and a first and a second class among the older men. the recruits now form the first class, and the older men, including the non-commis. sioned officers. are put in as single class, designated as the second class. Thereare many whig are inclined to hoid to the old and tried method, who fear that a backward step bas been made in the rasalry. I do not spare this far. An intelligent cavalyman will be better satistied with the , wew arrangement than with the old: and the instructions in equitation are written only for intelligent cavalrymen, that is to say for the instructors.

The introduction of the new instructions in equitation leares plenty of liberty to the sequadron chief. He can attach athy men of the second class, who during the tirst year of their service throush any cause whatever, have fallen behind their chass in finstruction. to the rearuit clase of the pest year. A wise squadron chief will ho, this with all the men of whom he has hitherto formed the seromb class: i. e., the poorest sect) of the older men. He will form one section more of recruits inf future than has been customary here. tofore.

In separating the ohdor then into two classen under the od -ristem. the sigualron chief was often troubled. When the equitation int his squailron had reached a vert fine state. to determine whom lic hoobld take into the second class aford whom. of the hetter rideres. he should leave a gear longer in the fret class. He got aroume the difticulty sometimes by avoiding the requiremente and by oreatiner a ${ }^{-1}$ hat detachment; he called it .. irest class." but the men hedonging wit were instructed in the secofflelass and were so prosented at insper. tion. They designated sudh at chase $\cdot$ tirst riding chass instructed with second class." Now the squadron chiel can have all his older men. excepting those detached with the recruis elases to rite in the second class; and cath daspify them in the secteral sections aneord. fore to the degree of perfeftion they may have attained: and the course of instruction may le carjeed in the seremal sertione to dift ferent degrees of proficienct. for the prescribed conser in cepuitatioll dones not designate anywhefe the exact degree of instruction which the second class must hati sibtained when it is inspected. The greater elasticity of the new instructions in equitation (in compari son with the old) permits the forming of sections in the now in. creased second class in wheh he can mount the best riders upon such horsess as still require training; and the less expert riders of the second classare given the best trained horses: the sections of
the clase are, in this was. placed uponan equal footing. Heretofore the sumatron has uswaty had nine riding sections without counting the remounts:* three wetions of the second class: one old remount, one mon-commiswioned officers and one privates s three sections of the first clac. abl one ot these often divided into two for instruction, the wors of which often preseluted aporer apparance than the recrais: and the wertione of recpuite. Vomer the new arrange-ment-. five of these nine sections will be in the secome class; one of the wh remonat amb four of the older men A. 13. C and D, arranged acombine whe the relative proticiener. Then there are four sections in the tirst clase. the first of which is compued of men of some serviee hut when are so behind in instruetion that her are put with the recruite tor further instruction. The alvantage it connection with the aew armarement are that the spadron chief will mot now. as formerly dosire to make the wors sertion of the tormer tirst clase
 will pay bat lithe attention and whose defertive performances at inspertinns will he made all the more glaring he comparison yrett the higher derere of proticieney ot the others: hut he now forms a section . A" of the seromd elaso of hiv worst broken horses and his most wept dibere in inder to brine up the eduation of the horsest and it will mow herome a puint of homor amons the men th behong to wetinn $\cdot \mathrm{A}$." The equitation of the whole squatron will be im. provel by this platl athl the suladron will ahtatin a certain hegree of "quilitrim. Cutarmity in the derree of instraction of the indi
 tione.

The new instructans in equitation anthorize the placine of non-
 find unicemal apporal and it is sery probable that mane repiments will make no use of this anthorization. I can orly announce my-

 ride with the oftiaers. "percially whet this only weme in the riding hall. The -pecial repuivite that the instructions in "puatation speeify
 proticieney in riding is that he hall prose- sutticenthtact and semse of proprety to precent him tom basting of his ability to ride bet. ter than this or that ofticer, and to prevent him from gossiping out-
 "ond rembunts" It this wannection designates
side concerning the crificisdotand censures he may have heard addressed to commissioned officers of the class by the instructor.

I am mach pleased with the concluding sentence of the preface to the new riding instructions which prescribes that the lessondegignated exclusively for the third class are under no circumstances, to be taught to the section collectively and as a unit. specially good rider is strobgly tempted to teach these more dititcult lessons to his whole class: and we used to sece a whone section vanlt to the side. reverse or fren passage at a shorienced trot, counter gallop. and cirange step at cpmmand.

In order to secure the efpected remounts, some. if not mont it the men, who did not have entirely tractable horses, would trive them such rude reminders that their sinews and jointe would be in the greatest danger and would be greatly tried without sutheient purpone.

The construction placed hpon the athove prohibition leaves suticient latitude to allow the forst expert riders. monnted umon the best trained horses. to practice these desortis alone and an individ. mals when exereving in the fiding hall: Thiswill have a teniluer. to increase their interest in quitation per se, aml ramot be whilly dinapprovel. But it does nof hate any direet military purpone and therefore it is best that it shduld ke contine to the minimmon. IIt

- counter movements are merylyevidenees of the command that the rider has over his hapse: ith themselves shey are unamaral mowe ments and are executed at the eost of the horses extrongh. Besidu. the best rilers monted uphne he best trained horse- have as hat heop. heretofore stated, ample opportunities during the indisiduat. - instruetion in the riding hall to practice these leosoms: athl. dion $\mathrm{l}_{4}$. praised. individual instructidn is conducted with opecial aares. "pu"
 submit to. lis will completelyfand under all cireumstancos. is alow in condition to rifle properly when exercising on masse.

I dare seen ather exercides. closely resembling rirell prorm. ances, waich might be authofized tuerely as at mean- what thit - There was a squadron in the division that I commanded in whith. the horves being plated somedistance apart, all the men otom up in their saddles and weit throngh the saber exereise. It this same squadron, all the men, remgunts and recruits excepted. mounterl and dimporanted on. the circle. the horses being at a gallop; then. with their horses at full speed, they lismounted chose to a marrier and . While the horses leaped the parrier. which wat quite low. the men remounted. . Finally, each seption of the equadron eame into line $\boldsymbol{o r}^{\prime}$
the conree the men ran away from the horses and then rushed back, "rawlins through mider the horses bellies, mounting from either side. ate. From this exercise, only the verially nervous horses were exepted. This had a special value. becauss sueh a thing is powible only when the horses have contidence in their riders. and it prove that the tromes have been treated kimbly and gently. This -quadin was in no way interior to the others in diverpline, nothing had then neglected amil 1 call ouly secenment it excreises as very ne:ful.

I-think I have entertained you suticiently with cavalry detaik. and that. with the interest now existing in the vavolye in the train. inge of the horges it is not necessary to say ally thing further; it is only nocerary w eall upon them for anything anil. they will most certainly exechte it theretore, it would be carreing coate to New. caste " for me to write instrations in equitation

 Ánom:

## Vinaning af Mradx

420. After the troopers paye beet well instruxted in the sebexl of the Trooper and in the manasement of have arms mounted, they will be mstructed toent and fhrust at heads and ring- in the ridine hali: The object is to sive condidence and precivion in the uace of the.
 and dintance.
 they are unaceustomed tgathon. the trompers -hond tim ride quatly around the posts at a walte then practice tirst at a walk, and thon
 or trightened.

Two pests five feet sid inthes high, and two poste two fixt in inches high: called $\cdot$ head ponts." and two ring ports are a-m. The ring posts are-male with a horizontal arm to extend ower the redter of the trackon which is suspended at ring tour inehes in diameter. in such manner that it cafo beasily carried away be the aber.

The followimg is the:usidal oricer for ruming at heals. but it should not be constantly adluped to. the poxitions of the func- heins changed at the discretion of the instructor.

The posts are placed one fard inside of the track atong the loner sides of the hall, a head post habout twenty yari, from earh enoner: on each is placed a leather formus head stufferd with hay. The ring post and a head on the ground near the track divide the space between the posts. A promer is poyted at each heal and prot to replace the head or ring.

The troopers are formed if two nearly equal squads. one at eath end of the hall as in Par. 394
'The troopers leave the raqks at a walk, raise pistol and take the trot, marching diagonally across the hall; eath takes the canter as he turns the corner, observing care to gallop true; each trooper on
turning the recond corner tires hi- pistol. loaded with a bank cart. ridge. at the first head post, and. continuing on the track. returns pistol, draws saber takes the position of guard, and when on the opposite side of the hall takes the heal. by suchecote and thrusts as directel by the instruetor and the ring be a tiore juint: having turned the comer atter taking the last had on that side. he leaves the track. atke the trot and walk. returns saber and forms on the opposite Hank of the rank. The command mext, is wiven as the tan pere on the track are ahout to take the head- with the saber.
fifter the trooper become skiltul in the use of their sabere to the right, the instructur ealues the werevee to be repeated to the leit: then with stimps crosed, and tinally with the horses lerere buek. He maty abo canse hurdles to be plated wh the track. one on each sile in phace of one of the heads, athl when the trompers are well instracted canses them in jumping to take a head an at tall jont placed ley the hurdle. The trooper will atw be exereined in run-
 girth a"fonte".id.
 followine perinte hoside othe manatement of the saber: That the horse gatlop trae that it entilus at the heal- the atat is kept elowe that.


 most be peritued out and corruded.

An exedlent exereme with salner monated mas be had he distributines a bumber of hather hearl about the hat The eoluman of


 the tronper re-tiom columa.

PHEPARATORY LFR-NS - FOE THE TROWP
421 In this instrution the trenpers are diviled into -quale or aroup of from seven tid eleven men to represent a - puad under the command of a non-eommissioned ofticer. preterally a corporal. This instruction has the same object but with greater force as the instruction of the squal in the selool of the soldier, and is aceomphished by nearly the same means. mo far as the same maty be applirable to the mounted drills. To further that object. it is-proper that the squad be composed of menf from the same "spuat." as provided in Par. 25!. A. R. 18:
422. An inteltigent thooper is placed on each flank and at th. center of the squad: when the guide is announced in the command. the man on the designated flank or the center conductathe mareh, but in no other respect pedforms the function of guide. This rule as general.

42:3. The depth of a horse is taken as three yath and his mimb in rank asone yard, which inclades his width and interval ins cieh. teen inches when at stand to horse. or six inches from knee to knew (or a light touch of stirrups) when mounted.

- 424. To form the squali, the corporal commands: Lesin ote amd places himself at the poing where the right of the squal is to be amid faces in the direction in which it is to face.
-At this command, the pen lead out and tom : on the left of the (corporal) in single rank from right to lett taking the powition of stand to haree with intervals of eighteon inches between the howes.

The instructor commanpls: 1. Count: ?. Forres.
At this command the froopers in a firm wiere commencing with the corporal, comit "one, "two." . three." .. tour." ant wo on to the left. The squad is then mounted.

The corporal moves wherever his presence is newessary. The tour to which he belongs phoves as if a complete fisur.

Aligmenents.
4シ5. The instructor commands: 1. Tiro trimpers frum the right (left or center) thre gardspo the fromt. M. Mabrit, :3. Sext. 4. Froxt.

At the command mard the first two troopers from the right exe cute eyes right, march three yards to the front and halt: the instructoraligns them, and then causes the remating troopers to mowe up successively at the conmand next.

At the command next, the tronper on the right of the rank extcutes eyes right and marghes to the front. each trooper slackening the gat as he arrices neefly abreast of the new alignment. which must never be passed, halfs an the line so that his horse shatl be square to the new front, ad that the line of hís eyes and that of his shoulders shall be in line with those of the men min his right.
426. The instructor if a few paces in tront of the sopad and facing it. to see that the prifiples of the aligmment are properly executed.: When the last trypor has arrived the instructor verities . the alignment by placing fimself two yards outside the right flank facing to the left, and ordens up or back, such men as may be in rear or advanee of the line.

At the command front cast their eyes to the fron
givell when the rank is aligned, the men This rule en general.

4:7. Inewine th the centere the bane tronper are entablished and execute tront: at the command no.et the truelrers next on the right and left of the center move to the frout and dress ase explained : thase on the right of the conter drew as it the aligement were to the hett and thene on the lef of the eenter a- it the aligmment were to the right. The insturtur veritien the aligmertit from either Hank

## R. $1 . .1$ rh...

4- A Ater every alignment, the intractor veritids the position of: wach trexper and it newewary correct- it

In the fira drill the banis of the alismbent is cotablished paratlef whe front of the sumad and atferward in obligue direetions.

The isntroben wherve in the aligmment: That earh tronger

 dreare promply ar arrive on the line: that he turns ehe head
 slighty the he:ast of the seromit trenper on hi- right: that he does
 val of six inehe fiom klew la knee ot wuches lixhtle the stirup of


 who ate bot doxisnated do biot move
te!. The troper havine learien twatign thematree man by

 Derse. : Fimost.

It the remmand dres, the entier sumat. exept the hase troopers.
 The inetrueter veritios the aligiment.
430. The alismment th the rear is exeented on the same prifuci-
 3. Frost.

 the basis of alismment and immediately drow the time.

The atienment toy rear is mot hathitually used
 the thank move to the point of rest. or without having the ranks paren his horse perpendicular to the requirent diection the a movement of the toreham or hammelast

In dressing. the first theo or three trompers are aceurately aligned as quickly as possible. in dricer to atford a bae tor the west of the squad. This rele is afoncrel. - :

$$
\text { Y } \quad \text { Th Wrerrh in Lime'. }
$$

432. Being in line. at halt. the insirutor commands: For ward. 2. Givide right (left op couter). 3. Marom.

At the cemmand moreh the mpard moves oft prompty the ernithe marching straight to the figont.

The instructor observe. in marcining in line: That the - fual marches straight to the froht at an evengait: that the trontro kerp their horses straight in the rank: that they matintain the interval of six inches from knee to knee toward the side of the gruide: that they vield to pressime frond hat side and rosist presiure from the opposite direction: that if too much closed towam the grade the: carry the bride hand frop that side and choce the leg on the side of the guide; that if the interval tee tow suat they carry the bridle hand toward the guide and close the leg on the "pposite side: that while habitually keeping the head to the fromt they ocea-mally glance toward the guile: if in adrance they rein in gradnally. if in rear. they gradually increat the gat until the alisument in resained.

The instructor will impers upon the men that the aliznment and
 ing the hopesestroight in the line af directi..". The interval whea lost should be regained as pathelt though the promere of the har as by the use of the reius.

To call attention to the pes of aligument or interval the in-tratob


433. Whenever the suand is in motion it may be haltent: it is



> Toplaireh Bintiram.
434. Beins in litre. a halt. the instritery commanth: 1 Backerard, 2. Gilide right (herit or cemter), B. Marcis.

At the command macif all the troopers rein lack. drositien the guide.

After marching a short distance the mocement is terminated.
Being in Line to Oblique.
435. The instructor dommands: 1 . Right (ow lith, whif". ?

At the command merch. each tropere executes a turn of thity deares. We the risht. whict bringe his horses heat nplowite the shoulder of the horsc on his right. The spuad moves in the new diryction, drewing to the right. in a line paralled to the origimat direction.

To rewme the direct march. the instractor commands: 1. Firmorl. : Marem.

It this command, the t porpers make an whlighe tarn to the left and march otraisht ent front. resulating by the guide.

While obliquing. the movement may be arrested for the purpose of correcting tatult ley the command: 1. Squed. : Mal.t.

The oblique marili is remumed be the commands: 1. Oblique, $\because$ Marif.

## THANINGS.

## Ti, Turı atud Halt.

t:ni. Marching in line. the instructor commands: 1. Spute raghe we left.. 2. March. 3. Frost.

The first command is given when the sumat in three sated from the turning print.
 the trouper out the right. Who is the pivet thens his horse ninety desrex to the riarh on ath are with a ralius of two yavos and hates: the other trepere turn their homes thirty deareo. io the rixht, as in the obligue alld moving by the shorest line. withont chatinge the
 ment conalifinul hey the pivet man: all dreas to the pivot without command. The lat power having arrived on the new lime, the in. Henctor veritios the alienment from the pivet Hank.

If at a hatr. the movernent in exeented on the same prineiplem.



> To Turur duil Adence.

4:3. Marchine in line at a walk, the instractor anmmands: 1.

 the turning print.

It the command mation wen the imtant the -qual is worn, the tropper on the risht turns his horse nimety degrees to the right on at are with a ralius of wo yards and moves formard in the new direction withiot ohming the callence of the mareh: the other troopers turn their horses thirty degrees to the right. as in the nhlique, and moving at a trot hy the shortest line sucessively place them-
selves on the new line. fhen they resume the gait of the pivot trooper and dress on him.

If the guide was on the tank oppquite the pirot betore the turn. the instractor announcers the guide on that flank when all the troopers have arrived on the line.

If marching at a trot. the pivot trooper continnes at a trot: all the others nove at a gallop

If marching at a gallop, the pirot takes the canter: all the othor tronpers continue the galldp. each taking the canter on arriving in line; as soon as all the troders have arrived on the line the instrue-


Right (or lift) helf-turnfis executed on the same primeiples: the picot trooper makes a half turn to the risht.

> To March by the Flank in Column if fimis

43s. Being in line the finstrutor commanls: 1. Fi, ere right, in left). D. March.

At the command maret, the fours wheel $90^{\circ}$ to the right: the pivot troopery eradually then their horses on the fore teet. Without advancing. reining back orpassaging to the right or left. :" contion to the movement of the marching Hank. which marchers on an are of a circle whose raline is qual th the tront of the tour: eath pivet, trooper closes his right leg to insure the closing of his tromer hannehes toward the marching flank. Each tronper dresses toward the marching flank. more in conformity with it, and kerp the interval from the pivot. The whed being comphetel the townew move straight torwatd in fhe new direction. drewing th the side of the marehing thank, and preserving the distance of tiour feet from head to crong. The eruide of the lealing tour is the ervile of the. column.

In whecling by fours. of the about the forward mareh is taken up on completion of the forement unkes the commatiml hat he given. This rulidis yenerol.
439. To change the gulde. the instructor commands: 1. (i,nid. right (or leit).
440. The eolumn of feinex being at a halt. tis pint it inareh. the instructor commands: 1. Forcard. $\because$. Guide right in lift . : ib March.
441. The troopers will be perfected in the whed by fours. be bhe commands: 1. Fours in frole right (or left) whet. ㄹ. Marn. : Squad, 4. Male.

The fone whed so as to form column, or unite in line simultaneously. rerulating by the marching flank of the four at the head of the columb. -

The commath hat is eiven as the fours form column we unte in lise.

The instructur observe that the tronpers on the inarching flank presere the anitorm that. that each piver tarme in his place and keep his horses hamehes closed towat the marehing thank so as not to interfere with the marehing flank of the adjoining four.

> Buing in Column of Fourse to Chenal Dirertion.

44: Being in mareh, the instriktor command: 1. Culnm, right or left . $\because$ Marcll.

At the combinam marth the leading tione wherls the right on a movalle piont. The other form move tiowad and wheel on the same seround as the tirat.

 man preverves the oripital sat. the ment toward the marehing fatuk incroase the sait athlall resume the oriqual sait upon completion of the chanse of diredion.

To pht the columu of fums in mareh ami chance direetion at the same time. the instructor commands: 1. Fi,

 in the right or trit 1 .

Beang in line the intructor may commame: 1. Finer rimht on


H:3. The instructor commands: 1. Fi, irs lat far right, ,hout. ㄹ. Manell. 3. (i, idid (right or left).


 mardhes forwath.

4t. The instructor commands: 1. Ki,ghe or heti, format.e. Fours right or left , 3. Marem.

It the command mawh the right tome marehes straight to the tront drewing to the left ; the other foure wheel th the right on tixed pivots: the second four. when its wheel is twothimis completed,
wheels to the left ond modable pivot and follows the tiret fuur: the other fours having wheelef to the right. mareh forward and wheet to the left on morable pirpts on the same ground as the second tour.
Being in Column of Fours. to Obriane.
445. The instructor 4ompynds: 1. Right or left) ohlifit. 2. March.
 cute individually a hatf then to the right. and then march at an angle of forty-five degree to the original direction.

The front of the fours fremains parallel to the original fromt.
In whliquing the guide is on the side toward whith the whigue is made. This rule is generak.

In column of fours ifos or troopers. the angle of obliguity i-forty-tive legrees.

To resume the direct idarch. the instructor commands: 1. Fi, warl. M. March.

At the command mareh, earh trooner executer individually a halt turn to the left, closes to fad dressen on the tromper cward whom he dressed hefore the oblique commenced.

Being in Column of Fomer. to Furm Line th the Right ar Left
446. The instructor kommands: 1. Fown riath or bift...2.


The thars whed and hat or move forward acording to command. The command hatt, or difection of the gate is siven as the time unite in line.

Beinty in Cuhamn of Follors, to Form on Right or Lefit int,. Lio..
47. The instructor fommamis: 1. On right or lift, i"t line. 2. Marcil. B. Squad, 4. Dadit. i. Front.

It the command mareth the leading four whents to the risht wit movable pitot and marches forward in the new direction. hrowing to the right; at the command halt, given when the leading tiour has adrancell thirty yards in the new direction. it hatts and drewerntine right; each of the other fours marches four yard beyond the wheel. ing point of the next preceding four. Wheels to the right. morer to the new aligment, halds and dresses ase explatimed for the leadines four.

If marching at a trot. br at a welk and the command be trut. the instructor commands: Guide right. immediately after the command march; the leading four wheels at a trot, and upon the completion of the wheel takes the walk; the ether fours move at a trot eath taking the walk upon arr ving abreant of the leading four abd arow to that side.

It marehing at a gallop. or at a trot. and the command he gallop. the same prineiple applies, he hading tour wheds at a gallop and then take- the trot: the wher fours exeente the movement at a gallop and take the fot uron arriving abreast the leading four.

In mosement where it is preseribed that the leading four or subdivision move thirty yade to the tront and is then hated, the leating frur or sublivision may he hatted at a le-s diatance when neowary The rewle is gemorel.
 command- bett. only that pretion of the apand hatto which has compheted the movement.



 front. Arosine w the left: the mher tome ohtigue th the right: cach ther. Whell "pponte there in line marehere the dront.
 thity ratels, it hatt- athe dresere th the left: carh of the other four- halt-a little short of the lime und dre..... Whe bett.
 invtrutor commanh: Ginfe lef. immediately atter the command

 atheran of the learlines tome.




 command hit is sivell as the fisur whte in lime
Biong in Liore t." Mrimet the the Rert.


Brin,! in ci,hm" ar Fo,ucs. t, Form Column of Tiras.
 Mareh. B. Gimide (right or left )

At the command march the right iwo bering Nise 1 and th of the

and 4 of the leading four, keep their horses straight until their horses heads are passed by the croups of the homses of the right two. when they oblique to the right phace themselves in column behipd and follow the leadipge two at a distance of four teet. The other fours break in the same manner as soon as the left two of the preceding four commencest to obligute.

Sos. 3 and 4 always follow in rear of Nos. 1 and 2 no matter on Which side the gruide mat be. whether the risht or lett be in front.

If marching at a malle the risht two of the leading four continues the walk; the other troopqes halt at the command mareh and then execute the movement an kefore.

If marching at a trot, of at arkis and the command be trot. the right two of the leadinge fifur moves at the trot. the left two it the learling four moves at a whlk till disengagent, whol it whinger at a trot; the other fours mose at a walk. athl breat varowisely at a trot.
 the same principles apple the fours movins at at tore and brakine successively at a grallop.

Which is executed accopdins to the priniphen explaterl in Par. 451: So. 1 of the leating four moves forwath ath is followed -are
 from head to croup. Whein No. + commenoo to ohligter Nol 1 ot


Column of troopers trom column of twos is formen in a dimitar manner, So. 1 leading the folumm.

 mamls: 1. Furm four.. Marcin.

At the command merrof Nos. 1 and 2 ot the leadine thar marm three yards (one horses (qugth) to the front and hatt: No. : atrd $t$ of the leading four. obligpe to the lett until mevepred. then matrel to the front and halt when abreast of Nos. 1 and 2 : the other twor march forward and form fifne successively an explained tor the tion four, Nos. 3 angl + gf each frome commence the obligue the thent when Nos. 1 and $\cong$ areat three yards from their position.

It marching at a trot, of at a culk and the command be trot. the leading two; Nos. 1 and $\because$. moves at a walk, the rear two. No. is andt.

of the leading tone oblignes to the left at a trot. and takes the walk upon arrivins abreat of the leading two: the wher two move at a trot the thurs suceessively torming hat taking the walk as the leading two dowe umon the preceding four. The instructor commands: riaile right or left

It marchitus at a gellip. or at a frot and the command be gallop. the -ame prineiples apply the leading two howine at a trot.
 Marif.

The movement is cereuted on the atme primeiphe as in tormingr finteron columb of twos.
Mormente i", ralum, "t Tirus.
 mathe by the -ame command and meane an a collanion of fours.



It the column of tenpers or twon le marehed the theare and the









 they have adaned thirty gard. the other tower-mene forward

 trupper hatt and alien themelve.

It matrelime at a trof. or at a rofl: and the emmanald be tert. the hadine twor troper wheols th the dett and thentakex the walk; the other two. or tewers move at a trot taking the watk when ahreat at the risht iwo we troper the instrutor commands: 3


 the trot.
4.5. On the right or hiff. The instructor commamb: 1. On right (or left) into line, ㄹ. Makelin.

The movement is exechted acording to the same prineiples an when in column of fours.
459. To the front. The instructor commands: 1. Right ior left)


The nowement is execputed aceording to the same principles as when in column of fours.

Atter forming line from cobmon of twos or trooprss if the mumbers of the troopers be not in their proper sequence in the sets of fimur. the matructor may canse fle spuad to comat fours: but this is mot necessary unless the suad/is to be maneusered by thurs. Thi- pro. vision is made to satse inconvenience when forming line for dismissal, or for exercises in whith the fours are not considerent.
Being in Line. to Form Col,m,n ot Tros.

460!. B! the Hith: Betine at a halt, the instructer commands: 1. By twos, ‥ By the righor|tank. 3. Marcin.

It the command marrof the right two wheds to the right on a movable pisot and marches forward in the new direction: the wher twos sucessiyely wheel to the right in time to follow the precerting two at a distance of four fet.

If marching, all halt ak the command mareh. except the right two.
+6i1. Ti, the fromt. Befing at ahalt, the instractor commatmls: 1. Right (or left) by tures. 2. Marcit.

At the command merrel the right two mareher straight th the front: the second two obigues to the right when the eroups of the horses of the first two ardoppente the heade of their horses and follow the leading two at distance of four feet: a a bh of the where twos successively wheel the right an at mosable pirot mose for-
 preceding two at a distanct of tiour feet.

Being in Coblimen of Fiours to Disme,
tio. Being at a halt or marching, the instructor commands: 1. Prfepreto dismofet. Dismotest.

At the first command, Xos. 1 and $\underline{\underline{2}}$ obligue to the right amd Sor. 3 and 4 oblique to the left, ald halt : the troopers oblique only win fas to allow room to dismount without interfering with each other: Nos. 1 and 4 oblique a little mopre than Nos. 2 and 3 .

The column of twos is dismonnted according to the same principles.

## 

46i3. At the commamis fratard, moriti. cither betore or after monnting. the column moves forwarl the troopere closing toward the center.

THE: Cllakge.
46. The darese is the decisive and most important and characterintie cavalry mocement.

In the nature of things it is getnemally experted of catalry and is its pride. fo be bold athl daringe Cavalry that stope to count the enemy, or contents itself with sending out a skimish lime often bomes a very great opportanity. $A$ sulden and hod charge which surprises the come is not only -acoesfal. hat the loss is small in propurtian th its success.

The main conditions for suceses are whesion, rapiditys surprise. and impetuosity and viger in the shoek. To insure thene cimditions it in conemtial:

Ferst-That the hereman shobld have complete control wer the hores.
sion, - That the harse itself shomble theroughty trained.
Third-That the womper be tatught wide stratigt to the front.
Fe, arthe- That the gat he uniform as to time to secure whesion. athd proper dressins.
$f^{\text {bith }}$ - That the horses shonh not arrive at the chargine print in a hlown or distressed comdition.

Thee suan is tirst drifled to mareh wer lone dintances at the trot and galloge the instructor giving percial attention th the order and alignment and mitormity of gat. It newenery the tropors may be reguivel to take reins in hath hathe.

If the ground will admit of it, the advanee th the charge shond


Itatitatlly the charse will mot he xiven more thatl wice the same das.

The charge is alway followed ing a tew monements in close order. executed with the greatent previnom.
Ti, Chargr
this. The spuativ formed in line with athers drawn at one ex. tremity of the selected grombl. Which, in the first drills, should be. free from , whetclew of ally kind.

The otfere sumervising the instruction goes th the farther extremity of the ground to wherve the drill, signale to the instructor. who takes prot as leader in from of the center of the nquad and commame or signals:

[^12]The suide follows diredtly in the trace of the instructor at a dixtance of two yards; after fadvancing about ten yards. the instructor commands: 1. Srot. …Arch : and when about 401 to 600 yards from the officer supervising the drill, the instruetor commands: 1 . Gallop, 2. March: the squad is conducted orer the remaining dis. tance at a gradually increaking gallop: when about fifty to seventy. tive yards from the otficer, the instructor commands:

## Cilarge

It this command all dre troplers raise saber and the speed is increased to that of the flower horses: when mear the officer. the instritictor commands: 1 Trot. $\because$. Marcli: the -qual ravimes carry saber and takes the brot: after advancing betweon twenty and


thiti. To acenstom the troopers to form on their leader. atter the disorders which follow at attack. the instruetor commanh: 1. Brecth Rimh: M. Marcu.

At the command maref. the tropere leave the mank in diworke.


Dter a few minutes the instructor commands or signals: Rabis At this command, the trooper rally in rear of the instru-tor without retereme to their brier before breakine rank. Andine whe front. of in the same direetion as the instructor. The rally will hat bitmally be to the front. buk may lee to either Mathe.
+6\%. If. during the diforder. the instructor commands: 1. Fi, the rear. 2. Marcin. all the tronpers march to the rearat the sallyp. the instructor leading: the troopers do mot dexe to the reeralat in. tersals: at the command Rasis. the instratore facen th the forme. and the suad rallies on the instructor tated to the frome

> To Churige as Furiters.
 sards betwen troopers.
 shaken or broken torces of any arm. It choice be permitiod avatry stoould charge infantry up diall (not steep) or atrains its right hank.

The squad advancing io line. at the trot, with saber- drawn. the illstructor commands: 1. Ax fina!eres. M. Marm.

At command matrh. the center trowner advanees at the trot. all the other troopers obliquegto the right and lett at the sallop. eath marehing to the tront as soon as he has gained his interval of three sards from the trooper next toward the center. takes the trot. drew
 ing on the leader and the charge is combucten her the same commamis
and means as hefore. At the command charge. the troopers mo bonger preserve their pesition in the rank. but the tronpers in enens charer the enemy and bear direetly down upon him at till epeed. It darine the atrame as forarers. the e.ommand relly be siven, the

ti: The charse with pintels is conducted in the same mamer as when sabers are drawn. except that the leater taker his place om ene thank or in rear of the mual. hetore commanding rame piatol. which he does before tivine the command chatere The tromers de bote commenter firing until atter the comband rharge . The pintol as a chatrinte weapon will habitually he contined to the charge a-



 actualtrivel him.

 other and inore ditto alt grount and there repuivel to exerate the

 vision of the oftieer. who determines in eath rase whe her the charge


 melee. h, it or ratly, accordinis th hiv hetermination.

The otticer supervising the drill shall ber grided in his determination an the the saces. tailare cte. of the eharere and the sureeding movement. hey the manner in which the eharge has herel com-

 ments.ete.

When the chemy is reforented athl ther chatere is made as finagers the tropper pace eath other the the right themel the intervals of the "plosing lime.

When the chemy is repreated in clowe order. the "plowing
 or. to mareh by the fatrk.
tie. Ather the qual ha- heen well instrumed in the chatge the introntor will weacionally devignate men th tall gut during the ad-
vance and the charge, to represent men disabled in action: such men will follow at some distance and rejoin upon wirnal from the instructor.
Lerfding the Sifuced.
473. In the exerciser in lealing in either abse or extemden order, the movements are asented at a signal from the instructor and as far as possible withont commands or calutions. The object is to prepare the squad for hat le exercise by traning the men to cownerate with their leader and foreontorm instantly to hiv wiohes

4it. The morements art to be exeroted in the most direet manmer. at first at a walk. then at a trot and tinally at atgollop: the movements should not suceded eath other so rapidly as th prodnce. coufusion.
455. The corporal is posted twa yard in tront of the spuall. which conforming to his sigrtals and movements. marches or facou in the direction he indicates.
476. The sulual is exertived in marching to the tromt, w the rear, by the flank and in oblquing turning halting aswombing ant rallying.
tit. Habitually the troper in the center is the suide of the squad. he tollows in the tractiot the leader at adistance of two yardIt the corporal places himself in front of a trooper on either thank the troopers dress to that Hapk on commanil.
tis. When the corporal kloes not wish the gathe to fellow him he commands: Gi, eide right (heft or conter, and indicate- the point of
 the direction: as instructor he may then ge where hio prestare is necessary.
+79. When the squad in phateded the rear, the corpmal moser quickly around the fank or through the line and takes his plare in front.
480. In order to maintain the habit of orter and diveipline every exercise in leading wild be tolloneel ly some movemente in which the greatest precision if required. This oule is !furemb.

- sahea shinals.

481. The object may be to conceat the presence of the force, or to aroid attracting the attention of the enemy to the fact that a movement is to be executed; rerbal commands should then be given in a low tone of voice, only lbud enough to reach the men in the immediate vicinity.

The following saber signeld are nsed by the instructor without or
in conjunction with the verbal commands or trumper calls: or a whistle call may be usedter the the atteation
 the fuath trom the peparatory signal. is lhe signal of exerntion

A-hure as the instructor has his sather at gurerl, after attention has been commandefor signated. the altemion is kept fixed on the instructor: the return to sury in an indiation that motiurther sig nals are th he made until attention is aratin signaled or commanded

Affention. Raise the arm vertically to it- tull extent. the bate in probusation of the arm and dereribe omall horizontal cireles with the point of the sather:

## The Prepuratory sum,

Fintart. The firet and secomd motions of front cat
Righte, ,lizue. Extemd he arm and saber ohliguels to the right until looth are horizontal.

Lett ,r,hi,fir, same to the lett
 the rieftrentil lurthare lurizantal.

In the torwate whifue and tank marehes the instruetor as nown
 tion the - -gath i - tw take
 horizental. ihe saber peintine towam the marehine flank: carry the arm athd ahow horizatally th the font at the same time turn the horse in the direction to be taken.
 rear foint and turn the lanse alnut in the diretion the finu are to wherel.
 der. hate vetieal: mand amblower the hathe keping the hade ver tical: whe repatad areral thmes

 derstond the pasming from a walk wa trot, or trom a trot to a gallop and the revere. In changes of gat. the instructor uron making the preparatore signal, canses hi- home to take the gait ordered.

Hatt. Raine the arm vertically to it full extert. He hade in prolongation of the arma.

Right frout intuline. Execute risht monlinet.
Loft jrent intoline. Execute left moulinet.

Rally. Extend the arne vertically and rapinly wirde the sather horizontally around the hame.

To fight on toot. Execule rear moulinet.
Action right front. Exequate right monlinet.
Action left front. Fxecole left monlinet.
A,tion right. Execute nght point.
Artion left. Fixecute leth point.
When necessary, these fismal- may be made with the carbine or bead-dress held in the hand, or with the hat whly
482. Extended order ander a line of hathe litthe atherten by ar. tillery fire, very elastic if its movements alld which allows the greatest fredom for indichetual ation. In a wooded combers. it is used for ascertaining the afsemece of. or discoverinus and watthint the enemy and if opportunfty offers of attacking him amb compelling his deplogment thus gefining time for disposition of the tropwhose movements the skirnishers ate sereving

When skirmishers ate thrown out to elear the way and sere.en the morements of the matin hong. their movement- are rewnlated hy those of the troons to be copered.

Mrunted viarmishers aré principally used to chate or bat ul wooded or broken healities in roncorinus suphly trains and in Par. tizan or Indian warfare.

> Prinelphes of Ine rention.
453. - The medhanism of the movement. will be tansht minde drill ground with every attention to detail: atterward the mow. ments are exewted on varied ground where the tratinine is extemberl and pertected by taking adrantage of wow and whervins the circommsataces of hattle.
tat. The exercises shopldgive the tronger the rorrert impren sion of his duties in hattle proper entmate of the impertanne it extended order, and of the distipline and conduct to he shervent. If this instraction is careting carried out the trowne will be fully prepared to at his part in the batte formation of the toopp.
+65. In this, as in all instruction in extemied oreler. the mowe ments must be made with rderence to an enemy. (Par. tion. Sim. less marching about and frepuent changes of direction mot only confuse the trooper, but inculeate ideas absolately falue and pernicions. - 486. The squad is extdinled finmard, when it is in rear of the line to be occupied: by the thant. when it is alrealy on that line.
 ber the Hathk at the wot.
ta: The mormal intoral betwen mombed remper when ex

 mand march.







 worl it anmmathl the tirat bete of the trangere or the time motion
 pletion it the command trumper ath on -ixmal

 "Helly






T, Estmlt, ther Font.



 staight wh the tront or in the direction indiated by the copporal; the ather trexpers ohluge to the right at the sallope wath reaming the direetinn and wait of the lett tronper when he ha- his inter-


The tropers mate the right incrane the athste it obliquity to mure that fierty-fice derres.

The whad having arrived at the place where it is totake position. the corporal commamis. 1. Sigurd. … H.a.t.
495. To extend forward on the center skirmisher. the instruetor designates the center troopar and commands

1. As skirmixhers. 2. Right aml left fromt intoline. 3. Maken.

The center whimisherfinots straight to the tront: the wher skirmishers oblique to the dight and left at agallop.
496. Being in column dé fars. todeplog firward. the inatraetor commants:
 Executed as in Par. $4!4$.

To Eatemel by the Flathi.
497. a Being in line. the instructor commanis: 1. A. shimishers. 2. Fours right (ov left). 3. Frot. 4. March.

At the command marihthe formes wheel the right and mover at the trot: mpon the completion of the wherel. No. 4 ot the rear finde turns to the left and halts; No. 3 of that fone turns the the left and halts so as to be abreast on and tive vards to the righe of So. $t$ thẹ No. - and then No. 1. then No. of the now rear tour. and ${ }^{-1}$

 the tronper next on his lett.

The extension by the lett Hank is exerated in the atme matmer except that No. 1 of the right time turn- fothe right :ant hatta: No


t!s. To make theorigitial extersion of deployment lo a ertater or less interval than tive yabls. the instruetor alds on the tir-t romb


Tu Incruastrenel Dimimish Interrals




The troopers open fromfor elose toward the kuide acoording as the interval is to be increqued or diminished. It marehiner. the morement is executed ly a doliquing and increasing the fait: it at the balt, the movement is exiecuted by the fiank.

## The Rally.

50n). The rally implies the idea of immediate danger and is tion the purpose of meeting the enemy bya counter attack. 'lin' instructor commands or signals

Rally.

The tronper retam arlime move at a sallop and fom quick! faced to the front. in rear of the instructor, withot refereme to their previont-order in the rank. and drat aber.


## Th Assimbly.

 wishes to retirm it in the normal ubluse neder. he commands: 1.


At this commathl the men form in their proper planes if de


He may direct the -qual in asemble in whan ot formes.
Ascembliner when faced or marehine w har rear hoine impons be in hattle, will wht be weoted

The instructor may ablee the acombly and rally whe exeented

 sair.


 ine the interval from the side towat the Enide. Paty tia. tio.



 f:aco himalt quiakle in tront of the Enid.
 whit, Matil.


 tinlows the tropher in his tront keoping the divtathe. The apporal places himselt quickly by the side of the hading tropper to comblat him. or sive the leadine tomper the pint of dimetion.

To march :arain in lime the intratom commandr: I. By the righte or lift, fomb. ㄹ. Manem.

5un. The -kirmishers marchine be the Hank. to whanse diree-
 or. C,ilimn half right or left . : Marell
 instructor commands:




Eveeuted on the same principhes as when in efore welere the skirmishers movine direct to their places takinte interval- on the new line from the pivot and contormine to the same trant midien tion of mareh. In this manere ang diretion may lex ex men. the
 the bew firnt.
sut. The sumad in extended order. beeme in mareh to the tront
 Malt.

The trooper hath taced do the tront.
extind ises in tenmon.
 are exeruted by signals. lan tal.
 vionsly explatimed.
 contined to the fillowing conditions:



 enemy. by compelling him on alvance mone callion-ly.



A mounted skirmisher halted and expesed to tire without onver or
 figure satomel hiv port as aconter.
Turnarat.
 skirmisher returns pistol or carhine draws sabere and the whole lite. charges ats foragers. Par. Ho

## TO dismo (nt the skirminhers.

51\%. The mounted skifmishers may be diemounted tu tisht ant foot, the skirmishers retaingig their horses on the line
 may frequenty beor in lartizan and Indian wartare and in guarding comons. equecially in woded and rery hroken logalitics and




 as in the patratre of a detile or obtatale.
 walls. cte.. we shelter the homers.




 minher th take hin hame with him

 tenel th the hater.









 the purp"an of ladine hi- home


 the latiat in the wity mount, ald eroure the latiat to the sadtle.

B1t. It: white the skimiahere are di-mbunted. the inatrutar

 then asembled at a dexignated plate.
515. Cavalry may be fismonted to fight on tiont ander the for lowing conditions:

1. In an enclosed, wooded or rough, broken comutry that cammot be turned, where mounted aetion is impraticable. e. if...small villate. $\int$ buildings. hedges, detiles. hridges tords. ette. dither otternively or defensively.
$\because$. When an obstacle, such as a beridge or ford interveners there rent the enemys rapid putpuit and presents an opportunity ot de. laying or keeping him in cloek be the use of atew li-mmuted men.
2. To wecupe distant and impertant prints and hold them against the enemy until the arrival of the intantry.
3. To, occupy positions held be intantry. to permit the with-
 be still occupied in force.
 deploge thas gaining time.
 dismounted line as a protertenl sithation will athow: they are not - hanged while this comdition lasts, unlew the dismomted lime makes a material change of positipn.
 be the horse hodder when op diected be the instructor, which must always be done before giving the command t. fithton fi.,.t: the two tronpers next on the risht and heft of the hevishated holder pase their reins to, him, which hee holls in his risht hatw kerping the horses on his right and left.

In the alowence of the link. the homes maty lee tastemed terather by passing the reins through the head hatuer ring and triner them in a slip knot so that the horses heaks shall be about two teet apart.

In defensive positions ald the horese of the sy, ind man lae linked

 reins.
 in column of tours. This quhe is ar moral.

519. To the front. The instru-tom commands: 1. Ta figilt os foot, a. Action inft (or hight) prost.

At the first command. all the troopers open our as in prepare to dismount. in Par. tio. and Nos. $1 . \geq$ and 3 dinmount: Xir. 3 pansex
his reins over his horses head. thees abwut. gives them to No. t. who hold, them at ench henerlithat he can hert control the horse: No. $t$ nowe moses his hores shoublers totherisht to araighen him in the
 the hather ring of No. 3 horse with the right hatul pall. the horeses heal inway and with the left hathl hack up. chysuge the smap


At the second command the diamomoted trongere of the leading fime unstine cathine and timm litu in their momal ander ten yards (1) the fiont of the colnmo: vach ot the other four- tiom lime in their memal wrder abrant the croulnot the horeor in frens of theme.







 risch
 the coltum is tire wheded atmut lix time


 homenare linkent





 the - ${ }^{n}$ nad may then be mounted.

The tronper unlink and momm.
 the tronper

: $2=$. The syabl, now in threes. executes movernents ty the same commands amb :urording to the same principles as when in
fours. The individuals of dath set will habithatly kerp within -up. porting distance of each other.

The deployments and morements in extemberl irder diannanted. are made by the sane compands and prineiphes as when monated. except that the normal interval betwern the men in tor , mots

If the sumat is to kneel for lie down upon hattine the c...rpural designates the position berione extemines : hiv proition will le taken
 remains stamdins.

On taking up the march the carhine without command in aurrind on either shombler, mazale devated. or at the trail: "II drill the in. structor may preweribe the proition at which the piow is to low carried.
fike: matidiont:
 to accomplish ang succo-the result. they mont work tusether hey




 the invariable obervalle of the fillowing

## Gimeral liwh .

 ment of tiring.
 of cartridges indicated.


 of nos value.


 the smoke it he is hidelen trem view.
 scouts, patrols or vededtes. (d tire when nevessary:

First, to give the abarm.
 the enemy.

Thirl, in case of a surpride or in welf detione.




:an' yar-le at a man kumeline
tin' yard- at : mat ctamtine
4."リ: var小 at a horomatl.












 athl lixht untatorable.












## firis.o.


 EAS The -



or lies down if so specified fin the commaml. Par. ize. The rapid fire will never be executed king down.
333. Volleys may be usud when the front is not tor extended to be controlled by worls of command the same commands amd meathare employed as in close order.

53s. To fire at "ill the forpmal (mmmands: 1 Fife at ,rill.?. At (such an whiect), :3. At
 Par. 505. and load.

At the tourth command those skirmishers omly who ean din tinctly see the chemy, aim deliberately tive had and continue the firing until the command ceate firing.

The coporal may permid a tew men only. watly the hent hots. th tire : fior this purpene he alhs the men by hame and then siven the same commands as before: the intensity of the tive eath be incteased or diminished bey farying the number of men to fire
533. To execute the fire fex atiomeners the corpurat commands


 Par. inem. and haul.

Each man ather firing the number of cartmines indinate.n. wat. cutes ceatse tiring.
 or rhabe, mocsis; the inspructor will see that the number of caltridges denignated is neverexceedent.

The fire as akirmishers lifines form the fire at arill in that it limets the number of shots to be ticed to ant more that three

5ill. In the rapid fire the number of cartrilges is not bimited. the objective is not indieateof: when used adrancine to the attack
 3. commente firinio.

At the third command, the men open fire, amines ataisht w the front at the fee of the enemy, hat and continne the firine until the command or signal. cease tiripg.

> INSTRICTIO IN VARIEI CRHING
> Principhes of Instructime.

5+1. The instruction wifl at first be individat: while the in structor is occupied with one man, the others will listen and wherre in order to be able to execule in their turn what hav been explained. The movements will atherwal be executed be the entire suad
542. This instruction is directed liy the tromp ofticers: it is on ground which hat heen previously celented with reterence to the movements to be exeruted The lonation shond tre frequently changen in order to aceustom the mentome situationt. and care will be taken never tor order a movement at varatoe with the aceidents
 of the sromat



 mon names for the leatille tiature of the -artace and all that com-









## $1 \because$ er Cor,



 new puntion tor cavaly in it proper phere of antien.

 cover and intrenchments are of ocondary impertance, and that any


 from the sight and fire of the chelly and white permithing a gread


its. In orter to make the beat powithe bee at covere and at same time obtain a rout tor the abbime. therebe exponing the beant part in the bury white aming the intrintore explains the following methouls:

To take peot preterably hehind the right extremity of a wall. rock, heal of stone or carth: in the window- and dowrways of
houses on the left side of the strett: behind a tree. to rest the earbine on a limb to the right or rest the forearm atrailnet the risht site of the trunk.

Behind embankments if earth. in ditehere and furrow- te kimet or lie down and rise slighty to tive: 10 lic down in rear it a cract or the edge of a platean. enposing one's mett an little as powible. but alway keeping the shope tprand the cuemer in view.

At the edge of a wool. Noben there is in liteh mor bathe of eath to remain a little batk from the enfare amber eover of the tive trow.
 have a good view of the grombl in fomb.

The instructor explaing hew to prepate the cerat of a wall and
 high to tire over.




 the instructor makes erortotions and "xplatation- athl amocr the
 by the mernits
 at points indicatod he the instructore athe ab hateel that when all
 dexignated print. not more that lath yark distant.

 have the best rests tor their tambines. have all umobermeded view of the objeretive and have setftheip sights at the range indieated. The
 sombled and a new lowalit. selected.

 the skirmishers: the latter will earetally where her mosemente of
 the sight to asree with dee distance.
 indiated be the instructor. they are exereved in sele fine their wwn
 structor designates a group of trees. homse or other whiect, at a dio. tance of about boll gards. and sembs there a math to repreent the





 rarde. then taking the laine fenition and ramine the heat in order





Bine The man repocotine the anolus mathe povidel with





The in-1


B,t+1, 戶!,




 f., them in a law tome




 carridero.
 it they are extenden as birmisher the attackine party may then
 the interval in the other: ear-h man pawing to the right of the man ditecter in his tront: Inoth syath halt at the wommand ot the in.

 sive and viex veral

## NOTES AND COMMENTS.

## 1RNHOH HORSF:

In the fall of $1 \times$ sil. atter the trith had been diocomatimed I had the shose pulled oft all my homes. In rum or two case the black smith. who was a very infelligent man. trienthendert th hate the
 they would go to pieces ithumbonl: hat feeling penitice that it would do how harm. I hal him er, hiply with the order. Gne of theoe homen is still in the service, atal althugh twoutsone seare wh. har very good feet. whereas before the shee were bemosed his hants were ib
 cast generally carried a phere of the hoof with it.

During the fall and winter of lash athl $1 \times s 1$. he horses were herded every day when the weather permitted. wh a hatd eravelly.
 no signs of tembernese of lameness when momated drills wer the same bottom were commpred. [11 May, 1sist the trong was opdered from Fort Walla Walla. Wabinaton. to Fort Lapwai. Idaho. and made the mareh with omshom homs. It war only ahour a ham. dred miles, hut an there was bet a lame haren on the tripe the suid cess was gratifying.

The next fall we had pat infantry commanting ofticer. whw did not elaim to know anything about horsers but dil ant like th awame the responsibility of heavigit my horses unsma. So atter commanicating with me and getting my views. he retiered the letter th the Department Commander. fho ordered me to keep one third of my horses shod. Continning for drill and scomt with the remainler mishod, we were ordered to the Department of Dakota in the summer of last. Sometimes a few horsen would show sighs of beine tember when on rocky roads. but ht was not from the hoots weatine down: in most instances, although the lorses did at areat deal of climb. ing when grazing around Lapwai, the hoots hal to be rut down. especially at the toes. whidh seemed to grow faster that the heels. Some of the scouting was prer rough mountainous countre, as the Lolo trail in Idaho. but not a horse was shod until the march to the Department of Dakota wils made. This was a mareh of over six
humdrod miles and athoush the meky rowts did pot troulde us it was fomm that when we strack a grite wil in Montana a few days travel upon it wore the honts down an it they had heen rasped. In
 shond. epecially on the tromt tect.

As -own as pesithe the ahes that had been put on. were again removel, and kept oft until the Reximental Commander almut laso. ordered all hurne to he shond: he finally comsented to let the himl feet remaill un-hod.

Year helore lat I mate a marel, of marly nite londred miles and this rear one of about time hodred mile with the hind feet
 horse tronn non shoeing.

I hase mot hat a tair dame th test the mather in an entirely sativactury mammer. but sill helieve that if horme are -nbjectied to standing on a moky picket-line. when tow in ure their tent will be-
 will be necosary. I have semod or marehed in Arizona. California. Nevala. Origon. Wahthgton. Itaho. Montana. Wyoming. Da-

 in the satmon river montatios in dahe and owe the gritty soil mentioned above. Sy horen nerer had the alvallage of standing on anvhitur hamer thath the ordinary pioker-lime. Had they beot
 necesany to shere in the only intalle where it wat done

To be ready for any wherence and tor thar show might beome









 rocky and matmal surtate of the commer and mardhed hack to Fort Rike. wer a ronte lit miles in lensth. in eight days and all of this without any lathe or fontore homes. The fect of all the hores were in at from condition ob their return at when they rtarted and were all in somd heathy and durable shape rably to have prolonged theif mateh indetimeser

The roak going and coming. were the ortinary dirt mads of the country. There were rocky places, grity places muddy places. and patches of macadamized road encountered. The hattery took
the same roads and made the same marehes as the watales. Return ing we had several daps of rain and have mobly mails hut the horses pulled through pith but litthe shphins. and the ir tert lat mit solten or wear dorn frem traveling in the mad or stambing on wet and solt ground.

While in camp, amifon the whole trip. the horsex. atombinn nathat
 no signs of wear or of sottenilus althoush anaty trom their stome pieket-line for nearly sis werks.
 on the return. rather than to doctor up ang telnher amil wern down feet.



## SOME MANTS ON IMPROLEMENT

With better faceilitide in the was of material. homers amm men than athy other mation. Wenr cavalry of the preent day in mitup to the stamidard.

The mature of the sef viac on which our cavalry has- heen ens: since the evil war. with its Indian acouting and tishtinge and trontion garrison routine, largely acounts fion some of thene detects

As a pule our cavalty serves at poses with intatherg the infantrey amost always beine it the majority and hulline the command The intantry soldier has his rithe and belt- to care tor: the wavalry soldier has his hores and stables hin carbithe sabere piad. satde.

 a moment's notice.

He has, besides. his fown -perial stahle suand dity to pertion
 man. I'nder present relings, if he an have. for atme. mope hizhts
 gether with his stable Ename it on the comtrary, her casalise her

 guard duty. It is an qutair rule that dont work horh ways. and this certainly does not. This excess of work of the caralry - ildier often canses him, on recidetistinge to choose the intalt ton in that the cavalry loses a good wollier of tive vare cavalry tainint: mot that the cavariman cannot easily do his work. inut the fomparimon affects him.

Ifain, it is a custome to dismont cavalry to parale with infantry
 alry should parade as favalry, for it is a monnted and not a dismounted force, and most of it d rill shuld be mounted.

At many posin, for fostance where cavalry and infantry serve together under infantry $r$ ommanding ofticers, the cavalry are hatelly.
allowed to see their horse exrept to groom them. The trops are first thoromblat drilled in dismounted tactics and of en when the opportunity tor monnted drill comes there in motime left.

If the drills inspections. parades. ete.. were momated. and it the troops were kept well filled athl a minimam namber of mell detaled away, wh that each man wobld have only his own horse to grom and care for, a a rule a mank improwent in our cavalry would ohtain. Dfinurse we should be well drilled iat tighting on thot.-and that is allf he thot drill we need.

When eavalry are monated they are semerally put in some out of way phate fin tear the will kick up a duat and mar the parade
 the ondier will then take a pride in aplarine a cavalryman in tact as well a- matme.

In the abowe me retherions on the infantry are intembed. It is
 think then.

The ravalry equipment is tow heary and rumbersome. The saddle and brithe though capable of improvement are as good as any yet duvied. The shomaker bit is the best mur servie has ever hat. but is too sereve for most horses and tow heasy. A bit out the .. Daniel" pattern. tiorged steel. tratuht shanks. with several kimb of curved hars to snit different horses. conlel casily be many factured hy the Ordanne Department. It is the lext bit yet mathe. gives more contion to the horse has hethey leverage more strengh. and grive the rider wompete control.

Now with reference to the remainder of the eyuipment. leaving out the arme of comoce our experience in someting against Indians. is that the cavalry horse is turned into a pack animal, for watt of proper path-male tanaportation.

Lating avile the tooper, his arms and proper horse equip. ment. What have we still left tor the horse to carry? Blankets canteen. overobat, pouth or slicker, mess outtit, pan. in cup. knife, firk. ete.. an extra pair of titted hores-shoes. lariat and picket-pin, nose.
 .III thi weigh him down with from esill tom pmond- to carry all
 marehes amd phayed ont horses.

The pack train is the only remedy for this. Exery tron of avalry should have its own pack.males, well organized and equipled say thirty packs. two sallles and two packers to ach trongt these to be under the exclusive control of the trong rmmander. bent in and out of garriwon. lwoth in Imdian and vivilizell warfare. Then the aradry wopld he foothose independent of mats, and wen of a hase of oupplies for a limited time. Let the packs carre the rations. beddiug extra thees. ete-they can do it. A groed pack-train will not he lat behimi cavary on almost any march. Pack- are absolutely necessary in oprating arainsi a savare fine and ot immense utility and alliantage againat a civilized one. We had grod pack-
trains in Arizona some veats ator, athd we callorht Indian, ton, it is

 supplied with packs.

At our post in New Mextoo. a cavalry one hy the war. there wat
 to catch Apaches in the monatains with six-mule tatans. (ine trond pursued the hostiles forty eqhethours and would hate toreed a tidht. lad not the men been tou sharved athl exhatusted tus iutu it. Thi
 goond officers and ment and it cost the leverories if Srizona and New Mexico many lives. One might as well attempt torron the dathitio Ocean without hoats. as to kateh dpaches without patks. 'The In dian can live on the country. mesalal and played-ant pronics. - the white man dannot.

The equipment of the cavalryman is not kept in proper whmition for mang reasons. So nevt material cath be obtained until the whi $i$. ntterly in tatters. has been acted on by an inspector. the articles dis. posed of, and new requisitions made and filled, which. as we al know, takes time.

Agrain from our continupus fiehl service. and the consequent weat and tear of atrms and equipments, we have paid tow little attention to hrightening buckles, polishings harness, etc. Tis tut the fovern ment furnishes no proper alpessing fier leather and the men have mot the time to burnish as a rule. The fovernment eould turnish the material. and it would and ho the diseipline and proke of the whldie to require him to keep his tit in "apple pia" order. as is dome in al. most every foreign serviee. The saddle blanket, while atombmo. is of a dirty grey color : one of lark blue of the same pathern worlid improve the ajpearance of the trooper immensely and the ifley owe could be kept tor fieh servike.

Now a worl on mornint stables-in codd climates horsen shumb not be grommed in the earty morning. They ate drawn amd stitf with cold. the skin is confracted and stretched tights over the bones and flesh. It is eruelte to subjeret them th the iron eurre comb aud stiff brush in sufh condition: it is injurions to the emat. inflicts pain and does mo possible geod. Jat the horse he ferd. but not growned. in cold weather: in summer it is well emoterh, thatirh some grood authorities say that one grond groominer a day is all a horse should have, so fare at his health is concermed. In some departments morning stablespare not de rigeur as formerly. and there is a grod old caratry maxim that they have alwayshern porlurtive of more drunkenness than any other thing in the sorvice. Let us hare morning stables in simmer, if necossury. hat dispense with them in winter.

To sum up, let the cavalyman be with his horse as mull ate fow sible, encourage him to regard the horse as a friemd. require him wh keep his horse aud equipments mhining. Do not require of him work that will interfere with this. Be careful to enlist men


 aml we -homil now altempi io hring our ravaley up wo the highes


 heme acalre wtioers should devote more abe th the setting up.

E. F. WILI.COX.

Fint Limbemma, Nith Cemalr!.

## 

In the carbine firing at Winsate, the most imporant teathere was the manner of hambling the pieqe and cabtringes in okirmishing, which was developed big men of the Sisth (avalry while practicing tire the competition, and adnpterd hy others atter arrivine there The
 from the sile of the little finger. This proition of the cartringes is the most convenient lin lomling. whidh is dane entirely with the right hamb. the piece hejus kept comstanty at the shoulder.

 short distance No thought had twhe riventw the art of loading lay those who had heoome expert. It wa-entirely mechanical ablr re markahly rapid. The adrantase of havine troops drilled in thi
 (The Smineried earline ean he aceol ately fired on rapilly that in fire minutes the barel will horlo the hathi tora blister

 tialt of the weajwh.

To employ tixeatron monnted. bexoml the eftertive ratife of the



 graber tacility.

 these shoot. I helieve took artiect: bat hat ath hern tallght bow te aimproperly, unamod. no donbt a far peroentate of hit - Wonld have
 alry combl harally have comped at a hamdred or exen a handrod and fitiv vards: and any tair shot ousht to kill hiv man before rominy in contict with the lance or saber.

In aiming. mounted. a person should riae slightly in the stirrups and lean firward more or less. depentiog uphn the direction in
which the shot is to be tired. In this way the hooly is put upon springs. as it were, and relifed from the shotk it otherwise receives at each stride of the loorse.fand a comparatively aceurate aim can be taken.

The horses used at competitions shoulal not only be selected with the groatest care. but earefally trained to a unitiom sallops as was done at Wingate. The difference between a good larme and a fair one maty make a difference of several points between the seares of equally good shots. I lat wt horses that will stand tiriner ata be traned be carefal hatndinge w that there will he hat the whightert difference in theire qualities as monnts tor competionts
skill with the pistol, monnterl. is of tirst importance. hut the mathual should be teaned on font betore pratedeing on hormehark. Suapshonting is most important. becallse the primeipal use ot the piotol will probahly he at elose quaters. when there in no time tor taking aim. and as little necessity. when the hand is propery traned. Ans thing like fine snap-shooting is impossible bevond twenty yamis except in ease of the rarest of good shots. it shomh enter into competitions: the target used heing the standing figure ami the din tance from ten to twenty yarls. diming at fifty or seventy-tive Fards does very well. but twenty-tive yards is tow elose tim an expert shot, using the $\cdot A^{-}$target. In tiring momoted, the rompetitur should be allowed to aim at any distance. if he sees tit todnon. In snap-shooting dismounted. the shot shouhd be fired ow quidkly as
 allowed to hande his pistol aceording to his own merhod.
W. F W1I.IFR.

First Lieutenint, Fi,urth (avalr!.
 be accepted tion an efficient weapon. The primeipal tronhbe i- with the "spare parts." which segm to he made of sutt and interione metal
 to. For example, the upperpemd or nose ot the trigerer. where it en gages in the notches of the hammer. breaks off upon the slightes provocation: the hammer notehes themselves either chip oft or leme in a very short time, amd the stop-holt amb hand spings stame very little wear.

If a single one of these pssential parts breatis. the revolver he comes useless. Compare the rewlere in this resper with the rpringtield rithe and carbine. The small parts of the latter weapon break but selolom. While those of the Colts revolver are annatanty doing so. The explanation of thif is either that the $\cdot \rightarrow$ mall barts are made of weak and inferior pheat. or that the meehaniom of the look is defective. or. what is mgst probably the ease. that looth tamhts exist. The revolver does notget any more wear that the carbine and receives as arood treatment. As one illustration trom my own ex-
 mer. a new trigger, and new stop-bolt and hamd springs in meres


Fowly and then as rapinly as powible party for exarise and practice and party to assure m-arkthat the revolver worked proppractice a had por snapped it a dozen time betiore something grave way. amb the weapon would but rock. Ifon intestigation fond
 taken apart ant a new trisger trial proved strong enongly. Inring the atire enarne ot the revolvar mateh. I was comstanty in tear that my revelver would berome disabled at the most inopportune time

Another delect in the Coltes revolver is fonm in the revolution ot it e celimber. In the method preseribed he the Firing Requbations. the yuick. sharp jerk to the front whiel a momenter from properly rock his revolver, frequenty prevents the stop-hnt from properys esecuting its fumetions, and the evinher flies past the noteh. It not only find pant but bails to return to its proper position, and the resulf is a miss-nre I have seen this happentime and agan during the tomps revolver practice, athl mot whly to whe elamber, but to vereral in the same pintol and in the same rath.

A -imilar tronble was experienced ha areral eompetitor-in the revolver contest last Augual, where crery weapon woulal naturally he in the hest eondition. The Arme rolt - revolver has anmmer



 sithe. $I$ lomble action revolver with a maty attachment hy saving


 tive times: lest than iwo serobls wonld he noeded to deliver tive shots with the double action. With the latter action a lommer is unlleressars
 acequental axplowinn. Takre, as an illa-imation. the hatent pattern
 catmot he tived until the hamd firmly orasp the dock: athe as her


 any ned.

To a hammerless pistal the nhjertion might lee mate that it is impussible to tell when the watpon is eocelerl. The s. N W. hatmmerless is mever cocked motil the instatt betore din
 lese the safetw attachment is pressed lome the firing pin will wit

 tion of trigiger athl atety attadment.is abowed tu throw it forward. Thi- is an alvantage in that it allows all the dhambers bering loaded
without fear of aceidental dacharge. With the colte, the preatu tion must always be taken of keeping the chamber. uf wh which the hatmmer rests. empty.

In regard to the pistol penctice as laid down in the Firims Rewnlations, the firing to the front should he abolished. It is not in erneral. a practieable movement and never so in a vomend lite. It i a most exceltent way to teach horsers to be egun -hy." The rider in. variably fiew his revolver fith its mazale withiin six inchers the

 sensation by slaying, throwiper his head up or towne ide and atter his tirst experience, never thils to do so every time the revolver is discharged. on mater in what direction. Bowide. within tifty yards of the object to be fired at. the horsed head aloms invariabligets in the way. and thus, in ordef to ohtain a semed view of the target, a change to a direction more of lese oblique leewmes newosary. This change of direetion then residts in a fifines to the right fiont or left. front. The firing to the pflat-front and leffefroms. comducted ats hereatter explained, will wiot all the practice meco-ary and attan the desired results. Byallowing the angle of whiguits to be rarie. in this firing. or rather, be havins motised anghe ali the essemtial elements of front tiring will be accquired.

In the recent revolver fontest at Fort Learenworth, not one of the tiftr ofticers and men competing role directly at the tatects, or fired dirretly to the front. when insug hall cartridges. . III, without exception, rode as pbliquily to the line of tarsets as its length and the rules goveruing the cointest permiteo. ithe privilatse to ride and fire directly to the fromt was not denied. but I did bint observe any competitor avail himself of $i t$. There mast be wime vital defect about the movenent to cause it to have beeol … mani mously avoided. It was also observed that the comperiters cultas ored to deliver all their shotsto the right-front, and only a few taile..l to do so. The firing to the fett-front is just as important. and it. practice in eompetitions should be required.

In place of the present mothod of firing to the front, right firont. and left-front. I would propose the following: Let four (1) tarinct. be net up in line five vards aport. To tire to the right fromt. let the trooper start from a point one humdred yards to the fromt and twenty gards to the right as he faces the tourth target: then. ribling toward target number one. hed should tire one shot at cach figure, amid the extra shot at either target he may select. Firing to the lett tront may then be practiced in a singilar manner with the targets on the left hand. Let the gallop be take at eighty yards fom the targets, meas ured along a line perpendiculdr to their fromt the five shots heine delivered at any time while pating between the eighty yard line and the line of targets, and do not require the troopers to pasi het ween the figures. Under the existing system. the single shot which must be delivered as the eighty yard linc is crosied is, is a rule simply thrown away. At all events, it can be nothing but a chance hit, it a hit is made and that is very rarelydone. The proposed methom will pro-
 in aceuracy since five hats will have th he delisered in atonit the time now required for tour. Furthermore, no hot-will be wasted. bat all will be fired at the tartot with proper are and all posible

 aperabed Te日 :ath-wohl he a mencous allowallo.

 ing les a jerk forwat With our prenent methinl. I have sern pietols

 ath in amother the troper marrorteraped howing oth his own
 ping the hand, the movement is quibker lo.. awkwal ath more batural than that mow proserihed. greater accuracy ran lac attained. and it certainly allows seater rapidity in tirine The are of the

 herent the lett arme and is hwered prineipally trom the wrint. In all wher tiringe it i - mepled to the fall exten! of the arm, and th the rear of the right hip an far as may he hecenary. This methin of conking the revolver was tirst hown to me le Capain Hana and I have toumd it a meat improcement on that proweribed ber the - small Arms Firine Regulations.
 habit of leveling or projecting instinctively the piotol. in the sabse manner that the tiretinger would be printed at an wheet. . I do mot believe aty one ever takes the prition of "raise pistol," sal is opeak, hetore jomeng his toretinger at an object. A man: handare orituarily earried in the netishorhood of his hips and when he wi-hes to une his toretinger as a penteter. he raioes his hand and arm at whe to the desired direction. This natural movement is apphed in the atove method. It is also datmed for the . Requlation method that it resembles the throwing of a hatl ar stone. I have thewn a great many of hoth and used the...everband throw," hat! have fomblvery little it any resemblance betweon projecting a pintol and projecting a hall or stome. It may he negen agrainst lhis method that there is great danger ot a mans sooting himselt in the leg. Reduced to that argamente it beomes simply a choice between the head and the lege and there can be po doubt about the anamimous choice of the les.

In dismounted firing. an am should herallowed. Though such is the practice the "Firing Regulations" do not explicitly anthorize it. Snap-shooting is the only system there recommended, and the interence could be drawn that it is to be used excluavely, dismombed as well as mounted. The benetits to be derived from using ath aim in dismounted practice, require no explanation. In mounted practice it would be better to reguire "guick aiming." instead of
snap-shooting. With practide will come rapidity and the desired :instinctive leveling." the former method will rewolve itself in all essential points into the lather. less time will be reduired to attain the requisite proheience, and greater aceuracy will follow. Quick aiming, combined with Captafin Hatis method of manipulating the pistol will. I believe, producepmost astinfactory resultw. especially in pistol will. I believe
the mounted firing.

While on the subject of bhooting, we may call attention the the front-sight of the carbine. ft is coarser than is neressil? and ore copies entirely too much of the fielil of view. expecially at the mid and long range distances. Jow that front-wight covers are isvued, and constantly used. there ist no reason why that sight cannot be made as thin ais the ome on the rifle. At a range of finll vards the present front-sight of the catbine will about cover the width of a group of skirmish tigures, and at Ono vards at least wothirds of the width of the kneeling farure therehy rendering dose shooting impossible. For the Name reaspn, known-distance shooting is not so accurate as it might be with the carline.

JNO. M. CARSON, JR. Secomd Lievlenant, Fịith Citalry.

More prominence shombly given to the revolver compretituns and some changes might be fame in the mantuer ot eondurting them. We shonld have a reghlar revolver eompetition and team. with competitors. one trom eath troop, selected from among the best pistol whots in the troop, ami not have pistol eomperitions supplementary to carbine eompetitiohs, thourh the two misht be heditat the same time and place.

In connection with the dreny carbine compertions. there should be an Army revolver eompetifion, competitors to he sedected trom various revolver teams, as the titions.

The medals for the revolver teams shonald he the same as thone awarded to the infantry department teams: and tine the Irmy rerolver team the same as those pawaled to intantry divinion thatas

No good reason can be seen why dismounted revolver fring should not be held at the three ranges, twenty tive fifty, amd seventy fire vards, the same as for individuel recomed in the trow. In the monated firing, both in tronp practice anh competitions, no rat -lower than ten miles an hour should be permitterl. These changes would wive a stimulus to revolver firing in the army which wobll hring about surprising results.

JoHN .I. PFR-HIS(
Second limutentint, Nirth Cion, ity.

The combertition last dugast served to bring out more promiThe compretition hast Augas server, and is is difticult to say nently the kefecs or the shontcomings hue to its medtanism or those due to the dias (o) which it belosiss. Solme of the parts of this pistol are so weak that it is next to imposible to take a troop of ear alry out fior an bume = practice. without a aumber of the revolvers be coning disabled trom the breaking of the parts, wataly the stop-bolt and hand -pringe. Nine ont of wot of the new reroverewhen first and hame defentive amd dangerous from the tate that in coeking then tried are derective bold does mot stop the evlinder in the right place, raping the stop-bot toes or a discharge when the axis of the ball is
 sot in the rxis of the bure ghas ref these are particularly objece
 tionable in monnted work. for the reason that the proitono of the phe tel in the ham is very unstable at the imstamme to the stoek. The the thmmb is being dhanged from the hammer to the stock. The ather dass of pistols is composed of those which are eotek wath the toretinger atod generally called double ation.
 dicates to the shomer the instant the hammer is gening to strike
 thereby ellabimg ome to baring the cavalry competition at Fort the pistol with hi- thamb. She Leavellworth whe math shot his hise amp the watued the thamb.
 to the stork. and in my opinion there were mant premature dis--harges which misht have heren mueh more witiortumate in their re sults.

The practice of hanting fown borehack hire thy the thent, as required hy the F Firing Regulations. is Viry had for horses and un-





 is ne'essary to shom to in all mombled tio
 tailery at an ohject the si\%e of a man. it is a wate ot time amd ame


The method of tring the revolver adopted in the new drill regnations. seems to be wrong in primeiple and to have hat few adraates. Shap shooting is nothing more on lese than quick aming and frimp. Aevorary ann only he ahtaned throngh proger appret. ation and eorrection of errors, and where no effort im made to align the -ighta, m math will ever learn where his datit liem.

Cuptain, Fith Clenairy.

From a comparisen of thb tion it is evident that the fat of a weapon. We all expecte of a weapon. scores than those ot the ear scores than those of thedar
sotbudly by the rittemen. nothadly by the rittemen.
range in the shirmish firing. range in the shirmish firing.
ing can be done so much mory ing can be dople so much mord rably illusory. Lomang and aim. position, that the rifleman fibls it men the back than in a prome shot required be the Firing Rherulations at the tirat .. heder hat .. reserves his cutridges for the thortur divances when the alrymen can tire more than four shots at any bath. in the time al lowed, and the majority will hive cartridses in their helts, when the skirmish rund in completed. freuc a few competiturs u-ed a ant of back position with the carhink: but the abonere of the strap and thes shortness of the piece. make any form of this ponition not mily unsteady, strained and paintul but dangrous, alike fir the man fir. ing and for gevery one else of the target rathge These divaluathtages would all be obviated by the adoption of the .e experimental: carline, which was untiortuitely ordered to be returned to the arsenals, betote the target seabob of this sear opelome

The barrel of this carbine 中as two inches longer than that of our present model; the heary cart filge of the ritte was aved. and all the powder was consumed; and it was provided with the strap tor foring in the back-positions. The objections I have heated adranced against it weme that it was heafy and clumsy and save horem sore backs. My oirn experience has convinced me, that these objections are not valid. Two troops of the Eiehth cavalry were armed with it, during our march from fexas to Dakota. The back- of the horses were in as good conditipn, daring and at the termination of this long march, as those of the other troops of the regiment. In this excellent carbine, there bs but one chathee $t_{1}$, lo. davired- a thinner front-sight.

It in possible that the cavaly competitors were solectend with ref erence to their skill with the corbine rather than with the reworer This will, in part, account for the poor scores made with the latter. But the main canse - especially with regard to the mounted tiring. -was, undoubtedly, a want of previou- systematic practice. Considering the fact that there way almost no instruction in piotol practice in the army, until within the last two or three vears and no real system of practice, prior th the present year: it secms that, on the whole, the competitors shot as well as could have heens expected. The next competition will probably show a marked prosrese. espeially in the mounted practice.
It would be desirable to hate a less clumsy, more reliable weapon than the Colt's revolver furnisped us. I to not believe a more cumbersome grip could be designed for a pistol, than that of the service Colt. The grip of the old honse-pistol was no worse. The grip of our revolver. instead of termidating in two wharp, ocal points, the rear one of which strikes and brhises the palm of the hath at eath fire, should be round. like that of ofher modern pistols. The celinder is often turned so far, in cocking the pistol, that the hammer strikes


 Rewnlations

It would be letter ter inatraction with luth the carbine and the revolser. it we could have a month cach gear depocel exduxively

 the aumal competitions, the antumn encampments and manemeers. and he drill ar pas another month beadhed for rewolver prac-
 Septomber sun at meridian, or the trop- ot thi- bepartment witl hate to move turther whth than North lakera

$$
\begin{aligned}
& \text { M. F. STEFILE, }
\end{aligned}
$$

 tur diatingraished mark-men. It equlld not be cartioel on as at pres. ent with the infantry alld it wombl hine additional expelace in the trancomrtation of the mereosatr horser
 Wrolk
 extra ment mot reprementatives of their rexpertive ortralizations?

The attendabere of these distinguinherl marksinen at the competitions of $\operatorname{ls}$ sun. Wunh repuire only a temporary mondication of the
 - lans who would be inlad to know it they conld nuceed umder ioxintiner conditions ambl. I lopme would sileme a mamber outside this clas who think ther eamout

Is a fromancot momitication of the Firing liegulations. I would sugesent that the adrancement of men in lane rathge firing be lett to
 men aret the required arand watals. thes shond be eredited to their orgabization as sharphomters. A certain amount of practice will be medessary to gather information in rewad to elevations for the colles tiring.
[would sureest akn that the names of distinguished markmmen be cartiod on the Army Register. that *aitably inaribed medals be given to all distingruished marksmen for phese gabed on depart-
 purchase of these medals trom the Ordnance Diepartment

With rexarit to the ammal competitions, all department ranges vinulid be mate as nearly alike as posible. as the ocores made by the department teams are now matters for ofticial comparison, Withont taking into consideration that the rampes. especially those for stir mish tiring differ greatly

Also. the attendance of regimental representatives at depart ment and other competitions shond be eompulsory.

JOs. II.1RR.1RD
Caplain. Vinth Camiry.

## CNE OF THE MELIOMRAPH.

Having been ordered to make a practice march of ten dats trom Fort Apache, Arizona, and apong wher things. tw establinh wom munication by heliograph between the post and permanent puints along the line of march, the fillowing report was mate on this matter:

Though communication wad established by helingraplis. yet it was done with a great deal of tronple, and near Monnt Thomas the command had to go out of its way to establish this communication, and was delayed by it ; a great dend of time and labor was necosatry to climb the mountain from the camp, ant the chouls intertateol seriously with the instrument. The instrument would be of no use to scouting parties in this parg of the country: but would be a draw. back to them. Its usefulness here is limited to permanont camp, where points can be obtained to extablish communication. when it might prove a help.

The signal party showed great energy and intelligence and made every endeavor to make the trial a whecess. They alow andearored to get other points to send messages trom. but were not able to do so on account of tho contiguration of the country. The heliographic commanication bing merely an incident of the match. and not its object, the route was mot taken solely tor the parpose it getting it, though in one case near Monnt Thomas. it was chaturel for this purpose, and at all 1 mes effiorts were made to whtain it. From a hill near the first camp, the plain west of the post conld he seen, and a party there could have seen a thash from our flasees Doubtless, a party having no poject except heliographing, might set other points from which they cold establish lines. comertint prominent peaks in this country.
W. E. SHIPP

Secund Lienternant, Tenth Ciurtry.
THE (iERMAN GRAND YANELCERS NE:AR HANOWER by Puchteney miende. in Army and Nave gazelte.
From a military point of v ew, the maneurers once more illus trated the perfection to which the Germans have brought their cavalry. There were no chardes of s.0no as at Mancheberes but in
 Wersex and vos Planste heref showed results of caretul training in horse and man to a marvelloug degree. These large bodien ot cavalry charged across broken conutry fior over a mile at a time at a furious pace, keeping well toghther, and showing at the end a miformity of power on the part of the homer delightind to cavalerist. I had searcely an opportunity to juige of their effertivenew when dismounting and fightifg as infantry, nor do they seem to attach much importance appardntly to this art. in spite of the hesons taught by Stewart and Suerinas in the American civil way. How. ever, in spite of the fact that great cavalry charges have been the features of the maneuvers this year as last. Where is mo doubt
 which reweives a new impulse trom the use of smokelose powder. will anse the farmam in the next war to iflustrate the nsen of mounted intamter for the first thene in furng lany watalry charges took place this gar that hosked like a wanfon sactite of men. and called
 the Emperer well-kmown tondmes tur watry has bed to the assmotion that (erman now proper th ride down intantry by weight of horse. A- far as the Fimperor gow this is a mistaken view: he knows military hintory tow well to eherish such dashing illusions. and whenerer he arder a hatere. it is' upon the assumptinn that the oppoing intantry or artillery han leenme demaralized bey the work of hionsm intantry and artillery. The were instane ot wer-boldacos in this respect on the pat of enmmanders but they
 iarizel u- with its monotome pertectinn, that whe is ap to forfet how woul it is until comparing it with that of wone of her conntrats. Autria. The marching of the men-athese all. their unitirm.


 payed a mall roh lant vear :ow ablieve wowers in the way of rapidy fintitine important puntions In toll mindtes the whrow up hrastworks sutheient or give then twherable shelter. Though on sulle octasons the men worked late into the night making their line practicalls impnesuathe. On the hast day the Emperor had his intantry ledind a line of carthwork about tive fere high. from behind which he so sucecostully resisted the attack of the attacking Seventh forpe that he was anm emabled to somd hi men out of the


 b, dikeos frem the designs of the late raptain sompasy of the German army. These little sted fintrover are arried about on track-male for the purpure drawn ley six homse and while much

 spedio of wapon, and dermany with wise provision, is giving it a tex. The $\mathbf{x}$ man unel were of the
 vation with tavor. in tact. hall it been lett them. the would have eselubled it from the maneaver ground. It is the Emperor who insisted that it should reveise a tair trial, setting his ofticer a geod example in the direction of constant erving ater improwement.
 artillery as well, in the latter cane with qualitied surome for ith the
 muehlust when firines The first ne of this powder was at the spandan manourere hedthingmmer the the Emperor of Austria. There the air wa- war and till athl the effert almost aboblutely smoke. laws in fart. ane might liken the vapor that fose from the hurnt
powder to that which hankes orev a meatow on a lut day. It the Hanover maneuvers the aif was hearier and the stumekiowness iou so pronounced, although for prastic:al purpunes all that womla lat
 or man. I asked for al cartridge but strict orders had liwell issued that the deepest pecrecy should hee olserved on the -ull. ject. As to its ralue in dar. We know nothing as set exect ...n hearsay. The fact that the German anthoritiow are sativied is a s sreat point in its faror: but it would hac discombitins: time the nation that adopted it to find ton late that the powder used had a disistrous effect of the gun. If the German experiments are tio be domend successful. it is of the highbst importance that the mation fiollowint its lead should have exactif the same powder and nit merelv .one ot equivalent power and smoikelessmes.

## CIINGES AND PRGGRES IN CAYALRY MATTER nering 1 nos.

From Colonel v. Lobelifs Reports fo Journal of the Roynl thited service Institution.
No material changes took place during lNox in the view alreats generally necepted in regard to the mamer of emplovine cavalry in war. In the matter of equpment. the days of the cuiraw are at an end except as a parade dreft: and its use has heen dixeontinum his the German cavalry. The fance, which hav fallen into dioreputi. and been entirely set aside py some Enropan armico is coming int, favor again, and it seems lifely to be established in the hish plawe it tormeryy held. The queption of esiving the catalry a repeatione carbine has been freely disfused: but in France allone it wats de cided to arm the caralry refomentw with one mamely with the Lelbel repeating carbine ( 8 mim).

In Germany increased inportance was piren to the use of the carbine by the publication of new Manketry Regulations for the ('ar alry. In these it is pointed out that instruction in firing is one of the nost important portions of the training of cavalry and must be carried out in all its parts wh the greatest care. Whereas formerly. special prominence was given to the training of the cavalry soldier at short distances, it is now prescribed that he is to be equally care fully trained throughout the three classes. for it is at longer distances that fire will orilinarily of delivering the fire is restr ridual firing finds no place. e possible. In tiehl firing the manner acted to croups and sublivisions: indi palle for short distanceap foring by groups is amploved principally at short distances up to 500 metres; by subdivisions at medium
and long distances. and long distances.

The practical value of a more thorough training of cavalry in the use of the carbine was efidenced by an advanced guam cixercise carried out over the Magenan practice grombd. I squadron formed part of the body of nixed troops employed. and wats utilized dismounted from time to time to direct carbine fire arainst targets representing an enemy. The results were not altogrether satisfactory.
 thomeh the emphovment of eavalry with their carbiles dismounted would whem ace ur adequate tainine is indi-pensable it ther are





In Ru-aita julariner tron the di-positions m:ale for the maneuvers. the theory rewaring the voppormont of mave of eivalry as

 conere with. w it "ppostion to. intantry in every maneuver in which intantry tomk part. Nisht mancurars were practiced. and it is thought in lasoia that in tuture warm they will play an important part
 fered with he the number af reeruits. due to die short perionse of $^{\text {ber }}$ serviee generally three and one-halt fon for vears, and by the

 from the maneavers, when the divisions were atom 1 .hno horses short. the regiments are still worse offin the matter of horses. In these days. when tranimg umber serviec conditions is ackowledged
 comstances in a very disalvantageous position as compared with the (iorman

## TIIF BFLIENTE (OMPETITION.

The carhine competition bed at Bellevac. Sthraska, was splendially comblucted. Both the eamp and range wore eonuplete in all minor detaik, and everythins so thomehly rymematized that vexatoms delays bever ocenred to try the patience or disturb the nerves.

It first sight it would seemintht the results attained were rery much helow Those ot orher comperitions. bit in order to make a just comparison it is neoesity whear in mind that ."n the bellevue range bo compertion was allowed to had his pieceor touch his sights until the hatt had heres sumded. while in other eompetitions these
 made lav the War Ihepartment so as to insure a uniformity of practice in all compertions. There is mo doubt that a well trained soldier in actual combat would lobl his piece while advandine or retiring. as well as adjast his sights tororrespond with the varying distatice. Why this should not lee done in competitions is nut elear.

One of the most interesting feature ot the pompetition was a recrimental mateli in which the First l'avalry eartion of the honors,


The revolver match was highly intereving and the results attained moderately satisfactory-sufficiently oo th show that the revolver is bot as uscless a weapon an is sometimes supposel. but that
traning will make it an important factor in the eavalrymans equip. ment. In the mounted tring. cartridge frequently tailed to exphone. giving rise to some doub as to what rules shoulf eovern the -uhatitution of shots in their frearl. It was timally decited that in such cases the run should befmade agrain and the fall nomber of shotfired. the first run not befing seored.

The failure of the captridges to explode was generally due to the
 the cylinder to revolve a wifle foo far, thas catu-ing the cartride to be strinck on the rim infeal of on the renter

It is generally conceded that the gat preseribed by the ribin! regulations for monnted pistol practice is tonslow. it lefing almont in. possible to keep the asfrage home at a gallopand sot comanne the requited time in passing the targets.

SWEMMING OF RIVERS
Night operations. the swimming of rivers ley eavalle athe other exercines of an unnsuat kind, are occupsing much attention in the military circles of the equtinent. Recently the Ruswian papers gave interesting partieulars of the sucessful passage of the Dnieper be a party of Cossacks. and fe now notice that at Danitz. on the Fibe. certain officers and menfot the Seventeenth German Draromens. under the orders of Prince on Remss. have executed a like oproation. The object in the latter qase, however. was somewhat difterent. tor whereas in Ruswia the Cossacks thennelves swam leading thoir horses, the purpose of the German experiment wat merely ${ }^{(1)}$ din. cover under what condifions it is possible for a large hody of cavalry horses to swin a considerable river guided from boats. It was suc cessfully shown by this and other operations that, under -urli coll. ditions. horses can wwiti a long distance withont great tatigne. In anothero pate Lieutenant vos scherstobt traversed 1 . bion maters in seventeen minuter, iq quiet water. with two horses of his ownArmy and Nacy Gicizftef

## A MODEL REGIMENT

"There is the best favalry regiment in Enrope." remarked the Russian atache to a German officer during the Austrian mathencers "What," said the Germun, "an officer of the Rusian cavalry almitthat?" . We have ndthing like it." replied the Rusian. "Nor have me," satid the Gertath.

The price at which this reputation is purchased is shown by the following aceount of adeidents to the Thirteenth Huzzar of Buda Pesth:

The regiment was kelivering a charge in maw at full sped. everything was going with the most billiant dash. Sudlenly a horse goes down and produces inexpresible disurder: thee troopers are mortally injurdh and seventeright horses rembered unser-viceable.-Revue du Cetor Militaire.

## REVIEN'S AND EXCHANGES.

## THE C MMPAGN OF KÖNIGGROTZ.

A study of the Austro-Prusian Contlict in the lizht of the American cival War, by 1.ieuteramt A. L. Wusf: 1.

The auther draws a careful sketell of the campaien. which he bases upon standard authorities and upon a personal visit to the reme of the operation- deoreribed. On the seoge of historial aceurace. no question will probably be raixe.d. hat it ondistant a voice should he heard beyond the watere, it is likely that some of the PanAmerican criticisme of the bowk will be duite well belabored. Lieutenant Wasiser tells us that his ehief object is to compare the military teatures of our civil war with those of the campaign in Europe one year later, and he charly shows. first, what the distinctive les sons of our war were, and second, that the were studiously ignored or despised by the Earopean combatants. As do the impertance of these lesons the military nublent ha- of eworse a fair right to judgetake for instance the full dewerpment of hasty entrenghments. which were a fine ant in Ameriea in lstita and apple them to the campaign in Bohemia. By their use might bot the dangerons strategy of Mobere operatine on converging lines. with strong barriers on each, have been bronerit to griet, the army of the Crown Prince detained in the paseron the Rasencrebirge and the superiority of the meedlegun neumalized" That the Anotrian defuat would have been more than postponed may admit of doubt, but we mat fairly conclate that the spectacle of a great and brave nation, vanquiwhed at one blow, would hase heen saved. In contrast to this picture the athor relentlesily draw - that of an Amerian arms. retreat
 on the morrow. with elused ranks and a molid tront. Ather all. military lessons are quarally imparted in abmo the same maner: hasty ent trenchments had been uow long bertire shiluh, hut it tonk hat biooly experience to teach u- the lesson we are now reading to Bexenek and his army:

It may be conceded that the cavalry of neither combatant with its armament at that day, would have had chance of surcess in the far reaching rad. or as an attacking and delaying force. It was
too soon to expect an entire change in the character of mounted troops and a demolition of the truditions of a cavalry that had passed for the best in Europe．Indeed such changes have not been reached in Europe even at this day and cavalry atill remains their heast pro－ gressive arm．For a study of the possibilities of the campaign for a cavalry such as ours，and for an accurate statement of the cavairy idea as it exists to－day in America we refer to the text

It is to be hoped that this effort to place the art of the American soldier in its proper light may receive the encourarement it de－ serves．Too many of our best writers have suffered themselves to wander from parely profess onal atudy into more jopular tields． We are too apt to believe that soldiers like poets are horn not made． and that the God of Battles a中ards His prizes sometimes by • luck．＂ sometimes by＂destiny．＂

## MILITARY MISCELLANIES．

By General James B．Fry，U．S．Army．New York，Brentanosis．1889．
This is a collection of writings that have appeared from the hand of the author in various ways during the last few years．The book is divided into two parts．The first part is mainly of an ad－ ministrative character，and a considerable portion is taken up with discussions of a somewhat controversial nature；so far as they are concerned，the ralue will be co⿻日乚㇒十⿱⿰㇒一乂心，ceded by those who share the writer． views，and no one will deny that the whole book afforis veryenter． taining reading．The second part of the book deals mainlyin rem． iniscence and the history of times in which the author bore a very prominent part．The soundness of the professional criticising an the careful accuracy of the istorical statements make this part especially valuable． $\qquad$
Service Perigdicals of the World，with Rates of Subseription．Lon－ don，W．H．Everett \＆Son．

War Department at the Centennial Exposition．Cincinnati，Ohio． Official， 1888.

Manual of Drill of the Ambulance Detachment．By Wididam（） Dietz，Captain and Assistant Sargeon L．S．Army．

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[^0]:    - A battalion of rifles not embraced in any regimental organization. All men in the German infantry are now armed with rifies, of course, but the jagers are still especinh

[^1]:    "In Blackwood's Jagazide.

[^2]:    Chaptain Davis, November lises.

[^3]:    *General Fitz Xexe in Sonthern Historical Society Papers, (18:3) No. 4, p. 1fi-
    $\dagger$ A copy of these, in STUART's mandwriting, lies before me.-T. F. R.

[^4]:    Major E. P. Halmisav, Remles and leaders of the Civil war. No. Lo. p. 3s.
    $\dagger$ Southera Historical society Papers

[^5]:    BLPORD's Report.

[^6]:    *Colonel Broone-Rawle in "The Right Flank at Gettysburg," Phila.

[^7]:    *"Cavalry In Modern War."-Colonel F. 1:. Trenc'h (London ), Iss:

[^8]:    -The town of Orlean, Fauquier Co., Va., contalned 102 inhabitanta in 1880.

[^9]:    - The second command is pronounced as if written trestios.

[^10]:    E. V゙. SIMNFR

    Mijor Fibih iowiry.

[^11]:    - 

[^12]:    1. Formard. ‥ Gimide Center. 3. March.
