

U. S. INFANTRY AND CAVALRY SCHOOL,

Fort Leavenworth, Kansas, August 9, 1889.

General:—

I have the honor to submit for the information of the Major General commanding the Army, the annual report of the United States Infantry and Cavalry School, from July 1888, to July 1889. This period covers the second year for the student officers entering September, 1887.

The month of July, 1888, was devoted to instruction in signaling, including the use of flag, torch and heliograph. This was continued during August, two days of each week being devoted to the drill with signal train. During these months each student officer devoted one day to mounted reconnaissance, two to a reconnaissance and report of a defensive work, one to the use of the pantograph, and one to round handwriting.

As officers passed a moderate test for skill in flag-practice they were excused from other practice of this nature than for one hour twice a week. September 1 to 25 instruction was given in elementary field engineering, including drawing of field work. Each officer was given a different study of the following form:

Construct plan and sections of a redan (lunette, etc.) for a garrison of —— men and —— guns, the commanding heights bear ——, are ----high, and distant ----.

On the 25th of September the school duties were interrupted for a practice march. The command left the post September 27th, returning October 4th. The march was made to Topeka, Kansas, distant 66

miles, remaining in camp at the fair grounds near that city for five days. The roads leading from here to Topeka are laid upon section lines and inclosed by wire fences or strong hedges. The command could only march with advance and rear guards.

During the stay at Topeka drills and ceremonies were held; brigade formations at the different hours of the days spent in camp.

The commandant of the school marched with the troops.

The month of October was set apart for practical instruction in military problems, rides of instruction, showing the importance in calculating time for the purpose of concentration, attack and defense of positions, advance and rear guards, convoys, etc., screening and reconnoitering, writing dispatches of the information collected. Reports from all commanders of large or small parties engaged in exercises were required to be submitted with maps, which reports were afterwards read and commented upon by the instructors, errors pointed out, and awards made according to merit. Time allowed, twenty-three days.

Theoretical instruction in the Art of War (Hamley), seventy-three recitations. Instructions was not confined to the text, illustrations from our own and other wars were given by the instructors whenever the conditions were applicable.

In the department of infantry Fire Tactics (Mayne) was prescribed for the infantry officers, thirty-six recitations, whilst the cavalry student officers were taking an advanced course in veterinary science. In addition, practical instruction was afforded the student officers in mounting the guard, in dress parades, and daily (weather'permitting) taking turns as adjutant and officer of the guard, (the first lieutenants performing duty as officer of the day),

and frequent ceremonies, combined arms, and brigade formation, under the commandant.

Previous to the principal instruction in engineering to which the months of March, April and May were almost wholly devoted, the chief of the department of engineering suggested a course of building superintendence, which was introduced in the course of study, with the double object of saving the time which otherwise inclement weather would cause to be lost, and with practically fitting an officer for the duties of construction, and repairs which at times devolve upon him. Eleven days were devoted to this subject.

For practical work in the department of engineering that class was so divided as to give each member, with slight exceptions, the following work: .

Twenty days of practical engineering under Captain J. G. D. Knight, civil engineer, and twenty days under his assistant, First Lieutenant James A. Irons, Twentieth Infantry, distributed thus: Ten days of photography, five of heliography, three days of foot and two days of mounted reconnaissance.

The engineering work comprised construction of shelter pits and trenches, gun pits and epaulments, trestles and spar bridges to include spans of 45 feet on a scale of one inch to one foot, cask piers, gabions, fascines and hurdles and wire entanglements, defilading, profiling according to the latest type of hasty field works on a level, on slopes, and on crests, and the use of blocks and falls, and cordage.

Photographic instruction embraced all necessary to the reproduction of maps and their multiplication by artificial light on gelatine paper, or by sunlight by the blue print process.

The object of the work with the heliograph was to familiarize the new officers with the new form of

heliography, issued to the Army since the practice of last summer.

The foot reconnaissance gave practice, additional to that of the first year, in the use of the topographical field note-book issued by the engineer department, and adopted by the Army Regulations of 1889.

Mounted reconnaissances were made of defensive positions, one at the southwest corner of the reservation, the other about $2\frac{1}{2}$ miles west of the Atchison Pike, both in accordance with the method studied in the first year's course.

During the spring two combined surveys of a large portion of the reservation were attempted.

In all cases of reconnaissance work no time was allowed to the finishing of drawings in quarters, speed of obtaining and furnishing information being deemed much more important than attempted artistic finish of maps.

Of about ninety-nine days allowed for instruction in engineering, between September 1 and May 31, fifty-six were devoted to practical work in this department; thus there was a full compliance with the spirit and the letter of the regulations requiring "not less than one-third of the total time available to be devoted to practical exercises." The text-books used in this department are the best available.

The chief of the department of engineering asks that another assistant be assigned to his department, absolutely necessary to enable him to properly supervise instruction. The officers on duty in this department are frequently called upon to perform engineering work for the post, as well as the school, in locating buildings, drainage, etc., and making maps and drawings for use in the public service. He also asks for the employment of a skilled draughtsman, competent for the above work at a salary not to exceed

\$1200 per year. These recommendations are approved and recommended for the welfare of the school.

During the past year the department of cavalry has been in charge of Captain William A. Rafferty, Sixth Cavalry.

The four troops of cavalry on duty here were used for the field maneuvers and problems, being placed from time to time under the command of student officers. In the first year there was studied and taught a course in "Seats and Saddles," "Bits and Bitting," and the hygiene of stables.

The infantry officers were instructed in veterinary hygiene, and kindred subjects, embracing the age of horses, conformation, inspection before purchase, construction of stables, ventilation, grooming, nursing of sick animals, inspection of forage, watering, feeding and shoeing.

The second year the cavalry officers only formed the section in hypology, as it was deemed advisable that they should be fully instructed in everything that related to the care and treatment, in sickness and health of the animals, upon the perfect condition of which depends their utility of their arm in war.

In this course there were thirty-six recitations and four lectures, which were supplemented by post-mortem examinations of horses dying of disease, the examination of diseased and injured animals, practical inspection of sound and unsound horses, with lectures delivered by the school veterinary surgeon, Dr. Lemay, upon subjects which could be illustrated by the sick and diseased animals in the cavalry squadron.

It is believed that such a knowledge of anatomy, physiology, hygiene, and veterinary medicine was imparted to the student officers as will hereafter, without claiming to be regular veterinarians, enable

them to treat intelligently and successfully such injuries and diseases as may occur in their command.

In the course of hygiene, Major A. A. Woodhull, U. S. Army, post surgeon, delivered to the class twelve lectures upon the following subjects, viz: The importance of properly selected recruits and the method of their selection; the clothing of soldiers, their food, its relative value and preparation, including scurvey and its prevention; the selection of camps and permanent posts, with special reference to the soil and site; the management of marches, and the sanitary arrangements and care of camps, barracks, and quarters, with special reference to ventilation; the disposition of sewage and other wastes, including water-closets and their attachments; water and water supply.

A course of four lectures was also given by Captain W. O. Owen, assistant surgeon, U. S. Army, upon "Early Aid to the Injured."

Ten recitations upon the main and two upon the supplementary course were held. A portion of these lectures was delivered last December, and the remainder upon Saturdays in April and May of this year. There is no text-book on military hygiene for line officers, and the students were entirely dependent upon such notes as they could take during the lectures.

The curriculum in use at the school and the practical work taken from it has proved in the main satisfactory.

The study of the drill book for cavalry and infantry, including the school of the battalion, will not be taught in the school in future, and time heretofore devoted thus will be utilized for more important studies. The officers of the next class will be examined upon the subject previous to their entering the school.

Winthrop's Military Law was taught to the entire class during the first year in thirty-six lessons, one and a half hours duration each. The instruction of constitutional law was imparted by fixed lessons, memorized from Cooley's text-book on the Constitution of the United States. These recitations were held three times a week, one and a half hours each. The course consisted of thirty-six lessons. International law was taught by same methods from Davis' text-book, giving thirty-four lessons. From this it will be seen that the department of law has carried the last class of student officers through one hundred and six recitations of one hundred and fifty-nine hours.

It is doubtful whether law should occupy such a considerable space in the limited time assigned for school work, and it is believed that by approximating to methods followed at the large colleges of our country more satisfactory results may be reached. It is recommended that international law be omitted from the curriculum and military and constitutional law be taught by a system of lectures carefully prepared by the instructors.

The Infantry and Cavalry School has been in existence eight years, and I am able to report, and truthfully, that rapid progress in usefulness has been made in the few years past, and that the school has still such a growth that will commend it to our government in such a way that liberal appropriations may be extended to it.

There are many necessities; much to be done. There are no rooms at the school for models or modeling in bad weather; the recitation rooms are small? and the academic building badly constructed, no giving sufficient wall space for maps, etc.

The quarters for student officers are still inconvenient, uncomfortable, and too limited in quantity.

The new quarters for officers now in course of construction will not much more than accommodate the additional officers ordered as instructors at the school. It is recommended that arrangements be made here for accommodation of double the number of student officers now sent here. The seventy officers, as proposed, could be instructed with but little more care and labor on the part of the instructors and their assistants. By this plan much good could be gained for the Army at a minimum of expense.

During the past year letters have been received from persons of rank and influence in the national guard of States making inquiry of conditions that representatives from their organizations could enter the infantry and cavalry school for instruction. This would necessitate legislation by Congress, but would it not be a great good thing to associate the junior officers of the Army with a like number from the national guards of states at this military institution, and then go together with head, heart, and hand, through the curriculum of this school, supplemented with the advantages to be gained by the practical military work performed here? With but few exceptions the late graduating class acquitted itself well, yet there should be greater incentives to study, and a quick remedy applied to idlers who do not.

The curriculum for the infantry and cavalry school is not a difficult one. By application and study it can be mastered by men of ordinary intellect and education, yet 'tis one of such varied usefulness to the military student that no officer, however able, can pass the stated examinations without attention and study; surely, without the latter nothing but humiliation, and perhaps disgrace, awaits the delinquent.

For the better understanding of the work done at the school, I have printed a few copies of the subjects and questions given out by instructors at the annual

examinations. The important subject of hygiene was omitted on account of time designated for preparation. Three copies of this publication are respectfully submitted with this report.

The success attained in this school for the past two years is mostly due to the ability, zeal and devotion to their duties of the instructors and their assistants in charge of the different departments.

I am, very respectfully, your obedient servant,

A. McD. McCOOK,

Colonel Sixth Infantry, Brevet Major General,

U. S. Army, Commandant.

The Adjutant General, U. S. Army,

Washington, D. C.