

ANNUAL REPORT

OF THE

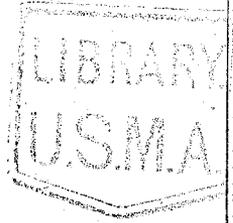
SUPERINTENDENT

OF THE

UNITED STATES MILITARY ACADEMY.

1891.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1891.



Academy

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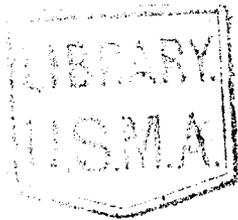
OF THE

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ANNUAL REPORT
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SUPERINTENDENT OF THE U. S. MILITARY ACADEMY.

HEADQUARTERS U. S. MILITARY ACADEMY,
West Point, N. Y., September 1, 1891.

GENERAL: As Superintendent of the U. S. Military Academy I have the honor to submit the following report for the year ending August 31, 1891:

The number of officers and instructors stationed at this post on September 1, 1891, was as follows: Eight professors, 55 commissioned officers, including 1 surgeon and 1 assistant surgeon, 1 acting assistant surgeon, 1 swordmaster, and 1 teacher of music.

THE CORPS OF CADETS.

Up to June, 1891, under the terms of section 1315, Revised Statutes, the maximum number of cadets authorized was 347.

As a general rule the number of cadets at the Academy seldom exceeds 300, and on May 31, 1891, it was only 278; 17 of whom were pronounced deficient at the June examination and were discharged.

It will therefore be observed that on June 1, 1891, the corps lacked 20 per cent. of the number authorized by law.

On September 1, 1891, with the new fourth class, consisting of 103 cadets, the corps numbered 287, or about 17 per cent. less than the maximum authorized under the apportionment based upon the census of 1880.

These losses are due to resignations and to discharges based upon failures at examinations.

Under the new apportionment, based upon the last census, the maximum number of cadets authorized will be 371.

I am of the opinion that a further moderate increase of the corps will be advantageous, believing that our plant is amply sufficient to turn out a larger number of graduates each year.

Such increase should be gradual, and I would suggest at first simply restoring to the President of the United States the privilege of appointing 10 cadets each year, of which privilege he was deprived by the terms of the act of June 11, 1878.

Should this be done, the maximum number of cadets authorized would be 401, and estimating the same percentage of vacancies as now exist, the Academy would probably be able to send out to the country from 70 to 80 graduates every year.

+56

With 401 cadets on duty, all that would be required would be the detail of a few more officers as instructors and the erection of additional quarters for their accommodation.

On September 1, 1890, there were 289 cadets connected with the Military Academy. Since that date the loss has been 9 by resignation, 25 by discharge, and 65 by graduation. The gain has been 97 admitted as new cadets, making a present total of 287 belonging to the corps, one of whom was admitted September 1, 1891. This number includes one cadet from Switzerland, and one from Central America, who are receiving instruction at the Academy by authority of joint resolutions of Congress.

In my last annual report I expressed the opinion that the medical examination of candidates should be completed before they reported at West Point.

After a close and careful study of the institution for two years, I feel assured that both the mental and physical examinations can be conducted without difficulty before the arrival of the young gentlemen at the Academy.

I therefore respectfully recommend that candidates be required to report for physical examination to the nearest medical officer of the Army immediately after receiving their letters of appointment, and should they be pronounced physically disqualified for military duty their appointments can at once be revoked, and they will be spared further expense and mortification; should they be *pronounced qualified* they should be admitted *without further physical examination*, provided they pass the mental tests.

I recommend that upon the first Wednesday in April of each year candidates throughout the United States who have letters of appointment be required to appear for mental examination at certain geographical centers throughout the country, such as Portland, Boston, New York, Philadelphia, Pittsburg, Washington, Richmond, Charleston, Atlanta, Mobile, New Orleans, San Antonio, Memphis, Louisville, St. Louis, St. Paul, Chicago, Omaha, Denver, Cheyenne, Helena, Salt Lake City, San Francisco, Portland, Seattle, and such other prominent places as the Secretary of War shall indicate.

These mental examinations should be held under the direction of the Academic Board of the U. S. Military Academy, and if necessary members of the Board can be detailed to be present at the more important points.

The questions should be prepared here by the Academic Board, and the examinations conducted in writing, under the immediate supervision of army officers, acting simply as monitors.

Each candidate should receive a number, and such number, without his name, should appear upon his examination papers.

The names, with the numbers, should at once be sent by the officer in charge to the War Department, while the examination papers with numbers only should be sent to the Superintendent of the Military Academy for the action of the Academic Board.

The Board, after carefully considering all the papers, can at once determine which are satisfactory, and the Adjutant-General can be immediately informed of the numbers of the successful candidates.

Appointments in place of those who may have failed at this examination can be made without delay; and these additional candidates, who will be few in number, can be promptly examined by the Academic Board as soon as they report in June.

I believe the foregoing plan can be easily carried out and will be

greatly to the advantage of the candidates, who, upon their arrival here, are always placed at more or less disadvantage on account of their surroundings, their absence from home, and being entirely unaccustomed to the rules and methods of discipline to which they are necessarily at once subjected.

During the past year the condition of the corps of cadets as regards drill, discipline, and instruction has been excellent; there has not been a single offense brought to the knowledge of the authorities which has received the severe punishment of dismissal or suspension. As a rule the young gentlemen seem to appreciate the privilege extended to them by the country, and to be ready to aid the distinguished professors and officers in charge of departments and their accomplished assistants in maintaining the splendid reputation for instruction, discipline and drill for which West Point is so justly noted.

DEPARTMENT OF TACTICS.

Attention is respectfully invited to the report of Lieut. Col. H. S. Hawkins, Twenty-third Infantry, Commandant of Cadets, submitted herewith.

During the past 12 months instruction has been given in artillery, infantry, and cavalry drill; in target practice with seacoast guns, mortars, breech-loading field guns and small arms; in fencing with sword and bayonet; in gymnastics and swimming; in military police and discipline, and in quartermaster, subsistence, and company administration.

Advantage was taken of the unusually clear weather in the spring of 1891, to give practical instruction in the duties of advance guard, rear guard, outpost, and reconnoissance.

THE WEST POINT OBSERVATORY.

There is an excellent observatory connected with the U. S. Military Academy, which I believe can be advantageously used in connection with a post graduate course for young officers in the practical determination of time, latitude, longitude, and the meridian.

This observatory, under the direction of Prof. P. S. Michie, of the Department of Philosophy, is in the immediate charge of First Lieut. F. S. Harlow, First Artillery, a most efficient officer, thoroughly capable of conducting the instruction of any reasonable number of young officers of the Army.

The fixed instruments in the building are as follows: One 12-inch telescope by Alvan Clark & Son; one 7-inch Repsold transit circle.

The following portable instruments are mounted in the field observatory: One zenith telescope; one field transit; one altitude and azimuth instrument.

In addition to the above mentioned instruments there are a number of excellent sextants, manufactured by Stackpole.

At present the cadets take a course in practical astronomy during their first class encampment.

If two or three officers of the Army were ordered here annually to receive instructions at the Observatory for a period of about 9 months, they would then be available for general explorations and surveys, for surveys in military departments, for determining boundary lines between States, and for other work of a like character.

I commend this subject to the consideration of the Secretary of War, and suggest that during the coming year two young officers be ordered here to take the course in practical astronomy.

Owing to the lack of quarters, unmarried officers only should be sent here for the present.

THE DEPARTMENTS OF LAW AND OF ORDNANCE AND GUNNERY.

Section 1309 of the Revised Statutes provides for assistant professors in all the academic departments of instruction except those of law and of ordnance and gunnery, while section 1337 of the Revised Statutes provides that each assistant professor shall receive the pay of a captain.

The department of languages has two assistant professors, one of French, the other of Spanish.

The importance of the departments of law and of ordnance is so fully recognized that it seems unjust to the first assistants in each that they should not be accorded the same pay now received by officers occupying similar positions in other departments.

I therefore respectfully recommend that the senior assistants in these two departments shall hereafter be known as the assistant professor of law and assistant instructor in ordnance and gunnery, and that they shall receive the same pay and emoluments now authorized by law for the assistant professors in other academic departments.

MASTER OF THE SWORD AND SWIMMING.

I again invite attention to the recommendation submitted in my last annual report and in the report of the Board of Visitors for 1889 in regard to the faithful, efficient, and capable sword master, Mr. H. J. Koehler.

It is earnestly recommended that the following item shall be added to the Military Academy appropriation bill :

Provided, That from and after the passage of this act the master of the sword at the United States Military Academy shall have the rank and receive the pay and emoluments of a first lieutenant of infantry.

Mr. Koehler, who at present occupies the position of sword master, performs also the duties of instructor in gymnastics and swimming. He is faithful, energetic, and remarkably well qualified, both physically and intellectually, for his important work.

During the past six years he has worked up a system of gymnastics for the Corps of Cadets, which by its results has challenged the admiration of the members of the Boards of Visitors, and others who have been present at the annual exercises in June.

PHYSICAL TRAINING AND INSTRUCTION IN MILITARY GYMNASTICS.

Physical training by calisthenic exercises forms a part of the academic curriculum. These exercises are required in the gymnasium between October 1 and May 31 of the cadet's first year at the Academy, but are afterwards voluntary. During the second, third, and fourth years of cadet life they are continued in the riding hall, in exercises in the school of the soldier mounted.

Besides military drills and calisthenic exercises, cadets receive instruction in military gymnastics. These gymnastics may be defined as such simple exercises and combinations of exercises, arranged progressively,

as tend to develop muscular strength, activity, grace and agility, and in which the danger of overexertion and injury is reduced to a minimum. They are performed by a number of cadets simultaneously, each exercise or portion thereof being executed at command. They embrace exercises on the usual gymnastic apparatus, the clubs, dumb-bells, the various wands and iron bars, calisthenics, running, jumping, gymnastic contests, etc.

Besides these, instruction is given in fencing with foil, broadsword and bayonet, and in swimming; during the months of July and August instruction is given in dancing.

The present system of gymnastics was introduced in 1885, and has been gradually improved.

The physical measurements and tests show marked average gains at the end of the first year's work, in weight, wrist measurement, forearm measurement, upper arm extended, and also with biceps set, chest inflated and normal, and in tests with horizontal bar, parallel bars, and broad jump. The average duration of each lesson to the fourth class is 45 minutes.

Occasional sprained ankles are about the only accidents occurring during exercises in the gymnasium; about 3 years ago a cadet, while exercising "at will," attempted a feat not included in the regular course and broke his arm.

When we consider that the fourth class averages annually about 100 cadets, thus making 600 since 1885 who have received instruction for 8 months annually and executing during this period about twenty exercises daily, we find a grand total of about 1,200,000 exercises since 1885 without an instance of serious injury or accident. We are thus confronted with a marvelous record, the correctness of which is shown by the hospital books.

To one unacquainted with the physical training cadets receive, the foregoing gives but a faint impression of its value and thoroughness.

INSTRUCTION IN MILITARY HYGIENE.

During the present academic year it is proposed to have a course of lectures delivered to the fourth class by the post surgeon, upon the subject of military hygiene.

U. S. MILITARY ACADEMY BAND.

During the past year the band has performed all of its duties to my satisfaction, and its improvement both in music and discipline has been so marked as to invite most favorable comments.

By the act of March 3, 1875, the Military Academy Band consisted of 1 teacher of music and 40 enlisted musicians; of the latter, 10 received \$34 per month, and the remaining 30 received \$30 per month, together with the usual allowances of enlisted men.

By the act of March 3, 1877, the band was reduced to 1 teacher of music and 24 enlisted men, 6 of whom receive \$34 per month, 6 \$20 per month, and the remaining 12 \$17 per month, with the usual allowances of enlisted men.

This is the present status of the band, and I earnestly invite attention to the appeals annually made in the reports of the Boards of Visitors and by the Superintendent of the Military Academy for its improvement.

The teacher of music, Mr. Arthur A. Clappé, is a man of eminent musical talent, earnest, and conscientious, and has devoted every mo-

ment of his time to the important work of bringing the band up to its present excellent condition; I commend him for the faithful and intelligent manner in which he has performed his laborious duties, and I earnestly recommend that he shall receive promotion to the grade of a second lieutenant; should this be refused, then I recommend that his salary be increased from \$1,080 to \$1,500 per annum, a sum he richly deserves on account of his important work.

Many of the members of the band are excellent musicians and men with families, and as they improve in their profession and see their children growing up around them it is natural that the temptation to better their condition in life should affect them, and that they should not only decline to reënlist, but often endeavor to obtain their discharge from the service of the United States.

This subject was thoroughly investigated by the Committee on Military Affairs of the House of Representatives in 1890, as will be seen by House Report No. 2627 of the first session of the Fifty-first Congress.

It is earnestly hoped that during the coming session of Congress the condition of the band will be improved, and in case of its reorganization I recommend that hereafter it shall be constituted as follows: One teacher of music, who shall have the rank, pay, and emoluments of a second lieutenant so long as he shall remain such teacher of music; 1 drum-major, with the rank, pay, and emoluments of a sergeant of engineers; 30 musicians, 15 of whom shall be known as first-class musicians, with pay of \$34 per month; and 15 as second-class musicians, with pay of \$24 per month; all to have the same allowance of clothing, rations, and quarters as now authorized by law.

In view of the importance of the U. S. Military Academy and the number of distinguished guests both from at home and abroad who annually visit West Point, I earnestly hope that Congress will give this subject favorable consideration.

THE ARTILLERY OF THE POST.

I respectfully invite attention to my report of September 8, 1890, wherein I gave a full description of the artillery of this post.

The condition to-day remains exactly the same. We still have but one field battery of 3.2 steel rifled breech-loading guns, and it is necessary to drill the fourth class with the old obsolete 3-inch muzzle-loaders, which will probably never again be used in action.

The same old 4½-inch muzzle-loading guns remain at the siege battery, and the cadets must still use them for drill; with probably an unwritten history, that could tell of sieges and camps of over a quarter of a century ago, all that seems to be known of them is, that they were the best of a lot on hand at the New York Arsenal, sent there from the Washington Arsenal some years ago.

In view of the fact that during the past few years three of the old-fashioned siege guns have burst at this battery, I directed that those now on hand should not again be fired, believing that it would be criminal on my part to endanger unnecessarily the lives of cadets by practicing with these old and obsolete pieces.

At the seacoast battery the conditions reported in 1890 remain unchanged, and I repeat the language of the accomplished senior instructor of artillery drill regulations, First Lieut. J. D. C. Hoskins, Third Artillery, who describes it as follows:

At the seacoast battery the cadets use 3 8-inch muzzle-loading rifles (converted 10-inch smoothbore Rodman guns), 2 15-inch smoothbore Rodman guns, and one 13-inch mortar.

No two pieces in this battery are mounted on carriages of the same pattern, which fact renders a uniform system of instruction impossible.

For effective work here guns of the same class should be mounted upon modern carriages, uniform in construction.

In the interest of the Academy, in the interest of the country for which our cadets are being educated, I beg that these matters shall not be thrust aside, and I ask that we may be supplied with an armament that will be a credit to the institution and give us the means of properly instructing the young gentlemen whom we send out, at least with a solid foundation upon which to build the character of accomplished soldiers.

MEN AND HORSES FOR LIGHT BATTERY.

I repeat the recommendations made in my last annual report, that the light battery be placed upon an independent footing; that a detachment of not less than 30 artillery soldiers be ordered here for duty with the batteries, and that 50 strong draft horses be supplied for this particular purpose, relieving the light cavalry horses from the duty which utterly unfits them for their legitimate work.

COMPANY E, BATTALION OF ENGINEERS.

This company maintains the same high character for drill, discipline, and efficiency accorded it in my last annual report.

While it has quite a number of excellent old soldiers, the majority of the men are quite young and frequently chafe under the restraints of discipline; this has caused a number of cases for the summary court and two for general courts, while two men have deserted during the year.

The company has charge of the repair and preservation of all forts and batteries and of the pontoon train, and assists in the instruction of the Corps of Cadets in practical military engineering and signaling. The officers are indefatigable in their efforts to improve the welfare, drill, and discipline of the company. The buildings occupied as quarters and for shops and storehouses are models of neatness.

THE CAVALRY DETACHMENT AND HORSES.

At present there are eighty-five horses available for light artillery and cavalry drill. Thirty-five new ones were received during the year; but, in spite of the earnest and faithful efforts of the Quartermaster's Department to select the best possible animals, as a rule the horses were either ill upon their arrival or were taken sick shortly thereafter. The diseases were generally the result of severe colds caught while the animals were on the cars, and three died within a few weeks after they reached West Point.

I can only repeat the statement made in my last annual report, that there should be separate detachments of horses for artillery and cavalry drill, the cavalry horses generally being too light for hauling the heavy fieldpieces and caissons.

During the year the cavalry detachment, which has a maximum strength of 68 men, has improved in drill and discipline; the troopers now being fully armed and equipped, and being drilled both on foot and on horseback whenever time can be spared from the regular duties for which they were enlisted.

As a rule the men are faithful and diligent in the discharge of their duties. It is anticipated that their new barracks near the riding hall will be completed during the present calendar year.

THE DETACHMENT OF ARMY SERVICE MEN IN THE QUARTERMASTER'S DEPARTMENT.

A description of this detachment and the necessity for its service was given in my last annual report.

The men are not soldiers in the ordinary acceptation of the term, but are clerks, overseers, mechanics, watchmen, janitors, and laborers. They are neither armed, drilled, nor equipped as soldiers; while authorized to wear the undress uniform of an artillery soldier when not at work, they are required to appear in fatigue costume whenever doing duty as mechanics or laborers.

With but very few exceptions the men have been earnest, faithful, and industrious in the discharge of their varied duties during the year.

NEW BUILDINGS IN PROGRESS.

During the past year there has been an unusual amount of building in progress.

The new gymnasium, which was commenced in June, 1890, under contract with Mr. John Sheehan, has progressed slowly; the walls are up and the greater part of the iron-roof trusses are in position.

On August 14, 1891, the contractor suspended work and declined to complete his contract, giving as a reason the difficulty he had in satisfying the architect, Mr. R. M. Hunt, whose decision, under the contract, "is final upon all questions concerning workmanship and materials."

It is very much to be regretted that the contractor concluded to take this step, as it will greatly delay the progress of the work, and result in all the usual anxieties and annoyances not only to the United States but to the contractor and his bondsmen incident to taking up for completion an important structure the contract for which has been abandoned.

The old academic building has been torn down, and the foundation trenches for the new building for which provision was made in the act of March 2, 1889, have been commenced under contract with Messrs. J. E. and A. L. Pennock, of Philadelphia, Pa.

The plans and specifications for these buildings were prepared by that eminent architect Mr. Richard M. Hunt, of New York, and the work is carried on under his supervision.

It is not anticipated that the new academic building will be completed before August, 1893.

Five sets of officers' quarters have been in progress of construction, 2 of which are nearly ready for occupancy; the other 3 will probably be completed by the coming spring.

The soldiers' hospital, located on high ground, upon the site of the former cavalry garden, is well advanced, being now under cover; the same may be said of the new cavalry barracks, located on the river bank near the riding hall.

The band practice building and the watchman's house, on the south dock, have been completed and are ready for occupancy.

Thirty sets of quarters for married enlisted men have been in progress of construction during the year; of these, 10 sets are about completed and the remaining 20 sets are well advanced, and will probably be finished and ready for occupancy during the winter.

SURVEY

OF THE

Boundary Lines

OF THE

U.S. MILITARY RESERVATION

at

West Point, N.Y.

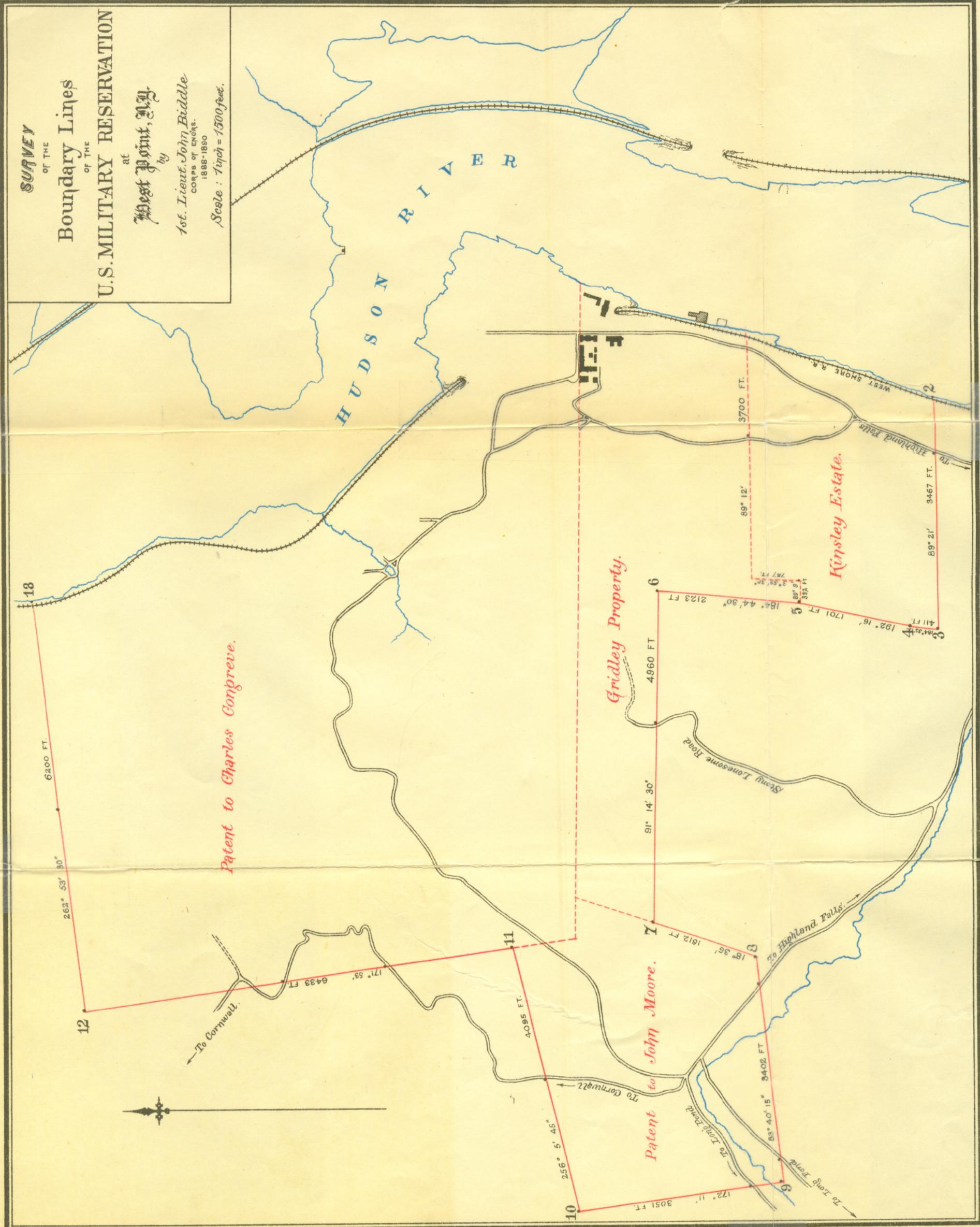
by

1st. Lieut. John Biddle

CORPS OF ENGRS.

1888-1890

Scale : 1 inch = 1500 feet.



SURVEY OF THE RESERVATION.

The work of rerunning and marking the boundary lines of the reservation has been completed, and attention is invited to the report and map submitted by First Lieut. John Biddle, Corps of Engineers, which is transmitted herewith.

Lieutenant Biddle has located the corners, measured the boundary lines, and determined their azimuths by connecting with a secondary triangle of the U. S. Coast and Geodetic Survey; he has surveyed the boundary lines of the Kinsley addition, replaced stone monuments at corners of reservation by old iron guns sunk in the ground to their trunnions, and has completed a slashing about 20 feet wide around the entire reservation.

THE KINSLEY MANSION.

This old building has been partially repaired during the year, but the lack of gas, water, or furnace facilities and its distance from the cadet barracks renders it very inconvenient for officers quarters.

In view of the demand for more hotel privileges on the post, I recommend that authority be obtained from Congress to rent the building and 5 or 10 acres of ground immediately around it for hotel purposes for a term of 5 or 10 years, under such rules and regulations as may be prepared or approved by the Secretary of War; this would save the United States from the expense of repairing and maintaining in good order this old house and the grounds immediately around it.

THE WEST POINT HOTEL AND WEST POINT STABLES.

The West Point Hotel was erected during the administration of Col. Sylvanus Thayer, Corps of Engineers, between the years 1824 and 1833, at a cost of about \$16,000; since the latter date it has been enlarged and repaired from time to time, so that the total expense connected with it, including insurance, has been about \$50,000; all of which has been paid from what has been known as the post contingent fund.

Up to the summer of 1887 the control of the hotel was exclusively under the Superintendent, who had the power of leasing it to such party as in his judgment would manage it in the best manner for the following special objects:

(1) For the accommodation of the Board of Visitors to the United States Military Academy and of officers of the Government making tours of inspections to the post.

(2) For the accommodation of the parents and guardians of cadets and persons visiting West Point.

(3) For the accommodation of officers on duty at the Military Academy with quarters when the same, in the opinion of the Superintendent, was necessary.

Rent was received from time to time from the year 1830 and credited to the post contingent fund, the sum varying from \$900 per annum in 1830 to \$3,334 in 1856, then being reduced to \$2,000 until 1864, when it gradually increased until it reached its maximum, \$4,583, in 1867. From 1868 to 1887 it varied, being as high as \$4,000 some years and finally down to \$1,500 in 1887.

By direction of the Secretary of War in 1887 the lease of the hotel was opened to competition, and in November of that year it was rented for 5 years to Mr. A. H. Craney, the highest responsible bidder, at an annual rental of \$3,500, the lessee to make annual repairs not to exceed

in value \$500. This lease I found on record when I assumed command in August, 1889; it does not expire until November 1, 1892.

The lessee came to me in the autumn of 1889, pronounced the rental required to be excessive, and asked a reduction; it was not in my power to grant his request, as the lease had been based upon his proposal and had been approved by the Secretary of War; no further action in the matter, so far as I am aware, has been taken by the lessee.

During the season of the examination and graduating exercises in June the hotel is crowded to so great an extent that more or less discomfort necessarily ensues.

A copy of the regulations governing the lease, upon which proposals for renting the hotel were based, is submitted herewith.

As the hotel is practically without guests for about 8 months of the year, the rental paid appears to me to be excessive, but it was the result of competition; future leases, in my opinion, should be made by the Superintendent with the approval of the Secretary of War, and should be worded in such manner as to fully protect the interests of the United States, the Military Academy, and the officers and other guests who may be residing at the hotel.

The contingent fund accruing from rents, etc., is properly accounted for by abstracts and vouchers, submitted to the Secretary of War in accordance with the terms of the act of Congress approved May 1, 1888.

THE PUBLIC STABLE.

The public stable was erected in 1855, and has been repaired from time to time at a total expense of about \$2,000.

It was very necessary that there should be some means of transportation from the docks to the plain and the hotel, and that visitors could be able to obtain vehicles when desired for riding over the reservation.

The stable, with the exclusive privilege of furnishing carriages and horses, was leased in 1865 for \$150 per annum, and has been continued from that date; the annual rental varying from \$500 to \$100, at which nominal sum it is at present.

Up to 1887 the matter was under the complete control of the Superintendent, but in that year, *by direction of the Secretary of War*, it was opened to competition and leased to Mr. John Denton, the highest responsible bidder, for the term of 5 years, with the exclusive privilege of hiring carriages and horses to guests of the post.

In 1890, Mr. Denton being desirous of retiring from business, was authorized to transfer his interests to Messrs. Drew & Mandigo, who now hold the lease which will expire November 1, 1892.

A copy of the regulations governing the lease of the stable is transmitted herewith, together with the tariff of prices, approved when the lease was made.

It must be remembered that there are few calls for vehicles except during the summer, and that between October 15 and May 15, a period of 7 months, the lessee of the stables has comparatively little patronage, but must maintain his establishment, care for his horses, and have suitable vehicles at the depots to meet all the trains arriving between the hours of 8 a. m. and 9 p. m., daily.

When the lease is renewed in 1892 it should be worded in such manner as to carefully protect the interests of the Military Academy and the guests of the post. In the mean time I recommend that Congress be requested to make the necessary appropriation for a carriage and an omnibus for the use of the members of the Board of Visitors during their annual visits to the Military Academy.

THE CEMETERY.

The West Point cemetery now contains an area of about 14 acres, more than one-half of which is still only partially improved.

The old cemetery, which contains the remains of officers, cadets, soldiers, and resident civilians who have died in past years, is also honored with being the final resting place on earth of some of the most distinguished soldiers of the Republic.

As the cemetery was being rapidly filled, I extended its limits in 1890 so as to take in the adjacent ground occupied in years past as a cadet garden. This new addition is now being laid out to correspond with the beauty of the remainder of the cemetery, and it is earnestly hoped that Congress will appropriate the sum of \$1,500 for the continuance of the work of enlarging and beautifying this home for the remains of the honored dead.

SEWERAGE AND PLUMBING.

By the act of Congress approved March 2, 1891, an appropriation of \$15,000 was made for necessary repair of and for improving the plumbing and sewerage system at West Point, N. Y., and putting the same in a sanitary condition to be expended under the joint direction of the superintendent, the surgeon, and the post quartermaster.

In anticipation of the passage of the appropriation bill, I convened a board in January, 1891, upon the subject of sewerage and plumbing, consisting of Lieut. Col. James Mercer, professor of engineering; Maj. Henry McElderry, surgeon U. S. Army, post surgeon; Capt. William H. Miller, assistant quartermaster, post quartermaster; and First Lieut. John A. Lundeen, Fourth Artillery.

This board gave the subject the most thoughtful and serious consideration, making a thorough examination of the general system of sewerage and plumbing, and in March, 1891, submitted an exhaustive report with recommendations for certain much-needed improvements; after a careful examination of this report, which I held under consideration for several days, I approved it fully, and it thus constituted the views of the three officers indicated in the law.

Operations were commenced early in July, 1891, upon the general plumbing of the Post, which had been found to be seriously defective, and orders were given for the introduction of the modern system as far as possible, and for such improvement of the sewerage as the funds available would admit.

All materials were purchased under contract as far as practicable, after due advertisement. The work is being done by hired labor, a first-class sanitary expert plumber having been employed as foreman, and a number of skilled plumbers placed under his immediate order. The work is progressing as rapidly as the means at our command will admit.

As the original estimate for renovating present plumbing and sewerage was \$33,000, it is earnestly hoped that Congress will this year appropriate the necessary sum (\$18,000) to complete the work which is so very important to the health of this large command.

The following statement shows the number, length, dimensions and general location of the main drains, the general style of auxiliary drains, and the location of the sewers at West Point, N. Y.

Designation.	Main drains.		Auxiliary drains.		Kind.
	Length.	Size.	Length.	Size.	
	<i>Feet.</i>	<i>Inches.</i>	<i>Feet.</i>	<i>Inches.</i>	
Southern sewer.....	160	8	.....	.....	Round earthen-pipe.
	440	10	.....	.....	Do.
	1,037	15	.....	.....	Do.
	1,637	.....	.....	.....
First branch.....	.....	.....	350	8	Do.
	.....	.....	300	10	Do.
	.....	.....	975	15	Do.
	.....	.....	1,625	.....
Second branch.....	.....	.....	730	.....	Size 2 by 2 feet by 6 inches. Brick.
Central sewer.....	2,725	12	.....	.....	Round earthen-pipe.
First branch.....	.....	.....	600	8	Do.
Second branch.....	.....	.....	650	8	Do.
Northwestern sewer.....	1,650	10	.....	.....	Do.
First branch.....	.....	.....	350	10	Do.
Second branch.....	.....	.....	415	6	Do.
Northern sewer.....	860	10	.....	.....	Do.
First branch.....	.....	.....	650	8	Do.
Second branch.....	.....	.....	330	8	Do.
Sewer No. 1.....	787	4	.....	.....	Do.
Sewer No. 2.....	671	10	.....	.....	Do.
Sewer No. 3.....	350	8	.....	.....	Do.

LOCATION OF SEWERS.

Southern sewer.—Commences in rear of quarters No. 17, and runs south in rear of quarters Nos. 15, 13, and 7, thence to road in front of Cadet Barracks, thence south in rear of Academic Building, thence between Academic Building and Grant Hall across main road to stone steps on side of hill, thence to river, 250 feet south of the West Shore tunnel.

Central sewer.—Commences in rear of quarters Nos. 41 and 43, and runs in rear of quarters Nos. 39, 37, 35, 33, and 31, and in front of quarters No. 29, thence across road to southeast corner of laboratory, thence to river at a point 225 feet east of the north wharf.

Northwestern sewer.—Commences at quarters No. 51, and runs due north to river.

Northern sewer.—Commences in rear of band barracks, thence to river.

Sewer No. 1.—Commences at Denton's store, thence to river.

Sewer No. 2.—Commences at hotel, thence to river.

Sewer No. 3.—Commences at cadet sinks (in camp), thence to river.

EXTENSION OF GAS PLANT AND METHOD OF LIGHTING CADET BARRACKS.

During past years great complaint has been made of the character of light furnished cadets for studying at night, and in my last annual report I submitted a plan and estimate for a complete electric light and power plant for this post.

This plan did not meet with favorable consideration and no action was taken upon my recommendation.

During the past year the post surgeon has recommended the use of glasses for studying in a number of cases of cadets, and at the medical examination of the graduating class in June, the surgeons informed me that the eyes of nearly every graduate were more or less congested; 19 of the young gentlemen failed to come up to the requirements of the War Department as to vision, and 6 failed to read the test type at

three-fourths of the required distance. In every instance the young gentlemen claimed that the difficulty had commenced since they entered the Military Academy.

The gas furnished for the use of the post is reported by the professor of chemistry, who tests it frequently, as of excellent quality; owing to some bad coal furnished by the contractor, it contained more or less sulphur on two or three occasions during the year.

The gas jet used in barracks is what is known as the bat-wing burner, placed upon an arm 10 inches long, projecting directly from the side wall of the room and over the table. Two cadets, one on each side of the table, study by this light, which not only is of insufficient power, but gives out so much heat near the head of the student as to be exceedingly uncomfortable.

In order to furnish a better light I propose to increase the gas plant sufficiently to furnish a full supply for all buildings on the post and to place in every room in barracks a plain iron chandelier with two arms and a slide drop light. This chandelier will be in the centre of the ceiling, immediately over the table, so that the cadets can study without difficulty.

An estimate of \$48,000 is submitted for the purpose of carrying out this plan, and I earnestly urge that an appropriation be made for this very important and, I may say, almost absolutely necessary improvement.

HEALTH OF THE COMMAND.

Attention is invited to the report of the post surgeon, submitted herewith.

The general health of the command has been unusually good during the past year; there have been no epidemics, and even the so called "Grippe," which prevailed in the vicinity, has not been felt here to any marked degree.

In the corps of cadets there was one case of pneumonia, one of traumatic cellulitis, and one of typhlitis, all of which were successfully treated by the very skillful surgeons at the post.

UNITED STATES COMMISSIONER AND DEPUTY UNITED STATES MARSHAL.

Owing to the large amount of building in progress and the number of mechanics and laborers necessarily on the post, it was deemed best by me that the civil authorities should be represented upon this military reservation.

At my request, Mr. H. J. Koehler, the master of the sword, was appointed United States commissioner, and Mr. Frank P. Bailey, a faithful and efficient employé of the quartermaster's department was appointed deputy United States marshal.

The presence of these two civil officers, both of whom live upon the post, will enable immediate action to be taken in case of felony or breach of the peace at West Point by any civilian temporarily upon the reservation.

THE BATTLE MONUMENT.

In my last annual report I mentioned the circumstances connected with the subscriptions raised in 1863 for the erection of a monument at West Point, N. Y., in memory of the officers and enlisted men of the regular army who were killed or died of wounds received in action during the war of the rebellion.

Competitive plans were invited from four firms of architects eminent in the profession, and in October, 1890, the designs submitted were examined by a committee consisting of the following-named gentlemen :

Mr. R. M. Hunt, architect, of New York City; Mr. Augustus St. Gaudens, sculptor, of New York City; Mr. Arthur Roatch, architect, of Boston; Col. P. S. Michie, professor of philosophy, U. S. Military Academy; Col. C. W. Larned, professor of drawing, U. S. Military Academy; Col. E. W. Bass, professor of mathematics, U. S. Military Academy; Lieut. Col. J. Mercur, professor of engineering, U. S. Military Academy.

This committee selected the design marked "Monolith," the motto of the firm of Messrs. McKim, Mead & White, of New York.

As stated by the professor of drawing, "the results of the competition were very gratifying and the merits of all the designs so conspicuous as to render final decision a matter of nice discrimination, based upon many considerations."

The description of the design selected, as given by the architects, is as follows :

In preparing the design we have most carefully considered the object of the monument and the site which it is to occupy.

We believe the monument should be first and foremost a martial one, distinctive in its character, and impressive in its design.

The beauty of its site and the surroundings seem to us to preclude any bulky or massive treatment and to suggest rather a treatment where the impression should be produced by height supported by a base which should not interfere with graceful and artistic treatment.

For this reason we have adopted as the feature of our design a single monolithic shaft treated in the shape of a memorial column or column of victory.

This form seems to us to be more distinctively martial than any other, and in this form we believe it is possible to obtain impressiveness and dignity without a sacrifice of grace, at the same time preserving a distinctively architectural and monumental character.

We lay great stress upon these two points, viz, the necessity of giving the monument a martial design, and the relation of the monument to its site.

In our design we have had these two points continually in mind, with results which you must judge.

The shaft is a monolith of polished granite, 41 feet 6 inches high and 5 feet 8 inches in diameter.

It is proposed to surmount it with a figure of Victory, and surround it by eagles—a distinct mark of its national character.

The shaft rests upon a circular base, surrounded by flights of steps, giving the greatest breadth and dignity possible to the base.

The materials are most enduring—granite and bronze.

On July 28, 1891, a contract was made with the firm of Norcross Brothers, of Worcester, Mass., for the granite work and the necessary labor of placing the bronzes in position. Operations were at once commenced at the quarry at Stony Creek, Conn., getting out the enormous stone which is to form the main shaft. All the granite except the shaft will come from quarries at Milford, Mass.

It is hoped that the shaft can be hauled to the site during the coming winter, and that the monument will be completed during the autumn of 1892.

The site selected is on the plain north of Execution Hollow and about 100 yards southeast of Trophy Point.

The height of the monument when completed will be about 78 feet.

NEW BUILDING FOR SINKS AND BATH ROOMS FOR CADETS.

I beg to invite special attention to the necessity for modern improvements in the cadet sinks.

These sinks have been condemned by the post surgeon as in very bad sanitary condition, and demanding complete renovation and enlargement.

An estimate of \$28,000 is submitted for this purpose.

It is proposed to construct a two-story stone-faced, brick-lined building, 60 feet long and 40 feet wide. The lower story will contain 54 water closets and 60 urinal troughs, and the upper story 35 bath tubs.

This will enable us to remove the present bath rooms from basement of barracks.

The building will be heated by steam from the main boiler house.

I respectfully invite attention to the estimates submitted for the next fiscal year.

They have been carefully prepared under my personal supervision, and there is not a single item that is not deemed by me absolutely necessary for the welfare and prosperity of the Military Academy and the post of West Point, N. Y. I earnestly urge that these estimates may receive favorable consideration.

In conclusion, I can only repeat the closing words of my last annual report, and express my high appreciation of the earnest, faithful, and intelligent assistance I have received in the discharge of my official duties from the professors and other officers of the Academy, and my gratification at being able, at the end of my second year as Superintendent, to report the corps of cadets in excellent condition as regards health, discipline, drill, and instruction.

Very respectfully, your obedient servant,

JOHN M. WILSON,

Colonel of Engineers, Superintendent U. S. Military Academy.

The ADJUTANT-GENERAL, U. S. ARMY,

Washington, D. C.

HEADQUARTERS UNITED STATES CORPS OF CADETS,

West Point, N. Y., August 28, 1891.

The ADJUTANT U. S. MILITARY ACADEMY,

West Point, N. Y. :

SIR: I have the honor to report that during the preceding 12 months instruction has been given in the drill of the three arms, in target practice with small arms and breech-loading field guns, seacoast guns, and mortars, in mechanical maneuvers with field, siege, and seacoast guns, in fencing with small sword and bayonet, in gymnastics and swimming, in military police and discipline, and in quartermaster, subsistence, and company administration.

Owing to the unusual number of fine days in the spring, the customary drills in the school of the company and school of the battalion were completed much earlier than usual. Advantage was taken of this to give practical instruction in the duties of advance guard, rear guard, outpost, and reconnaissance; first in miniature, by the several companies on the plain, with a view to familiarizing the cadets with the theoretical disposition of a given small force, and afterward in the rough country west of the post, where the varying accidents of ground would alter the conditions of each exercise.

To develop interest and to make the operation more realistic, a portion of the available force was made to occupy a position as part of a system of outposts affording to a supposed main body the necessary security from surprise.

The opposing force, supposed to be the advance guard of an approaching column, was to discover the location and strength of these outposts, to turn the position and effect its capture, if it could be done without compromising the main column.

The cadets can be absent from barracks for only one hour on any one day for instruction in the field. Consequently it is not possible to proceed very far into new ground each day, and the practical problems that can be thus illustrated must be very few. Nevertheless the practice, even to this limited extent, is beneficial, and may assist a young officer in learning how to conduct a patrol at least.

The officers detailed as assistants in the tactical department have been most earnest in their efforts to maintain the excellent reputation of the corps of cadets, and its gratifying condition as to discipline and high honor is an attestation of their tact and judgment.

Very respectfully, your obedient servant.

H. S. HAWKINS,
Lieutenant-Colonel Twenty-third Infantry, Commandant of Cadets.

A true copy.

J. M. CARSON, JR.,
Second Lieutenant Fifth Cavalry, Adjutant.

Regulations governing the lease of the West Point Hotel, referred to in advertisement for proposals for lease of same, dated this office, June 24, 1887.

HEADQUARTERS U. S. MILITARY ACADEMY,
OFFICE OF THE TREASURER,
West Point, N. Y., June 24, 1887.

1. The lease will embrace the hotel, its fixtures, appurtenances, and grounds now inclosed about the same.

2. The hotel must be kept open and maintained all the year round in such style as is usual in hotels of the first class in the city of New York.

3. A bar will not be permitted in connection with the hotel, nor will liquors be disposed of excepting under such regulations as may be promulgated by the Superintendent of the Military Academy, approved by the Secretary of War. The sale of liquors of any description may be forbidden.

4. The continuance of the hotel has for its special objects: (1) The accommodation of the Board of Visitors to the United States Military Academy and officers of the Government making tours of inspection to the post. (2) The accommodation of the parents and guardians of cadets, and persons visiting West Point. (3) The accommodation of officers of the Army on duty at the Military Academy, with quarters when the same, in the opinion of the Superintendent, is necessary.

In pursuance of these special objects the lessee of the hotel will be required to assign the members of the Board of Visitors and other official visitors and their families the most desirable rooms in the hotel, and at a cost, including regular meals and service, but excluding extras, not to exceed \$3.50 per person per day, nor shall any guest be charged a per diem in excess of said sum for regular service.

5. The lessee will be required to purchase such of the valuable and essential property now in the hotel belonging to the present lessee on terms which may be agreed upon by the two named interested parties. Should they fail to come to an agreement, each will select a disinterested person to determine the value of such property and questions arising in connection therewith, and should these two persons be unable to come to an agreement they shall select a third party to the arbitration, and the decision of a majority of the three persons so chosen shall be final and binding on all interested parties.

6. The annual rent of the hotel will be paid in proportional quarterly installments in advance.

7. The lessee will be required to pay the cost of repairs on the hotel, but in complying with this regulation he shall not be required to expend annually a sum greater than \$500. The repairs necessary will be determined by a board of three officers convened by the Superintendent of the Military Academy during the first week of March in each year.

8. The lessee shall have no claim upon the Government for any improvements he may make by permission of the Superintendent, or for repairs referred to in paragraph 7.

9. The lessee will bind himself to observe and cause to be observed all the regulations and rules now established or that may hereafter be promulgated in relation to the hotel.

10. A copy of these regulations will accompany each proposal.

11. Each bidder will be required to furnish a bond, properly executed, in a sum double the amount of his bid, with approved security, guarantying the execution and faithful performance of the contract which he will enter into should his bid be accepted, said contract to embrace the points enumerated in this paper.

12. The contract referred to in paragraph 11 will be entered into between the lessee and the Superintendent of the Military Academy, subject to the approval of the Secretary of War, and a clause will be inserted therein providing for its annulment at any time by order of the Secretary of War should the lessee fail to keep the hotel in the manner hereinbefore described, or should he fail to observe the orders relative thereto now in existence or which may be hereafter promulgated.

13. The lessee will not be permitted to sublet or lease the hotel or any of the buildings connected therewith.

14. The right is reserved on the part of the Government to reject any or all bids, and to accept such bid as it may consider best for its interests.

By order of the Superintendent.

WM. F. SPURGIN,

Captain Twenty first Infantry, Treasurer U. S. Military Academy.

Regulations governing the franchise connected with the lease of the public stable and residence at West Point, N. Y., now occupied by Mr. John Denton.

HEADQUARTERS U. S. MILITARY ACADEMY,
OFFICE OF THE TREASURER,
West Point, N. Y., June 24, 1887.

1. The lessee of the public stable and house now occupied by Mr. John Denton shall have the exclusive right to carry all passengers landed at the wharves and railroad stations on this reservation to and from the West Point Hotel and other parts of the post in so far as the same does not conflict with law or the right of any resident of the post to furnish transportation for himself, his family, or his guests.

2. The lessee shall keep for the use of residents and visitors such horses and vehicles as are found at first-class livery stables and at first-class hotels.

3. The drivers of all vehicles connected with the public stable shall have a neat and distinctive uniform which shall meet the approval of the Superintendent of the Military Academy, and which they shall wear at all times when on the post of West Point.

4. The lessee will have suitable vehicles of the class referred to in paragraph 2 at the docks, ferry landing, and West Shore Railroad depot to meet all trains and boats arriving between the hours of 8 a. m. and 9 p. m., and in all cases to provide for the transportation and protection of baggage belonging to residents or visitors employing him.

5. A uniform tariff of prices will be fixed by the Superintendent of the Military Academy for residents of or persons on duty at West Point and transient visitors.

6. The lessee will be required to purchase at a fair valuation the stock on hand belonging to the present lessee, Mr. John Denton, said valuation to be determined between Mr. John Denton and the lessee. Should they fail to come to an agreement, each will select a disinterested person to determine the value of property in question and all points arising in connection therewith, and should these two persons be unable to come to an agreement, they shall select a third party to the arbitration, and the decision of a majority of the three persons so chosen shall be final and binding on all interested parties.

7. The annual rental will be paid in proportional quarterly installments in advance.

8. The lessee will be required to pay the cost of all necessary repairs on the dwelling house occupied by him and on the public stable, the repairs necessary to be determined by a board of three officers convened by the Superintendent of the Military Academy during the first week of March in each year, and not to exceed annually a sum for the dwelling house greater than \$100, and for the stable a sum greater than \$50, or a total for both house and stable greater than \$150.

9. The lessee shall have no claim upon the Government for any improvements he may make by permission of the Superintendent whilst in possession.

10. Each bidder will be required to furnish a bond, properly executed, in a sum double the amount of his bid, with approved security, guarantying the execution and faithful performance of the contract which he will enter into should his bid be accepted, said contract to embrace the points enumerated in this paper and such regulations in reference to the livery business at West Point as may be in existence and not mentioned herein, inadvertently omitted.

11. The contract referred to in paragraph 10 will be entered into between the lessee and the Superintendent of the Military Academy, subject to the approval of the Secretary of War, and a clause will be inserted therein providing for its annulment at any time by order of the Secretary of War should the lessee fail to conduct the livery business in the manner hereinbefore described, or should he fail to observe the orders relative thereto now in existence or which may be hereafter promulgated.

12. The lessee will not be permitted to lease or sublet any privileges granted to him connected with the stables or carrying for the post.

13. The right is reserved on the part of the Government to reject any or all bids, and to accept such bid as it may consider best for its interests.

By order of the Superintendent.

WM. F. SPURGIN,

Captain Twenty-first Infantry, Treasurer U. S. Military Academy.

Abstract of charges authorized to be made by party holding lease of livery stable, as recommended by board convened at West Point, N. Y., October 30, 1887, and approved by the superintendent U. S. Military Academy November 4, 1887.

For carrying residents of or persons on duty at West Point, N. Y., to or from the wharves or railroad depot	\$0. 15
For each trunk or box carried in baggage wagon by them.....	. 15
For a two-horse carriage or sleigh, the first hour.....	1. 50
After the first hour.....	1. 00
For a two-horse carriage or sleigh per hour, between 10 p. m. and reveille....	2. 00
For a one-horse carriage or sleigh, per hour.....	1. 00
For carrying persons to or from Ruger, Camp, or Log towns to wharves or depot ..	. 15

Other charges for residents of or persons on duty at West Point, N. Y., to be in proportion to the above.

For carrying each transient visitor to or from wharves or depot .....	. 25
For each trunk or box carried by them in baggage wagon.....	. 25
For the hire by them of a two-horse carriage, the first hour	2. 00
After the first hour.....	1. 50
For the hire by them of a two-horse carriage between 10 p. m. and reveille, per hour.....	2. 00

W. H. MILLER,
Captain and Assistant Quartermaster, U. S. Army.

WEST POINT, N. Y., *April 1, 1891.*

THE ADJUTANT U. S. MILITARY ACADEMY,
West Point, N. Y. :

SIR: I have the honor to submit the following report of survey made of the United States Military Reservation of West Point, N. Y.

I received verbal orders from Capt. P. M. Price, Corps of Engineers, U. S. Army. They were to redetermine the azimuths and lengths of the bounding lines of the reservation, the corners of which having, with one exception, been already located and marked.

These orders were subsequently modified to include the addition known as the Kinsley estate. This latter was first surveyed by me in the spring of 1888, and the deed of purchase was based on that survey. The corners of this estate were shown me by the owners of adjacent property, and according to the plats these corners were joined by right lines. The location of the corners was verified by the statement of Mr. Caldwell, of Newburg, the surveyor who surveyed all the property in that neighborhood.

The northeast corner of the military reservation was the one that had not been marked. The north bounding line was first surveyed by a commission appointed for that purpose, and subsequently by a Mr. Parmenter. The latter describes the line as passing by a large, marked tree, and ending at a large stone on the Hudson River bank. There is still a large rock on the bank, which would appear might be the one. However, a right line joining this point with the northwest corner would go over ground whose topography does not at all agree with the description; on it no marks could be found, and its direction would differ several degrees from the description. Moreover, the survey made by the commission, and on which Mr. Parmenter's was based, does not mention this rock. This, then, evidently could not be the line.

I corresponded with the county surveyor, and recorder, and the railroad company; obtained copies of deed of transfer, etc., but could get no additional information; A bolt in a small rock about 300 feet north of large rock was thought by Mr. Caldwell, the surveyor from Newburg, might be the corner. This bolt was evidently of recent origin; the rock was so small as not to be conspicuous, and apparently had been placed by the railroad company. It could not have been the one referred to by Parmenter, as it was right by an old house foundation which, in Parmenter's survey, is at some distance. The objections as to the topography and direction of line apply here as well.

By making the angle at the northwest corner very nearly equal to that of Parmenter and the commissioner's survey, I determined a line whose topography agreed with the description, and on which I found a tree lying on the ground partly decayed, but which was the only large tree in that vicinity, and was probably the tree referred to. I took this as the line and continued it to the river.

The azimuths of all the lines were determined by connecting with Crow Nest, Plum Bush, and Bare or Bald Rock stations of the Coast Survey, and with the north and south line established on the plain at West Point.

The instrument used was a good field transit. Angles were repeated in the usual way.

As observations to long distances could usually not be taken from the corners, lines were prolonged to the corners. All lines were determined by two independent systems of observations, and are accurate within the limits of the description.

The distances were measured by stadia, by two independent observers.

The description of the line is as follows:

Azimuths are measured from the south around to the west; the number of the stations are given to agree with previous survey.

Starting at a point where west bank of Hudson River is intersected by south line, marked by iron gun near bank, thence $89^{\circ} 21'$, 3,467 feet to iron bolt in rock (station 3); thence $184^{\circ} 32'$, 411 feet to iron gun (station 4); thence $192^{\circ} 15'$, 1,701 feet to iron gun (station 5); thence $184^{\circ} 44' 30''$, 2,123 feet to iron gun (station 6); thence $91^{\circ} 14' 30''$, 4,950 feet to iron gun (station 7); thence $18^{\circ} 36'$, 1,612 feet to iron gun (station 8); thence $83^{\circ} 40' 15''$, 3,402 feet to iron bolt in rock (station 9); thence $172^{\circ} 11'$, 3,051 feet to iron gun (station 10); thence $256^{\circ} 5' 45''$, 4,095 feet to iron gun (station 11); thence $171^{\circ} 53'$, 6,433 feet to iron gun (station 12); thence $262^{\circ} 53' 30''$, 6,200 feet to river bank; thence down river bank to place of beginning, excepting strip of 49½ feet on each side of center of West Shore Railroad track, beginning at south boundary, marked by iron gun, and extending to north line of Kinsley estate, marked by bolt in rock.

The lines are further marked as follows: Line 2-3, iron gun at Highland Falls road; line 6-7, iron gun at Stony Lonesome road; line 8-9, iron gun at Highland Falls road; line 8-9, iron gun at Long Pond road; line 9-10, iron gun at Long Pond road; line 10-11, iron gun at Cornwall road; line 11-12, 2 iron guns at crossings of Cornwall road; line 12-13, iron gun at top of hill overlooking river; line 12-13, iron gun near river bank.

Furthermore, the line is slashed throughout.

On lines 6-7, 7-8, 8-9, 9-10, and on south boundary of Kinsley estate, the fences of private individuals encroach upon the reservation, not, however, to any great extent.

A map and a sworn statement of the location of the guns are appended.

Very respectfully, your obedient servant,

JOHN BIDDLE,
First Lieutenant, Corps of Engineers.

A true copy.

J. M. CARSON, JR.,
Second Lieutenant Fifth Cavalry, Adjutant U. S. Military Academy.

ENGINEER OFFICE, U. S. ARMY,
Nashville, Tenn., May 7, 1891.

I hereby make affidavit that the iron guns placed at the corners of the United States Military Reservation, marked 5, 6, 7, 8, 10, 11, 12, in the appended plat occupy exactly the same locations as the stone monuments that previously marked these corners.

JOHN BIDDLE,
First Lieutenant, Corps of Engineers.

Subscribed and sworn to before me this May 7, 1891.

[SEAL.]

E. R. CAMPBELL,
Clerk United States District Court.

CADET HOSPITAL, U. S. MILITARY ACADEMY,
West Point, N. Y., August 31, 1891.

The POST-ADJUTANT,

Present:

SIR: In compliance with the verbal instructions of the Superintendent, I have the honor to submit the following report concerning the condition and work of the Medical Department of the U. S. Military Academy and Post of West Point for the year ending June 30, 1891:

The following medical officers have been on duty during the year, viz :

(1) Maj. Henry McElderry, surgeon, U. S. Army, post surgeon, on leave of absence on account of sickness from September 10, 1890, to January 10, 1891. (S. O. No. 214 and 263, A. G. O., C. S., 1890.)

(2) Capt. Samuel Q. Robinson, assistant surgeon, U. S. Army, from July 1 to July 9, 1890. Relieved from duty by S. O. No. 153, paragraph 12, A. G. O., C. S., 1890.

(3) Capt. William Fitzhugh Carter, assistant surgeon, U. S. Army, from July 9, 1890, to end of year (June 30, 1891). S. O. No. 153, paragraph 12, A. G. O., C. S., 1890. On leave of absence for 11 days, from May 22, 1891, to June 2, 1891. By orders No. 78. Headquarters U. S. Military Academy, West Point, N. Y., C. S., 1891.

(4) Acting Assistant Surgeon William Penn Compton, U. S. Army, from beginning to end of year.

The duties of the medical officers have been divided generally as follows, viz :

The post surgeon has charge of the cadet hospital and cadet sick call, general administrative affairs of the Medical Department of the Academy and Post and of such officers and their families as may call on him for professional advice and treatment.

The first assistant has charge of the soldiers' hospital and such officers and their families as may call on him for treatment, and since January 1, 1891, has examined and fitted with glasses for studying such cadets as have suffered from eye strain.

The second assistant has professional charge of the families of enlisted men and of civilian employes and their families living on the reservation and of such officers and their families as may call on him for professional treatment.

The following table shows the average strength of the command for the year :

Officers	50
Cadets	261
Enlisted men	331
Civilians, officers, and soldiers' families; employes and their families.....	1,065
Total	1,707

The following table shows number of cases treated during the year :

Officers: wounded, 3; sick, 18	21
Cadets in hospital: wounded, 81; sick, 368.....	449
Cadets, approximate number, treated in quarters and excused from some duty.....	1,910
Cadets treated in quarters, not excused	2,644
Enlisted men in hospital and quarters: wounded, 66; sick, 315.....	381
Civilians on reservation: Men, women, and children treated.....	967
Total of cases treated	6,372

There was no death among officers or cadets during the year. Of the total number of cases among civilians on the reservation, 291 are recorded at the cadet hospital as having occurred among officers' families.

There was but one death among this class of patients: (From heart failure and old age).

There were 676 cases treated among civilians at the soldiers' hospital. Of this number there were 123 cases of contagious diseases, as follows, viz: Diphtheria, 1; acute parotitis (mumps), 27; influenza, 71; whooping cough, 24. Total, 123. There were three deaths among this class of patients: Still-born, 1; pulmonary tuberculosis, 1; croupous-pneumonia, 1.

There were two deaths among enlisted men during the year: Heart failure, 1; pulmonary tuberculosis, 1.

Eighteen births are recorded as having taken place on the reservation during the year.

Five thousand one hundred and eighty-six prescriptions are recorded at the cadet hospital as having been put up during the year, 710 for officers and 4,476 for others. Three thousand one hundred and seventy-three prescriptions are recorded at the soldiers' hospital as having been put up during the year.

One hundred and eighty-six recruits were examined at the soldiers' hospital during the year. Fifty-one vaccinations, 172 revaccinations were performed on the reservation during the year.

The entire fourth class corps of cadets was included in the number. The following points have been particularly dwelt upon by the medical officers in their monthly sanitary reports during the year, viz :

(1) Defects in plumbing in cavalry barracks, artillery detachment barracks, assistant surgeon's quarters, and need of flushing of privy in rear of band barracks. August 5, 1890. (Assistant Surgeon Carter.)

(2) Recommendations concerning improvement of the lighting at night of cadet barracks. October 12, 1890. (Assistant Surgeon Carter.)

(3) Recommendations concerning flushing and disinfection of all waste pipes, soil pipes, house drains, and sewers throughout the post, and examination of plumbing in

barracks by a plumber. Calls attention to the poor quality of the lining of the copper vessels now in use in the cadet hospital, which has worn off in places. November 19, 1890. (Assistant Surgeon Carter.)

(4) Calling attention to defects in plumbing in officers' quarters; recommends that cadets be required to wear overcoats out of doors regularly during cold weather, and overshoes whenever the ground is wet and cold or covered with snow. January 8, 1891. (Assistant Surgeon Carter.)

(5) Reports that the whole subject of drainage and sewerage of the post is now being thoroughly considered by a board of officers appointed by the Superintendent, and of which the professor of engineering, the post surgeon, the post quartermaster, and Lieutenant Lundeen are members.

The board is directed to investigate and report the present condition of affairs and make recommendations.

Reports the result of vaccination and revaccination of entire fourth class of cadets. February 8, 1891. (Surgeon McElderry.)

(6) Reports defects in plumbing of soldiers' hospital. February 9, 1891. (Assistant Surgeon Carter.)

(7) States that the report of the board of officers appointed by the Superintendent on the improvement of the drainage and sewerage of the post has been submitted to the Superintendent and has received his cordial approval and action, and that a satisfactory programme of operations for the expenditure of the appropriation of \$15,000 made by Congress in the last Military Academy appropriation bill for repairs to the drainage and sewerage system of the post, etc., and available July 1, 1891, has been decided upon by the officers directly charged with the supervision of the expenditure. Also reports that there have been two cases of diphtheria, and two officers affected with sewer poisoning, due, in the opinion of the post surgeon, to leaks in the soil pipes in their respective houses. April 13, 1891. (Surgeon McElderry.)

(8) Reports that the plumbing in one of the officers' quarters was tested on the 30th instant and found defective; that there had been constant sickness in this family, "entirely due to this cause." Upon the fact being reported to the Superintendent action was promptly taken to repair the plumbing, and the work is now in progress. Recommends that the sewers throughout the post be thoroughly flushed out with the hose and fire engines, as soon as practicable, to cleanse them, etc. May 6, 1891. (Surgeon McElderry.)

(9) States it seems to be well understood that the amount of money, \$15,000, appropriated by the last Congress, will not be sufficient to do all the work necessary to properly carry out the recommendations of the post surgeon regarding the plumbing, drainage, and sewerage of the post, which recommendations have already received the approval of the Superintendent, and the necessity for which has been fully recognized by the board of officers recently convened at this post by the commanding officer to report upon the best method of expending the present appropriation for these purposes. The post surgeon respectfully begs leave to express the hope that the estimate for the next Military Academy appropriation bill may contain provisions for the necessary funds for carrying on and completing these very necessary and much needed improvements to bring the post in these respects into satisfactory sanitary condition. June 3, 1891. (Surgeon McElderry.)

The following special sanitary reports have been made by the medical officers of the post during the year:

(1) Detailed special report dated September 26, 1890, by Capt. W. F. Carter, assistant surgeon, U. S. Army, acting post surgeon, upon the character of the gas light in the cadet barracks, and recommending that the cadet barracks be lighted by the incandescent electric light (in which recommendation the post surgeon fully concurs).

(2) Special report dated October 14, 1890, by Capt. W. F. Carter, assistant surgeon, U. S. Army, acting post surgeon, detailing, in compliance with instructions, the results of a careful and critical inspection of the buildings where diphtheria appeared during the past year.

(3) Special report, dated January 14, 1891, by Maj. Henry McElderry, surgeon, U. S. Army, post surgeon, calling attention to the urgent necessity for new cadet sinks and baths and urging that the proper steps be taken to bring this matter to the early attention of the proper authorities, with a view to having the item referred to in the estimate originally forwarded allowed in the pending Military Academy bill.

(4) Special report, dated February 6, 1891, by Maj. Henry McElderry, surgeon, U. S. Army, post surgeon, concerning cases of diphtheria and scarlet fever which occurred at the post between October, 1889, and May, 1890.

(5) Special report, dated April 26, 1891, by Maj. Henry McElderry, surgeon, U. S. Army, post surgeon, detailing results of a personal inspection of a set of quarters occupied by a corporal of the engineer company.

(6) Special report, dated March 16, 1891, by Maj. Henry McElderry, surgeon, U. S. Army, post surgeon, reporting a suspicious case of sore throat in the family of an

officer. (This case turned out to be diphtheria, and a leak in the soil pipe was afterwards found in this set of quarters, which was promptly repaired.)

(7) Special report, dated March 25, 1891, by Maj. Henry McElderry, surgeon, U. S. Army, post surgeon, reporting a leak in the plumbing in a set of officers' quarters and sickness of officers caused thereby. (Leak promptly repaired.)

(8) Special report, dated March 18, 1891, by Maj. Henry McElderry, surgeon, U. S. Army, post surgeon, reporting a case of diphtheria in the family of the superintendent of the cadet laundry, and three joints of the soil pipe in the set of quarters were found leaking, etc. (Leaks promptly repaired and family quarantined.)

(9) Recommends that an estimate of cost of material and labor required to construct a set of hospital steward's quarters, to be located in the immediate neighborhood of the new soldiers' hospital, now in course of construction at this post, may be included in the next Military Academy appropriation bill, and gives reasons therefor.

June 8, 1891.—One hundred and eight cadets suffering with eye strain have had their eyes thoroughly examined by Capt. W. F. Carter, assistant surgeon, U. S. Army, during the year, and of this number forty-three have had spectacles furnished for studying.

This special work was undertaken at the desire of the present Superintendent to save the cadets the expense and loss of time from their studies in going to New York City to consult oculists, and Captain Carter deserves commendation for the thorough and satisfactory manner in which he has performed this special work.

It is presumed that the new soldiers' hospital now being built will be completed during the present fall. A sewer will be needed to connect it with the sewerage system of the post.

A new set of hospital steward's quarters will be needed near the new soldiers' hospital, as the present building now occupied by the steward, and which adjoins the old soldiers' hospital, will be too far away from the new hospital. An estimate has been asked for some needful improvements and repairs at the cadet hospital.

It is understood that estimates for all these items will be included in the next Military Academy appropriation bill.

The work of improving the drainage and sewerage of the post, under the appropriation of \$15,000 made by the last Congress, is now in satisfactory course of construction.

A much larger sum will be needed to carry out the sanitary improvements of the post already recommended by the post surgeon and approved by the Superintendent.

The completion of the thirty sets of soldiers' quarters now in course of construction on high ground will very much add to the comfort and sanitary surroundings of the families of enlisted men living on the reservation.

In the five new sets of officers' quarters now being built at the post proper precautions have apparently been taken to insure dry and well-drained foundations. The clerical work, dispensing of medicines, cooking, and nursing in the cadet hospital and soldiers' hospital during the year have been satisfactorily performed by members of the hospital corps.

The medical department of the post is indebted to the Superintendent for his uniform, prompt, earnest, and cordial approval of every recommendation made during the year for the sanitary improvement of the post and garrison.

It is believed that the cadet and soldiers' hospitals at this post are fully supplied with all the medicines and surgical appliances needed for the proper treatment of the sick and wounded, and they have been kept in good condition during the year.

Instruction in first aid to the wounded, and, when the weather permitted, in litter and ambulance drills, has been given the men of the hospital corps and company litter bearers of the post each week during the year by Capt. W. F. Carter, assistant surgeon, U. S. Army.

The post surgeon desires to express his satisfaction with the efficient manner in which his assistants and the hospital corps generally have performed their duties during the year.

Very respectfully, your obedient servant,

HENRY MCELDERRY,
Major and Surgeon, U. S. Army, Post Surgeon.

Official.

J. M. CARSON, JR.,
Second Lieutenant Fifth Cavalry, Adjutant.