

ANNUAL REPORT

of the

Board of Visitors to the United States Military Academy

FOR THE YEAR

1904.



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1904.

REPORT

of the

Board of Visitors to the United States Military Academy.

WEST POINT, N. Y., *May 28, 1904.*

SIR: The Board of Visitors appointed by law under sections 1327, 1328, and 1329, Revised Statutes of the United States, "to inquire into the actual state of discipline, instruction, police administration, fiscal affairs, and other concerns of the institution, and to report the same to the Secretary of War for the information of Congress," has the honor to submit the following report:

The membership of the Board of Visitors for the present year is as follows:

Appointed by the President of the United States.—(1) Gen. James R. Carnahan, Indianapolis, Ind.; (2) Prof. Brewster O. Higley, Athens, Ohio; (3) Gen. A. P. Wozencraft, Dallas, Tex.; (4) Hon. A. G. Weissert, Milwaukee, Wis.; (5) Gen. John M. Wilson, U. S. Army, retired, Washington, D. C.; (6) Mr. Henry Van Kleeck, Denver, Colo.; (7) Col. Allan C. Bakewell, New York, N. Y.

Appointed by the President pro tempore of the Senate.—(8) Hon. Francis E. Warren, Cheyenne, Wyo.; (9) Hon. Hernando D. Money, Carrollton, Miss.

Appointed by the Speaker of the House of Representatives.—(10) Hon. Thaddeus M. Mahon, Chambersburg, Pa.; (11) Hon. George W. Prince, Galesburg, Ill.; (12) Hon. Robert F. Broussard, New Iberia, La.

The board met at West Point, N. Y., on Friday, May 20, at 12 o'clock noon, all the members being present except the Hon. Francis E. Warren and the Hon. George W. Prince, and organized by the election of Brig. Gen. John M. Wilson, U. S. Army, retired, as president, Hon. Hernando D. Money as vice-president, and Prof. Brewster O. Higley as secretary.

Hon. Francis E. Warren reported as a member of the board on the 22d instant.

Upon being notified of the organization of the board, the Superin-

tendent of the United States Military Academy, Brig. Gen. A. L. Mills, at once communicated with the board, in writing (Appendix A), expressing his earnest desire to aid the members in their efforts to inspect all departments of the institution, administrative as well as academic, and to assist the members in every possible way in the labors devolving upon them. Upon the receipt of the communication from the Superintendent of the Academy, the board adjourned to meet at 4 o'clock p. m., when it reconvened for the purpose of receiving the Superintendent of the Academy, who was accompanied by the members of the academic board and his military staff, and, after introducing each officer to the members of the Board of Visitors, invited the latter to a review of the Corps of Cadets in honor of the board, upon the general parade ground.

At the close of the review the board was received by General and Mrs. Mills at the quarters of the Superintendent, where the members had the pleasure of meeting the officers and ladies of the post, the graduating class, and a number of distinguished guests visiting West Point.

The board met again at 7 p. m. Friday, the 20th instant, upon the call of the president, and the following committees were appointed:

Fiscal affairs.—Hon. Hernando D. Money, Hon. Thaddeus M. Mahon, Hon. A. G. Weissert, Hon. Robert F. Broussard, Mr. Henry Van Kleeck.

Increase plant, buildings, grounds, hygiene.—Hon. Francis E. Warren, Hon. Robert F. Broussard, Hon. Hernando D. Money, Prof. Brewster O. Higley, Mr. Henry Van Kleeck, Hon. A. G. Weissert.

Instructions, discipline, athletics, and examinations.—Prof. Brewster O. Higley, Hon. Thaddeus M. Mahon, Gen. James R. Carnahan, Gen. A. P. Wozencraft, Col. Allan C. Bakewell, Hon. George W. Prince.

Arms and equipment.—Hon. George W. Prince, Gen. A. P. Wozencraft, Col. Allan C. Bakewell, Hon. Francis E. Warren, Gen. James R. Carnahan.

The board met on the morning of Saturday, May 21, and unanimously selected Gen. James R. Carnahan of Indiana to deliver the address to the graduating class at the final exercises of the academic year, on June 15, 1904.

Daily sessions were held during the mornings, afternoons, and evenings of the 23d, 24th, 25th, 26th, and 27th of May, during which the board discussed the existing conditions of the Academy and the proposed extensive improvements, visited all points of interest at the post, listened to the recitations of the cadets, witnessed the drills and parades, inspected the library, mess hall, cadet barracks, cadet hospital, cadet commissary store, riding hall, gymnasium, academic building, the observatory, the reservoir, Cullum Hall, the officers' mess,

the filtration plant, the beautiful cemetery, the chapel, Fort Putnam, and Constitution Island.

At the request of the board the following-named officers appeared before it during the week and gave their views, both orally and in writing, in reference to the condition of the institution and the duties immediately under their supervision: Brig. Gen. A. L. Mills, U. S. Army, Superintendent; Col. Samuel E. Tillman, professor of chemistry, mineralogy, and geology; Col. Valery Havard, Assistant Surgeon-General, U. S. Army, post surgeon; Lieut. Col. Charles G. Treat, commandant of cadets; Maj. John M. Carson, jr., post quartermaster; Maj. Mason E. Patrick, instructor practical military engineering; Maj. Frank E. Hobbs, instructor in ordnance and gunnery; Capt. Thomas Franklin, treasurer Military Academy and quartermaster and commissary of cadets.

General Mills discussed the general subject of the Academy in all its phases, including the increase of plant, buildings, grounds, fiscal affairs, instruction and discipline, arms and equipment.

Colonel Tillman submitted his views upon the subject of the extension of the Academy and the possible necessity for its future division into two great military institutions.

Colonel Havard discussed the general subject of the hygiene of the post, the sewage and drainage, the condition of the cadet hospital, and the absolute necessity for the immediate construction of two small buildings for isolation wards for contagious diseases.

Colonel Treat took up the general subject of instruction, discipline, and athletics, the armament of the post, and the methods of supplying the cadets with everything necessary for their mental and physical wants.

Major Carson discussed the general subject of the fiscal affairs of his department, the increase of plant, buildings, and grounds.

Major Patrick presented a brief résumé of the present, past, and proposed future water supply, describing the final plans as adopted and approved by the Secretary of War, and for which Congress had already made the necessary appropriation.

Major Hobbs described the various batteries and the present arms and equipment used at the Academy.

Captain Franklin gave an interesting description of the work devolving upon his department, including the cadet mess, the method of supplying the cadets with clothing, books, etc., and the fiscal affairs of the corps.

The various committees gave close study to the branches assigned them and submitted detailed reports which were fully and freely discussed by the full board before final adoption.

The board has now the honor to present its views and recommendations as required by law, as follows:

FISCAL AFFAIRS.

The subject-matters within the scope of the examination of the fiscal affairs have received all the facilities, both by oral and written statements and personal attention, that could be desired from the officers in charge of the respective departments, and the general condition has been found to be very satisfactory.

The accounts of the cadets are conducted in such a manner as to have the cadet constantly aware of his financial standing, with the purpose of having him graduate with a sufficient sum to his credit to procure the necessary outfit for an officer, it being particularly desirable that the graduates should not be oppressed by debt upon leaving the Academy.

Everything is done in the cadet commissary store to furnish all the necessities of a cadet, and a good many other requirements not absolutely necessary, but desirable.

The cuisine is excellent, and the diet is varied, wholesome, nutritious, and abundant, and conversation with cadets convinces us that they are satisfied and that their fare is better than heretofore within the experience of those now at the Academy. Attention is invited to the report of Capt. Thomas Franklin, U. S. Army, treasurer United States Military Academy, quartermaster, and commissary of cadets, attached hereto, marked Appendix C.

The quartermaster has made a detailed statement of his duties and the number of employees, civil and military, too various to enumerate. He is the disbursing officer of the post, and like all other officers of responsibility, he has administered his office with great efficiency.

The discipline of the institution, so far as affected by its fiscal arrangements, is good.

We find that the associate professor of mathematics receives \$2,000 per annum. We do not believe that this pay is sufficient for the character of the work done and the ability necessary in this office, and therefore recommend that his pay be increased to \$2,500; and that hereafter the associate professor of mathematics shall have the pay and allowance of a major, provided that when a vacancy shall occur in this place the position shall hereafter be filled by the detail of an officer from the Army at large, for the several reasons given in the letter of Brig. Gen. A. L. Mills, Superintendent of the Academy, dated February 17, 1904, attached to this report. (Appendix B.)

We further recommend an increase of the pay of the engineer of the electrical, heating, and refrigerating apparatus in the cadet mess from \$1,000 to \$1,200 per annum, and of the assistant engineer of the same from \$600 to \$900 per annum, for the reasons given in the state-

ment of Maj. J. M. Carson, jr., quartermaster, United States Military Academy, dated May 24, 1904 (Appendix D), herewith submitted as a part of this report.

We further recommend an increase in the salary of the superintendent and keeper of the post cemetery from \$900 to \$1,200 per annum, and that he be hereafter designated as superintendent and gardener of the post cemetery, for the reasons given in the aforesaid letter of Major Carson, herewith submitted.

INCREASE OF PLANT, ETC.

Former boards of visitors have from time to time recommended the rebuilding in whole or in part of the Military Academy at West Point. Congress has, during the past few years, provided by appropriation and law, at an adequate limited cost, a sufficient fund to practically carry out nearly all the recommendations of former boards of visitors up to and including the administration of the present efficient Superintendent, Gen. A. L. Mills.

A general scheme of enlargement and improvement of West Point, so often heretofore urged, has been finally adopted and nearly \$6,000,000 provided for the purpose. Practical general plans have been adopted after careful examinations and reports made by the several committees, special and regular, duly appointed for the purpose, as per the following letter:

HEADQUARTERS UNITED STATES MILITARY ACADEMY,

West Point, N. Y., May 21, 1904.

SIR: I have the honor to acknowledge the receipt of your letter of to-day in which the Board of Visitors express the wish to have me appear before it on Monday, the 23d instant, at 10 o'clock a. m., for the purpose of presenting in writing my views in reference to the proposed improvements at West Point, including the subject of the increased water supply. In reply I beg to state that it will afford me great pleasure to comply with the wishes of the Board and that I will report to you at the hour named.

In the matter of the improvements to be made at the Military Academy under the act of Congress of June 28, 1902, I beg to state that the work of preparing the necessary plans is making satisfactory progress. The Secretary of War gave his careful personal attention to the preliminary preparations for the work, and under his instruction ten firms of architects, of established reputation throughout the country at large, were invited to submit in competition preliminary general plans showing the proposed arrangement of the buildings and treatment of the grounds to meet the various requirements of the Academy, together with an indication of the architectural treatment of the separate buildings. The jury of award in the competition was composed of Lieut. Gen. John M. Schofield, U. S. Army, the Superintendent of the Military Academy, and Messrs. Post, Cook, and Gilbert, expert architects. The unanimous award of the jury, which was approved by the Secretary of War, selected the plans of Messrs. Cram, Goodhue & Ferguson, architects, of Boston, Mass. The firm under its contract with the United States developed its preliminary plan into a general plan, which has been approved by the Secretary of War, and which I will take pleasure in placing before the Board. The result, it is believed, has been the securing of plans of improvement which will receive very general approval. It meets the

practical requirements of the Academy, and will harmonize with the character of the landscape. Historic associations are preserved by the retention of the important old buildings with which the new ones will be made to accord; the whole making a satisfactory and complete plan. The plan is also one that can be constructed with economy.

In the matter of the increased water supply, I beg to report that the preliminary steps in this very important matter have already been taken. Congress has already made the necessary appropriation; the estimate for which was based upon the report of a board of especially experienced officers, who made a most careful investigation of this very important subject; their inquiry extending over a period of seven months. The recommendation of the board received the approval of the Secretary of War, and was submitted to Congress, which also acted favorably in the matter. The full proceedings of the board, with its recommendations, will be found on page 71 of the hearings before the Committee on Military Affairs, House of Representatives, on the bill making appropriation for the support of the Military Academy for the fiscal year ending June 30, 1905, and I take pleasure in transmitting herewith a number of copies of these hearings. I will also be glad to give the Board any additional information it desires on the subject.

Very respectfully,

A. L. MILLS,

Brigadier-General, U. S. Army, Superintendent.

Brig. Gen. JOHN M. WILSON, U. S. Army,

President Board of Visitors, West Point, N. Y.

THE NEW ESTABLISHMENT.

The Board, while regretting—on account of the historical interest attached to some of the old structures—the necessity of a few of the changes and removals made unavoidable by the adoption of general plans, feels assured, nevertheless, that the general result will be satisfactory, considering the amount of money available for buildings and improvements, the number of cadets to be accommodated at the Academy, and the possible wants of the future. Upon completion of the work now contemplated, two results should be obtained: First, a complete plant for the present corps of cadets, or for a moderately increased number of cadets at a very reasonable cost, compared with other similar schools in this country and abroad; and second, the grounds and buildings—while in an apparently completed stage—will yet be capable of taking on sufficient additions to enlarge the school 50 to 100 per cent, should it ever become necessary, without in any way marring the architectural effect either in landscape or in the grouping or external appearance of the buildings, or of impairing the internal conveniences or usefulness.

HISTORIC LANDMARKS.

There are yet a few debatable points regarding the removal of buildings and changes in the grounds which may be decided upon from time to time hereafter by the Secretary of War, or those he may designate to represent him, and it is suggested that every reasonable effort be made to preserve intact the buildings and older structures of historic

interest, as well as the newer and useful ones, and that in the grounds there may be preserved all the picturesque and ornate features now so much admired by West Point visitors. For instance, Execution Hollow, so called, should by all means be retained, and other depressions, mounds, hedges, and trees, the result of improvements of former times, should also be preserved.

REMOVAL OF THE OLD CHAPEL.

It is understood that the chapel, with its famous treasures and relics, reminding us of olden times and the heroic deeds of the Army, its officers and men, from the infancy of the Republic until the present day, will be retained, though the building itself must be removed from its present location. The Board can not too strongly urge that every feature of this historical structure and the contents shall be reproduced and preserved as a precious reminder of the past and a valued legacy for the future.

FORT PUTNAM.

The entire obliteration of old Fort Putnam should be prevented. The early memories and history that cluster around this post and the vicinity make it exceedingly interesting to those of the present, and it will be more and more interesting to students of American history who may come after us. Therefore, we strongly urge upon Congress the necessity of providing an appropriation which may be expended judiciously, from time to time within the next five years, in preventing further disintegration of the walls and the casemates of the remarkable fortification. There has been some question, in the way of newspaper reports, as to the early history of Fort Putnam.

We include the following with reference to date of construction, size of force, extent of armament, etc.:

25 JAY STREET, ALBANY, *February 26, 1903.*

DEAR SIR: Sometime ago I saw in a newspaper the statement that you desired to secure an appropriation from the Government to restore Fort Putnam, and that somebody in the War Department in Washington objected on the ground that Fort Putnam was not in use as a fort during the Revolution, but at a later period. To-day in looking at the Andre papers, taken from him at time of his capture, and which you no doubt know are preserved here in the State library in the capitol, I thought I saw evidence that the fort was in use as such, as you claim. I copied the heading of one of the papers, with names of a few of the various defenses given, which I inclose. I am a deputy factory inspector, and located in the capitol in that department. If I can be of service in any further information I will gladly render it. The papers describe minutely the condition of the defenses and, of course, are interesting.

Very truly, yours,

(MRS.) ANNIE L. GREENE.

Colonel MILLS,
West Point Military Academy.

[Copied from papers of Major Andre, in the State library, Albany, N. Y.]

Return of Ordnance in the different Forts, Bastions, &c., at West Point and its dependencies, Sept. 5, 1780.

Calibers:

Fort Arnold.

Fort Putnam.

Constitution Island.

So. Battery.

Chain Battery.

Lanthorne Battery.

Etc., a long list.

There is an old engraving of "the passage" with these papers, made in 1780, from a pen sketch of Major Andre, and, of course, a large number of interesting papers besides. You may know all this, however. I have copied exact the heading, spelling, capitalizing, etc.

[Second indorsement.]

UNITED STATES MILITARY ACADEMY, LIBRARY,
West Point, N. Y., February 28, 1903.

Respectfully returned to the adjutant, United States Military Academy, after noting contents.

The Andre papers show that West Point was the key to the Hudson and Fort Putnam the key to West Point. These papers are printed in Sargent's Andre, now in the library. Work on Fort Clinton was begun March 12, 1778, and Forts Putnam, Wyllis, and Webb were built at this time. All these were completed before July 18, 1779. On September 24, 1779, General Du Portail reported to General Washington that the garrison of Fort Putnam should be 300 men, and that there was then 150 men lodged in its barracks and bombproofs. February 5, 1780, Jackson's and Tupper's regiments garrisoned Fort Putnam. November 30, 1780, the Second Massachusetts Brigade was to defend Fort Putnam. January 14, 1782, Fort Putnam was entirely complete. Its garrison (January 18) was the Eighth Massachusetts Regiment. September 6, 1787, the guns of Fort Putnam were still in place. December 12, 1794, "the old wall of Fort Putnam facing Fort Clinton taken down and replaced." Nine bombproof arches were then complete, four incomplete. In the years 1794-1815, \$13,030.07 were expended on the fortifications at West Point; 1805, Fort Putnam rebuilt.

EDWARD S. HOLDEN, *Librarian.*

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 21, 1904.

SIR: I have the honor to renew the recommendations made to the last Board of Visitors that early steps be taken for the preservation of Fort Putnam. This historic place was the key of the defenses of the Hudson River during the Revolutionary war, and its retention by the Revolutionary army under General Washington at the most critical period of the war of independence had a vital bearing on the final success of the American armies. Clustered around the place are many of the most memorable points of Revolutionary history and interest, a fact which yearly draws many visitors to the fort. Its restoration and preservation is deemed to be a patriotic duty and can no longer be delayed with safety.

Although the fort has been subjected to the storms and winters of nearly a century and a quarter, it still retains its form enveloped in crumbled walls. Careful estimates made show the restoration of these walls and the dilapidated casemates will entail

a maximum expenditure of not to exceed \$25,000. The parapet of the work is supported by rugged masonry walls originally laid in lime mortar, which has totally disintegrated and permitted the face stones of the walls to fall away from the backing over nearly the whole work. It is only a question of a short time more when all of these parts must also crumble away. A small annual appropriation for a number of years would enable the fort to be preserved, and it is recommended that the Board urge that such be granted.

Very respectfully,

A. L. MILLS,

Brigadier-General, United States Army, Superintendent.

Brig. Gen. JOHN M. WILSON, U. S. Army,

President Board of Visitors, West Point, N. Y.

CONSTITUTION ISLAND.

Constitution Island, which lies in the Hudson River opposite West Point and directly under its eye—to give expression to the feeling as one looks down the river—should be owned by the United States as a part of West Point Reservation. Perhaps no one can visit West Point and leave it with a different opinion than that above expressed. While not needed at present for actual or remunerative use, yet the great need of it to preserve the beauty and comparative isolation—and we might almost say morale of West Point—is clearly apparent. Appalling negligence may be charged if this island is permitted to go into other hands than that of the United States when it passes from its present owner. We recommend consideration of its purchase.

WATER SYSTEM.

Preliminaries have been concluded and appropriations provided for completion of an adequate and excellent water system. It is believed that the amount now available will be never-failing and more than ample for the present needs and any enlargement that may hereafter be undertaken. In fact, it is stated by experts that the amount available will be ten to fifteen times as much as present actual needs. The quality of water at West Point now, and the new supply proposed, is excellent. A memorandum regarding same is herewith submitted:

UNITED STATES MILITARY ACADEMY,
DEPARTMENT OF PRACTICAL MILITARY ENGINEERING,
West Point, N. Y., May 22, 1904.

GENERAL: In compliance with your letter of the 21st instant, I have the honor to invite attention to the copy herewith of my report to the Superintendent dated December 18, 1903, in which my "views in reference to the water supply of the Military Academy" are set forth at length. (Appendix E to Board's report.)

I also submit herewith a memorandum containing "a general statement of the plans for the new work to be undertaken."

Very respectfully,

MASON M. PATRICK,

Captain of Engineers, U. S. Army,

In Charge of Water Supply.

Brig. Gen. JOHN M. WILSON, U. S. Army,

President Board of Visitors, United States Military Academy,

West Point, N. Y.

Memorandum for the President of the Board of Visitors, setting forth the plans for the new work to be undertaken in connection with the increase of the water supply of the United States Military Academy.

UNITED STATES MILITARY ACADEMY,
DEPARTMENT OF PRACTICAL MILITARY ENGINEERING,
West Point, N. Y., May 22, 1904.

The amount available for this work is \$400,000.

Having acquired the necessary land and water rights, it is proposed to bring the water to the reservation by gravity, tapping the source of supply at an elevation high enough to make this feasible, through a closed conduit, cast-iron pipe probably 20 inches in diameter.

Where this conduit leaves the source of supply a dam of suitable dimensions will be constructed. The detailed plans for this dam are now being made and its approximate location has been selected. One survey along a possible route for the pipe line has already been made and another survey along a different and probably better route is just being started.

That route will be adopted which is found to present the greatest number of advantages, taking into consideration all questions affecting the cost of the right of way, the cost of laying the pipe line, and of its maintenance after it is completed.

The new conduit, when it reaches the post, is to deliver into the existing Lusk Reservoir, which, in addition to its function as a storage reservoir, will then act as a distributing reservoir. A line of pipe is also to be laid from Delafield Reservoir to the cadet mess to deliver water to the gymnasium tank, to the cadet sinks, and to the refrigerating machine, and for street sprinkling. This is for the purpose of avoiding the draft heretofore made for these items upon the water in Lusk Reservoir, and thereby lessen the danger of a water famine until the increased water supply is made available.

An estimate of the cost of all this work is given below. This estimate is based upon known prices with a sufficient margin of safety, and I am confident that the work can be done within the limit of the amount now available:

Estimate of cost.

Land and water rights	\$100,000
35,000 feet cast-iron 20-inch pipe	140,000
Laying pipe line	100,000
Intake	10,000
Keeper's dwelling	4,000
Supply pipe from Delafield	4,000
Contingencies	42,000
Total	400,000

Very respectfully,

MASON M. PATRICK,
Captain, Corps of Engineers,
In charge of Water Supply.

NEW BUILDINGS.

We do not consider it necessary or advisable to allude in detail at this time to the various new buildings contemplated and the enlargements and improvements of the old, nor to the desirable changes proposed in the grounds, such as converting the present artillery and cavalry plain into an addition to the present grass plain, and the preparation of a new cavalry plain at another point, etc. All of these are

part and parcel of the general plan which has been taken up as a whole and duly approved by the Secretary of War February 27, 1904; but there are one or two conspicuous deficiencies, which, although amply provided for in the future under the new plans, demand prompt attention. The urgent immediate necessity of relief leads the Board to make the following suggestions:

MODERN IMPROVEMENTS IN THE PRESENT BARRACKS.

Among the first things considered and the first work done under the general plan should be the installation in present barracks of latrines, lavatories, and new plumbing proposed. The present conveniences, or inconveniences, which compel crossing of the open-area space in all kinds of weather, night or day, whether a cadet be sick or well (unless in the hospital), to reach the present establishment, is most objectionable.

CONTAGIOUS OR ISOLATION WARD OF THE HOSPITAL.

The Board recommends that Congress shall provide a small appropriation—perhaps \$5,000 would be sufficient—and make it immediately available for the construction of one or more wards. Cases of measles, mumps, and scarlet fever have appeared heretofore, and even small-pox might occur, and while a tent could be set up and arranged for a temporary hospital in summer, yet, with the rigorous weather of this climate such a refuge would not be available during the winter months; and we earnestly urge immediate action in this direction. We submit herewith a letter from Colonel Havard, the post surgeon, upon this subject:

UNITED STATES MILITARY ACADEMY,
SURGEON'S OFFICE,
West Point, N. Y., May 24, 1904.

(Copy respectfully submitted to the Board of Visitors.)

THE ADJUTANT, UNITED STATES MILITARY ACADEMY,
West Point, N. Y.

SIR: Concerning the necessity for a contagious-disease hospital at this post, I have the honor to submit the following remarks and recommendations:

During the present year there have been so far in the Corps of Cadets 9 cases of measles, 4 cases of chickenpox, and 54 cases of mumps. In the absence of a separate building available for the purpose, one of the wards in the north wing of the cadet hospital was set apart for the above cases, the three diseases being admitted and treated in the same ward, the only one which could be used without almost certainly infecting the whole hospital building. Hospital tents were pitched near the hospital for use in case the number of patients should become greater than could be accommodated in the ward. Their use in severe winter weather would have entailed difficulties and hardships for both patients and hospital corps, so that it was deemed the lesser evil to treat the three diseases together in one room than to separate one of them in the tents. However, had these diseases been of a more serious nature, like diphtheria, scarlet fever, or smallpox, for instance, the use of the tents would have been imperative.

It is my opinion that outbreaks of infectious diseases among cadets may be expected hereafter every winter and spring, on account of the large increase in the number of cadets and of the population of the post, the greater number of visitors, and the much more active intercourse with the outside world.

The necessity of a contagious-disease hospital is therefore obvious. I am informed that such a structure is included in the scheme of improvements now under consideration, but it seems impossible that under the most favorable circumstances this hospital can be erected in less than three years. Meanwhile some provision outside the cadet hospital should be made for contagious diseases. It is not desirable that any such diseases should be treated within this hospital, but even should an emergency require it, only one ward could be used, in which only one kind of disease should be admitted, its ordinary capacity being 10 to 12 patients.

I therefore respectfully recommend, after consultation with the quartermaster, that for temporary use two plain frame buildings, each 20 by 30 feet, with bathroom, water supply, and sewer connection, be erected in the vicinity of the hospital, and that the sum of \$5,000 be appropriated for the purpose, these buildings to be erected and ready for use before next winter.

Very respectfully,

V. HAVARD,
Colonel, Assistant Surgeon-General, U. S. Army, Surgeon.

INSTRUCTION, DISCIPLINE, ATHLETICS, AND EXAMINATIONS.

Instruction.—The methods of instruction at the Academy, measured by results, indicate a high degree of proficiency on the part of the individual cadet. The recitations attended by members of the board revealed care and thoroughness of preparation, as shown by readiness in class work. The board commends the section system which prevails at the Academy, under which each cadet is expected to recite daily in every subject of instruction in the class of which he is a member. Such a system is conducive to the very best results. Our greatly increased intercourse with the Spanish-speaking people, especially on the American Continent, makes it necessary that our military officers be qualified to speak the Spanish language fluently. The board approves entirely the conversational system of instruction in Spanish now pursued at the Academy, and recommends that the work in the study of the French language be made to follow the method which has proved so successful in the course in Spanish in the past year.

Discipline.—The discipline of the Academy is in a very satisfactory state. The practice of "hazing" new cadets no longer exists among the corps of cadets. The present state of affairs has the support of the cadets themselves, and thus gives assurance of permanency. It is but a matter of justice to all concerned to say that the Superintendent of the Academy, Gen. A. L. Mills, and the other officers, both academic and military, by their tact and firmness, have brought about the satisfactory condition that now prevails at the Academy.

Athletics.—The facilities for gymnastic training are temporarily somewhat limited, so far as floor space is concerned. This will be remedied, however, when the new buildings which are made possible by the recent appropriation of Congress, are completed. The gymnas-

tic and calisthenic exercises constitute a very important part of the daily work of the cadets. The physical culture obtained through these exercises is of the highest importance in maintaining the general good health which exists at the Academy. The practical instruction in engineering, cavalry, artillery and infantry, is also helpful in giving to the cadets not only a thorough knowledge of those branches, but also a physical development which can be obtained in no other manner. The whole system of athletics and physical exercise given here, taken in connection with the academic instruction, is calculated to give the cadets that combination of physical, moral, and mental training which results in the development of the perfect man.

Examinations.—The examinations, as they are conducted at the Academy, furnish further proof of the thoroughness and efficiency of instruction here. The board commends the plan of excluding from final examination the cadets whose term average is not below 2.5 in a possible maximum of 3. Such a plan puts a premium upon good term work, encourages persistent effort on the part of the cadet, and leads to the formation of habits of study calculated to establish the highest state of efficiency among the cadets. On the other hand, those who fall below the 2.5 mark have an opportunity to increase the term mark by passing a good examination. In such cases an incentive is thus presented the cadets to continue their efforts to the end of the term.

Post school.—The board wishes to insert under this head the letters of the Superintendent of the Academy, Gen. A. L. Mills, and Lieut. M. J. McDonough, the officer in charge of the school. These letters explain fully the conditions as they exist, and bring out quite fully the rather peculiar situation in regard to education of children at this post. The board indorses, after a thorough personal investigation, every statement made by General Mills and Lieutenant McDonough, and approves of the recommendation for the employment of three female teachers and a male principal, as suggested by General Mills, and the officer in charge, Lieut. M. J. McDonough.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,

West Point, N. Y., May 21, 1904.

SIR: I have the honor to recommend that the Board of Visitors give consideration to the desirability of placing the children's school at West Point upon a basis to enable it to provide at least the foundation of a common school education for the more than 250 children residing here.

I feel this to be a most important matter. The conditions at West Point are such that there must always be many young children among its residents. The place is isolated, and, especially in winter, the difficulty of access to neighboring towns is so great that the maintenance of a children's school is a necessity. The responsibility, under existing circumstances, is very largely the Government's, and I believe it is but right that it should assume the burden.

The existing school is most unsatisfactory, and contrasted with the educational work done at the Military Academy itself, it is the subject of proper and just criticism on the part of the public aware of the situation. The teachers in the school are

enlisted men, and until lately the building occupied was devoid of the proper fixtures and of the equipment required to make the school the desirable place it should always be.

The use of soldiers as teachers for young children is objectionable for several reasons. In the first place they seriously cripple the organizations from which they are taken, and the saving in employing them is hardly appreciable, as their actual cost closely approximates the amount necessary to obtain trained teachers. Though the best men for the purpose are taken, they are not suitable to teach small children. Women should be employed for this purpose, as men are not comparable to them in handling little children—a principle which is recognized everywhere in all civil communities.

Owing to existing poor facilities many children have been attending the public schools in Highland Falls. The authorities of that village complain of this, and object to the burden it imposes upon the village. They claim they have expended in the past year the sum of \$1,800 for the education of West Point children, an amount their community is entirely too poor to spare for work the expenses of which they feel the United States is honorably bound to bear.

The provisions made for the improvement of the Military Academy include an adequate school building for children. If a sufficient appropriation can be obtained from Congress, it is the purpose to establish with it a regular graded school, on the same basis as the State schools and governed by their regulations. It will require but a small annual appropriation—not over \$3,000. That amount will be sufficient to employ an excellent male teacher at \$1,000 a year as principal, and three women at \$500 each as teachers. The balance of the appropriation will keep the school supplied with the necessary equipment.

If the above matter finds favor with the Board of Visitors, I respectfully recommend that mention be made of it in their report.

Very respectfully,

A. L. MILLS,

Brigadier General, U. S. Army, Superintendent.

Brig. Gen. JOHN M. WILSON, U. S. Army,

President Board of Visitors, West Point, N. Y.

OFFICE OF THE OFFICER IN CHARGE OF THE CHILDREN'S SCHOOL,

West Point, N. Y., May 25, 1904.

GENTLEMEN: On the matter of the improvement of the children's school at this post there are a few points that will be well to emphasize in order to lead to a clear understanding of the situation.

The Superintendent asks that Congress authorize the employment of a few permanent licensed teachers in this school in the manner that is now compulsory in most States of the Union. The purpose of this request is to supplant the present irregular use of enlisted men without license or experience for teaching. To most American people this demand needs no further explanation. The conditions at West Point are unique in the Army from the fact that the soldiers stationed here are not subject to change of station. Many of them have been here for twenty, thirty, and forty years. Some of them were born here. In the Army generally the marriage of soldiers is discouraged and the reenlistment of married soldiers is actually forbidden without special permission.

The exact reverse exists here. These troops all form a part of the Military Academy; they are not borne on the rolls of any battalions or regiments of the Army, nor are they under department or brigade commanders, but are part and parcel of this academy. Many of them, in fact, are not soldiers but enlisted laborers. They

are the carpenters, painters, blacksmiths, wheelwrights, teamsters, etc., who do the work of maintaining this large plant. In addition there are some cavalry, artillery, engineers, and band who perform strictly military duties but who are to an equal extent fixtures of the Military Academy. They belong to this institution and some of them have never been anywhere else. Under these circumstances the ban on their marriage is removed. The result of this is that while at large military posts there will be for short periods ten to twenty soldiers' children, at this post there are nearly two hundred and fifty children of school age.

It has been stated in Congress that while the request for money to maintain a few certificated teachers at this school seemed just in itself, that such appropriation would be a precedent upon which the demands for similar appropriation for a number of military posts would be based.

Now, there is no other post in the Army which has the great number of children to educate which we have here, and there is no other post which has a fixed garrison.

At every post in the Army the regulations contemplate either that a school shall be organized by the detail of soldier teachers, or that the few children may be sent to the nearest civil school. The latter is always done where the post is close to a free school district. In these cases the children are usually packed into an ambulance and sent off to such school every morning. There is probably no post in the Army where they could load up two ambulances with school children.

In our school we are now endeavoring to educate 116 children up to the seventh grade, New York rating. Seventy-one more children are sent by their parents to Highland Falls, a distance of 3 miles in some cases. Many other children for this lack of facilities leave school younger than would otherwise be the case. Our school can not help them beyond the seventh grade, or, roughly, somewhat short of completing a grammar school education. Certainly the ambition of these humble soldier people which prompts them to send their little tots of 9 and 10 to 15 years every day over such distances, facing the severities of such winters as the last, in order that the children may obtain the knowledge which the parents themselves have lacked, is admirable.

It must then be clear that the conditions of this place are unique in the Army.

There are 250 children of school age here, most of them born in their present homes and expecting to live here indefinitely.

The State of New York forbids the employment of any teacher who does not hold the certificate or license issued by constituted authority for that purpose. We employ not only teachers without license or even experience, but we are limited by law to the employment of men for the very delicate task of developing the minds of these little children.

These men by the limitations of service are removed frequently and at the most inopportune times. We are now on the eve of the New York State regents' examination and we have this week lost one teacher, a soldier, whose enlistment has just expired. A cavalry soldier has been sent to take his place, a man without certificate or license to teach in this State. It is needless to say the year's work in that school can not now be brought to the proper degree of proficiency to pass the annual examinations.

Think of the feelings of American parents when they see their children thus buffeted about during the few years available for their education.

Within their limitations too much praise could not be given the present soldier teachers for the fidelity, patience, and loyalty, but these estimable traits do not make a trained teacher, and we must have women for our little children at any rate.

What then shall be said of a community under the exclusive control of the United States where 250 children are waiting to be educated, where the employment of licensed or certificated teachers is impossible, where a thorough common school training is denied except by going long distances to impose upon the long-suffering

generosity of a civil community. There is in this matter the most serious responsibility for some party, which here seems to be the United States.

In the history of our national development no point stands out more strikingly than the promptness and the infinite care with which every community has established its free schools. The poorest of communities have everywhere started them in order that good schools might be provided to train the coming citizen. In the adjacent small town of Highland Falls, a union free school is maintained, which in its essentials I have not seen excelled throughout Massachusetts.

What is needed at West Point is a first-class public school. The military conditions are unique, and these children simply must be educated.

It is difficult to make people believe that such gross violation of the cardinal American practice has existed so long under the shadow of the Military Academy.

Very respectfully,

M. J. McDONOUGH,

First Lieutenant, Corps of Engineers, Officer in Charge of School.

THE BOARD OF VISITORS TO THE MILITARY ACADEMY,

West Point, N. Y.

ARMS AND EQUIPMENT.

Present condition.—We find the Military Academy provided with the following arms and equipment:

ARMS.

Twelve 3.2-inch B. L. steel rifles, model 1897.

One Colt automatic gun, caliber .30.

Two Gatling guns, caliber .30 (10 barrels), model 1897.

One Hotchkiss B. L. mountain gun, caliber 1.65 inches.

Four Vickers-Maxim R. F. mountain guns, caliber 75 millimeters.

Two 5-inch B. L. siege rifles, model 1898.

Two 5-inch B. L. siege rifles, model 1890.

Two 7-inch B. L. siege howitzers, model 1890.

One 8-inch B. L. rifle, model 1888.

One 12-inch B. L. steel mortar, model 1890.

Six 7-inch B. L. steel mortars, model 1892.

Five hundred and twenty-two United States magazine rifles, caliber .30, model 1903.

Equipment.—Without giving details, the equipment is complete in every respect, not only for the purposes of the instruction of the cadet in military science, but in gymnastics, riding, and various exercises. The academy is furnished with the ordinary equipment used for camping and cooking in the regular service in the United States Army, and the cadets are able to and do make practice marches across the country from the academy, camping at various places, and receiving in this manner information as to how such marches are conducted in the regular service.

In this connection we submit herewith report of Maj. F. E. Hobbs, Ordnance Department, U. S. Army, and instructor in ordnance and gunnery, which communication we have examined and fully approve.

Modern seacoast battery.—Special attention is called to the report of Major Hobbs (attached hereto) relative to the establishment at this

post of a modern seacoast battery. It is the opinion of the superintendent and officers in charge of the Academy here that such battery is not needed, and this board concurs in this opinion:

First. Because such battery would be very expensive;

Second. Because no satisfactory target range could be found for practice for such battery, and

Third. Because we think that the very best results in the instruction of the cadets in handling this class of artillery can be obtained by periodical visits by the cadets to some seacoast battery, say at Sandy Hook, or elsewhere near by, at which place suitable targets are established, officers thoroughly familiar with this branch of the service are in charge, the fortifications are of the most approved and modern character, and altogether the cadet would receive more accurate information relative to the use of such artillery than could be given with the use of a battery at this post. Such visits would prove a pleasant recreation for the cadets and would not be expensive.

Target ranges.—The present target range for small arms is insufficient for the use of the improved rifles with which the cadets are now supplied, the range being 600 yards; but arrangements are now being made to extend this range to 1,000 yards. Considering the character of the improved rifle, we believe that this range could with advantage be extended. There is no range at this post for heavy artillery, and from our observations none can be provided. A fairly good range for light artillery is found on the present reservation.

Needed arms.—The board is of the opinion that a complete battery of the new 3-inch field guns, model 1902, adopted by the War Department, is very much needed, and we are informed that application has been made for the same and that it is expected that such battery will be supplied by the War Department in the near future.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 25, 1904.

SIR: Complying with request of the Board of Visitors to submit in writing my views on the subject of the armament of the post, with such suggestions as to additional armament as, in my opinion, is necessary, I have the honor to inform you that the arms and armament for the Corps of Cadets are of excellent quality, of the latest service model, and sufficient in quantity for proper instruction.

As new models of guns, etc., are adopted for the service from time to time, the first products of the arsenals are issued for the use and instruction of cadets.

For example, the corps is now armed with, and is the first organization to receive, the United States magazine rifle, caliber .30, model of 1903. This and other similar early issues have been made in recent years to the end that the young officers may be thoroughly familiar with the working of service material when they join their commands.

Commencing an enumeration with the smaller calibers, the armament of the post consists of the automatic and machine guns of so-called musket caliber, the Colt and Gatling; the mountain guns, Hotchkiss 2-pounder and Vickers-Maxim 15-pounder; the field guns of 3.2-inch caliber; the siege guns, howitzers, and mortars of 5-inch and 7-inch caliber; and the seacoast guns and mortars of large caliber, 8-inch and 12-inch.

All these are used in the practical instruction of cadets, and in addition theoretical instruction is given in regard to various rapid-fire gun breech mechanisms and the working of other automatic guns, all in connection with the handling of working models or actual guns, so the graduate may be fairly familiar with the mechanical principles involved, and will probably not be at a loss to readily understand the operation of any gun he may meet.

A new 3-inch field gun and carriage, model of 1902, has recently been adopted for our service and is now being manufactured in considerable number. I assume that so soon as they are produced issue will be promptly made to this post and, this accomplished, the academy will have a perfect modern armament in every respect except as to a seacoast battery.

The question of supplying a model battery of this character, with complete armament and equipment, has been very carefully considered and discussed during the past few years, and a proposition to erect such battery has received favorable recommendation. In its absence, however, and in view of the possible danger attending the firing of heavy guns with service charges at this place, a plan has been adopted during the past two years of sending the first class, in charge of the instructors of ordnance and gunnery, to the Sandy Hook Proving Ground and Fort Hancock, N. J., to obtain some practical experience in the handling and firing of heavy ordnance of all kinds. These visits have proved to be of great value, and the reports of the visits submitted by the cadets have shown that they absorbed a very considerable amount of information.

Considering on one hand the cost of a model battery, that firing could only be conducted here in any event with very reduced charges, that the cadets get in touch with all that is newest at Sandy Hook, and that the selection of a proper site for such a battery is especially difficult, and on the other hand, the good which is accomplished by the visits which have been made, I am inclined to the belief, from this experience, that it would be wise to let the proposition to erect such model battery remain in abeyance and to continue, and possibly extend, the plan of visiting places in the vicinity, where all that is desirable in this particular direction may be attained.

As a matter of possible interest to the board I may state that the programme for the visit of the class to Sandy Hook on the 7th of this month included:

Inspection of Battery Hallack and its armament.

Firing 12-inch gun, model of 1901, mounted on disappearing carriage.

Explosion of torpedo shell buried in sand on beach.

Inspection of 16-inch gun and torpedo shell crater.

Inspection of mortar battery.

Firing two salvos, at moving target, from mortar battery.

Firing high explosive shell from 7-inch Howitzer.

Firing 6-inch semiautomatic rifle.

Firing 5-inch and 15-pounder rapid-fire guns.

Firing Vickers-Maxim, 1-pounder automatic "Pom-pom" gun.

Firing shrapnel from new 3-inch field gun, at ranges from 300 to 500 yards.

On another visit to the Watervliet Arsenal, made by the first class in January each year for practical instruction, the following points were directed to be inspected, observed, and explained, and later to be reported upon by the cadets:

Engines and transmission of power.

Tool dressing, hardening, grinding, etc.

Hognose, reamer, and rifling tools.

Inspecting instruments and comparator.

Rough-finished forgings.

Machines and their driving.

Operations on the various machines.

Capping projectiles and manufacture of pads.

Crane operation.

Breech mechanism assembled.

A shrinkage operation.

The cost of these visits is now a considerable charge against the pay of the cadets and if they are to be continued, taking the place of instruction here and saving the cost of erecting a battery, it has been suggested by one of your members that it would be only fair to have all the costs of the visits covered by a special item in the Military Academy appropriation bill. In conformity with that suggestion I will submit an item to the Superintendent for incorporation in the next annual appropriation bill, if approved.

With reference to the instruction in the department of ordnance and gunnery, I may say that I believe it is in quite satisfactory condition, but steps are being taken to include in the course more of the elements of mechanical engineering than are now taught, and I hope in the next few years to see a very considerable increase in the amount of instruction in this direction, both theoretical and practical, for a knowledge of such subjects has come to be of primary importance to a very large majority of the graduates of the Academy.

Very respectfully,

F. E. HOBBS,

Major, Ordnance Department, U. S. Army,

Instructor, Ordnance and Gunnery.

Brig. Gen. JOHN M. WILSON, U. S. Army,

President of the Board of Visitors.

[Indorsement.]

HEADQUARTERS UNITED STATES MILITARY ACADEMY,

West Point, N. Y., May 25, 1904.

Respectfully transmitted to the president of the Board of Visitors.

The views of the instructor of ordnance and gunnery with respect to the installment of a model seacoast battery at West Point are approved.

In addition to the instruction cadets of the first class have received on visits to the Sandy Hook Proving Ground and Watervliet Arsenal, it is proposed to obtain authority to send the members of the first class to Fort Totten, N. Y., this summer to give them the benefit of three days' drill and instruction with the seacoast armament and submarine defense installed at that post.

A. L. MILLS,

Brigadier-General, U. S. Army, Superintendent.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,

West Point, N. Y., May 26, 1904.

GENTLEMEN: In compliance with your verbal request of this morning, I have the honor to report that the armament and the camp and garrison equipment on hand for the practical military instruction of cadets are excellent and up-to-date in every respect, except as to a model seacoast battery. The views of the instructor of ordnance and gunnery, and also my own, with respect to the installation of a model seacoast battery at West Point, were set forth in a communication forwarded to the president of the board yesterday.

The practical military instruction of cadets is so comprehensive that on graduation they are sufficiently trained to take up immediately on joining their regiments the practical duties falling to subaltern officers serving with troops. Throughout the graduating year the members of the first class are detailed in turn by roster for all duties, drills, and exercises, and every possible opportunity is given each member to

exercise command and to perform as many as possible of the duties which devolve upon subaltern officers of the Army.

In the department of tactics the work accomplished embraces infantry, cavalry, and artillery drill and exercises, tactical and minor tactical exercises, target practice, tent pitching, field intrenching, mountain gun and pack instruction, practice marches of the three arms, and field exercises, stable management, and company administration. A detailed account of the practical work done last year will be found in the report of the commandant of cadets which is attached as an appendix to the report of the Superintendent for 1903, and copy of which has been furnished each member of the board. The scope of the practical instruction of cadets in military engineering will be found in Appendix C of the same report. The equipment in both these departments is ample and excellent in every respect. The target range for small-arms practice is somewhat restricted, but plans are under consideration to extend this range by moving the West Shore Railroad tracks to the east of Target Hill, and this, when accomplished, will give an excellent and ample target range. The range is now equipped with excellent butts and targets—ten short and mid-range and two long-range targets. An excellent and suitable range for field artillery is found in Eagle Valley, making Crows Nest Mountain the target, and this practice is carried on without danger to neighboring communities.

The commandant of cadets has informed me that he has already furnished the detailed information you desire covering the armament and other parts of cadet equipment, and herewith I append a memorandum of camp equipage and transportation available for their use.

Very respectfully,

A. L. MILLS,

Brigadier-General, U. S. Army, Superintendent.

THE PRESIDENT OF BOARD OF VISITORS,
West Point, N. Y.

LIBRARY.

It is earnestly recommended that Congress shall continue to make liberal appropriations for the library of the Academy. Separated from the large libraries of the great cities of the nation it is absolutely necessary for the instruction of officers and cadets that this library should be fully equipped with all modern, scientific, and military works as rapidly as they appear, and that everyone connected with the institution should have the opportunity of consulting maps and publications not only in reference to our own country, but in regard to the entire civilized world.

The history of the Military Academy forms an important portion of the history of our country. Its graduates have held the highest positions in the gift of the nation and the blood of its heroes has reddened many battlefields.

Its students come from every walk of life and all stand upon the same social plane from the moment they reach the Academy, class standing and military rank being determined by the ability, strict attention to duty, and the soldierly qualifications of the cadet.

The members of the board are more than ever impressed with the grandeur of the institution which has recently passed its centennial

anniversary and believe that to-day it stands at the head of the great military schools of the world.

In closing its report, the board desires to express its high appreciation of the courtesy and assistance it has received in the discharge of its official duties, not only from Gen. A. L. Mills, the gallant and accomplished soldier in command of the Academy, but from every officer and cadet connected with the institution with whom it has come in contact.

Respectfully submitted.

JOHN M. WILSON,
Brigadier-General, U. S. Army, Retired,
President of the Board.

HERNANDO D. MONEY,
Vice-President.

BREWSTER O. HIGLEY,
Secretary.

JAMES R. CARNAHAN.

A. G. WEISSERT.

A. P. WOZENCRAFT.

ALLAN C. BAKEWELL.

FRANCIS E. WARREN.

R. F. BROUSSARD.

HENRY VAN KLEECK,

THADDEUS M. MAHON.

GEORGE W. PRINCE.

The SECRETARY OF WAR,
Washington, D. C.

ADDENDA TO THE REPORT OF THE BOARD OF VISITORS.

REPORT OF THE COMMITTEE AT THE GRADUATION EXERCISES AFTER THE RETURN OF THE CORPS OF CADETS FROM THE LOUISIANA PURCHASE EXPOSITION.

WEST POINT, N. Y., *June 15, 1904.*

As indicated in the letters of the Secretary of War to the members of the Board of Visitors appointed by the President of the United States to attend the annual examinations at the United States Military Academy for the present year, the academic year practically closed on Saturday, May 28, and on that day the Corps of Cadets left West Point for the purpose of visiting the Louisiana Purchase Exposition at St. Louis and remained absent until Friday, June 10.

On May 28 the Board of Visitors ordered that when it adjourned on that day it should adjourn to meet on Monday, June 13, when, in accordance with the suggestion of the Secretary of War, a committee of the board would reconvene at West Point and remain until after the conclusion of the graduating exercises on the morning of June 15. Authority was given this committee to adjourn the board sine die immediately after the graduation of the first class, Corps of Cadets.

In accordance with the instructions of the full board, a majority of the committee met at West Point on June 13 and remained on duty until after the close of the graduating exercises.

The ceremonies at graduation were deeply interesting and impressive, eloquent addresses being made by Gen. James R. Carnahan, a member of the Board of Visitors; by Hon. William H. Taft, Secretary of War, and by Lieut. Gen. Adna R. Chaffee, Chief of Staff of the United States Army.

The class was the largest ever graduated from the United States Military Academy, consisting of 124 young gentlemen, representing nearly every State in the Union.

The committee present at the closing exercises consisted of Brig. Gen. John M. Wilson, U. S. Army, retired, president of the board; Hon. George W. Prince, Member of Congress; Gen. James R. Carnahan, of Indiana; Mr. Henry Van Kleeck, of Colorado, and Col. Allan C. Bakewell, of New York.

After the delivery of the diplomas by the honorable Secretary of

War, the committee, in accordance with the authority conferred upon it, declared the Board of Visitors of the United States Military Academy for the year 1904 to be adjourned sine die.

Respectfully submitted.

For the members of the Committee:

JOHN M. WILSON,
Brig. Gen. U. S. Army, Retired,
President Board of Visitors for 1904.

THE AMERICAN SOLDIER.

AN ADDRESS TO THE GRADUATING CLASS OF THE MILITARY
ACADEMY AT WEST POINT, N. Y., JUNE 15, 1904.

GENERAL MILLS AND YOUNG GENTLEMEN OF THE GRADUATING
CLASS: Virgil wrote—

Arms and the man, I sing
* * * * *
Much labored, too, in battlefield,
Striving his city's walls to build
And give his gods a home.

The world has ever honored the soldier who has placed his life in jeopardy for his country's weal.

Poets have sung of his prowess and manly virtues; historians have exalted his name and given to mankind, for all time, the story of his achievements and valor.

In heroic figures of bronze and monuments of marble mankind has sought to evidence the love and honor due to the courage and patriotism of the soldiers who, by risking their lives, have helped to found or preserve the nations of the earth.

This day we would pay our tribute to the American soldier. We would do honor to our soldiers of the past, to those of the present, to those who are to be.

At this time, and in this place, the merits and work of the American soldier can be most fittingly mentioned. We are on historic ground, a spot made memorable by the soldiers who, by their courage, their steadfast loyalty to the cause of liberty, founded a republic.

For a century, on this rocky promontory of West Point, the United States has gathered, taught, and trained her young men to be her defenders. Her sons have, in this Academy, so learned the science of war that they have not only equaled the soldierly qualities of those early defenders and founders of the Republic, but have outstripped them in all military tactics and have equaled them in patriotic ardor and devotion to duty. From this almost hallowed ground have gone men who in after years have performed such wondrous deeds of heroism, have wrought such marvelous achievements as soldiers and soldier leaders that their fame has encircled the great round earth, and soldier and soldier leader alike now receive the honor and credit due to honest merit and worth where only the highest mentality could have

won and where only innate soldierly qualities could have stood the crucial test. To-day there will go forth from West Point Academy over six score of the courageous young men of this country, descendants of the men of the North and men of the South who have fought the battles of this nation. These young men have stood the test, the ordeal of four years of preparation, four years of faithful and arduous study and training. Many who started with them in the student campaign fell by the wayside, but to the honor and credit of these young men they have won the battle and to-day are honored as victors.

Not yet are they soldiers; they go out equipped to become soldiers.

Heroes? No. In all the world's history there have been but few heroes, but there have been many, very many, splendid, world-famed soldiers. During the Spanish-American war, when many heroes were made by "war correspondents," a wounded and battered soldier, leaning on his crutch, was greeted and asked if he was one of our heroes. The soldier straightened up as best he could, saluted the young lady, and proudly replied, "No, I am only a Sixth Reg'lar."

Each of these young men should be proud to-day that he is a West Point graduate, though not yet a hero.

The United States has made rapid strides in the past decade; her boundaries have been wondrously extended; her influence has become world-wide. Six years ago the United States was a nation, to-day a world power. Now all nations consider her strength and influence before making a move on the world's political chessboard. To our Army and Navy, strengthened as they were and ever will be by the patriotism of our citizens and citizen soldiery, is due this great development.

West Point is the alma mater of soldiers whose names and records will stand forth as the greatest military leaders the world has produced. The portraits of many of these famous soldiers adorn the halls of this Academy, and the names of others illumine the walls of the historic chapel.

There are others yet to come, and from the class of 1904 there may be some whose names shall be placed with those of Grant and Sherman, of Sheridan and Thomas, or who shall be honored by their people as are Robert E. Lee or Albert Sydney Johnston, all sons of West Point.

All can not be famous, each can be the patriotic and devoted defender of his country's honor and her flag, and can win a place on the roll of honor of the American Army.

Peace is better than war, and a well drilled, thoroughly organized army, commanded by educated, trained, and disciplined officers is the surest peacemaker with the world until the millenium shall come.

When, however, the American soldier is mentioned, the historian can not confine himself to West Point or the Regular Army. The

war of the Revolution antedated both. Praise to the officers and men of New York and Virginia, of Massachusetts and South Carolina, to the Green Mountain Boys of Vermont, and the minutemen of Pennsylvania, to the patriotic sons of each of the thirteen colonies, who, through hunger and lack of clothing, through the blasts of winter and the heat of summer fought on and on until independence was achieved—a free nation was born. They were the soldiers of the hour of need; theirs the spirit that creates and preserves a great people. The Puritan, the lover of the Christ, who in prayer and sacred song, in the church, and under the arching limbs of the grand old forests, in camp, and on the battlefield, with all Christian fervor, taught and lived that spirit of devotion to God and country that all of the skill and strength of the trained soldiery of England could not defeat or conquer.

The same Christian patriotic zeal and fervency of the early American soldier has been handed down to the armies of America, where, from the regular and volunteer alike, from the enlisted man in the ranks to the commander of the armies, with uncovered heads and in fervent devotion, rises the anthem prayer:

“Our fathers’ God to Thee,
 Author of liberty,
 To Thee we sing.
 Long may our land be bright
 With freedom’s holy light;
 Protect us by Thy might,
 Great God, our king.”

Oliver Cromwell’s army prayed and fought, sung psalms and marched to the battlefield, and history records the fact that his men were never beaten, and with their victories came the greater England.

So, too, by men and soldiers of like character, God fearing, God trusting, was this Republic established, and by their descendants has been preserved and raised to its present greatness.

This Academy is the training school of and for the nation’s defenders. Here is the boy from the farm and from the crowded city, the son of the mechanic and the jurist, the boy poor in purse, but with high resolve, and by his side the heir to great riches, the boy of foreign parentage and the boy proud of his American birthright—a battalion of as earnest, ambitious, and patriotic young men as can be found between the Atlantic and the Pacific. On one common level these young men, as American citizens, gather in the class room, in quarters, in the mess hall, together in work and sport. It is sometimes said that the tendency of West Point is to create an aristocracy, to foster class distinctions in the United States. It should be remembered that these young men are the sons of our people, are from American homes in our Northland, in our Southland, and from Plymouth Rock to the

Pacific shore, and soon will be from the islands of the seas, and no aristocratic class could be created, unless it be such distinction as brain and brawn may give, such classification as come to young men who best store their minds and strengthen their bodies by active, earnest, and honest endeavor for all phases of life's battles. There is a certain aristocracy in this country, but it is not confined to West Point men of the past, the present, nor will it be of the future; it is the aristocracy of the loyal-hearted sons of America, proud of their citizenship, proud of their country and her achievements—an aristocracy that leads men to consecrate themselves to the cause of good government, and noble, heroic purpose in life. The influence of every common school, college, and university of the land is in accord with the idea of a higher and better manhood and citizenship.

It can be no misstatement to say that the trend is toward a higher and more liberal education, whether at West Point or elsewhere—an education that gives a stronger manhood, intellectually and physically.

Emblazoned on the escutcheon of this Academy are the words Duty, Honor, Country. I would not for an instant think of changing these words. I would emphasize them, magnify them, if possible. Wonderfully potent words are they, strong in outlining the route over which the soldier should march; they should be "the cloud by day, the pillar of fire by night" to guide him. I would have the real intent of these words so thoroughly implanted on the conscience of every young man who comes under the teachings of this Academy that they would broaden the vision, ennoble the thought, raise the aspirations toward noble deeds, so as to give to West Point, give to the nation, give to the entire world the grandest personification of the American soldier, the American citizen.

I would have the honor of our American soldier, his personal honor, so deeply grounded that nought, however alluring, could swerve him from the line of truth and duty.

A personal honor, it should be, that would never bring the blush of shame to the cheek of the mother who bore him, to the sister whose pride he is, to the wife who has given him her love and intrusted to his keeping her honor and her life. Yes, more than this. It should be a personal honor that will save a man from the sting of his own conscience; for a man may deceive others; he can not deceive himself. Honor leads one to deal justly with his fellow-man. If the officer fails in this he has wronged a man intrusted to his care, has injured the service, and has stained his own honor. The best officer is he who never forgets the position of honor and responsibility with which his country has clothed him.

The bravery so often praised in poetry and song is a myth. The wonderful prowess of the American soldier is induced not by what is commonly denominated bravery, it is the putting into action of the

highest convictions of duty—duty to oneself, duty to others, duty to country—that can come to a reasoning and intelligent being.

It is said of the so-called brave man that he is unconscious of danger. If there is no consciousness of danger then there is no heroism, no courage, no daring deeds. The American soldier is a thinking, reasoning being; he realizes to the fullest extent the perils of the battlefield and meets them firmly and intelligently. You who have been in the thick of the fight, who have stood in line waiting for the signal for the charge, have seen the faces of officers and men alike grow pale, knowing as they did the fearful carnage that was to come; you who have heard the messages for loved ones at home pass from comrade to comrade, given by quivering lips in that fearful ordeal of suspense, know far better than it can be told the terrors of the moment. Those men had passed through the same experience before, had stood the test, and you knew that they would meet it again. The signal came and that entire line sprang away on its first sounding to meet the foe; many fell but the victory was won, and the world called them brave men. The American soldier meets the shock of battle because of his loyalty to his country, loyalty to the comrade by his side; further, because of a conscious sense of duty, and lastly, but not least, because of pride, personal honor, preferring death rather than that a stain should be placed upon his name as an officer, as a soldier, as a man.

In the hottest of the fight, when the roar and din of the battle is in your ears, when men are falling away from your side, the thought comes, What will be said of me if I falter or fail in the discharge of my duty, and with the thought pressing on you new resolves come, and with your comrades you press on. It has been the personal honor of the soldier that on many, very many battlefields, has changed defeat into victory. It has been the inborn fear of shame and disgrace that has won the severest battles of the world, and not poetic bravery that brought victory.

At the beginning of the civil war an aged father parted with his son, who had enlisted, with these words: "Good-by, my boy; God bless and keep you;" then, looking into the face of the boy, said calmly but firmly: "I can bury you, if God wills, but never come back to your father's house with any stain on your name as a soldier; good-by, sir." Through more than four years of active service those words sounded in the ears of that young man and urged him on in many battles. Cadets of West Point, you will desire to return to West Point in future years.

In addition to his loyalty to country, the American soldier adds one more duty, which becomes one of the soldier's crowning virtues, loyalty to his comrade, a loyalty that begets and fosters a friendship stronger than all other ties which bind men together; stronger by far than that of a brother's love, unless that brother has in common with

you shared the hardships and perils of a soldier's life. In the heat and carnage of the battlefield the bonds of friendship are welded, never to be broken save by death, then leaving to the survivor the sweet memory of the name and deeds of him whom he had called comrade.

So, to the American soldier, these great principles become foundation truths on which he has builded his character, his record; truths that have made and will ever make him the greatest, the truest, the best soldier the world has produced or can produce. All his fame must be builded on duty, honor, loyalty to himself, to his comrades, to his country and his God.

"Truths serene
Made visible in beauty,
That shall glow in everlasting freshness
Pure amidst the blood and dust of conquest
Never waxing old,
But on the stream of time from age to age,
Casting bright images of heavenly youth."

Young gentlemen of the graduating class, give to your country the strongest, the noblest, the best of your manhood. Seek as true American soldiers in all honorable ways to add to the greatness and strength of your country, and thereby will you most benefit your fellow-men. He who adds to the renown of the nation gives to it that which is of more value than the acquisition of territory, more than conquest. Honors achieved by noble deeds can not be taken away by time or accident; ships, territories, and riches may be wrested from a nation, but her honor will abide. The worthy deeds of her sons make the history of the Republic so glorious that it can never be dimmed or forgotten, and the renown of the men who wrought her greatness is beyond all mischance or accident. The valorous achievements of her loyal sons shall adhere to the nation's name, and will be immortal.

May the life of each of you be so interwoven with the life of your country that you would gladly yield up all—aye, life itself in order that it might live.

Take with you the words of a distinguished American statesman: "He who lets his country die lets all things die, and all things dying, curse him; he who saves his country saves all things, and all things saved, bless him."

Be your country's defenders, her strong walls of defense.

Young gentlemen, your course in the academy is finished, your first campaign is ended, and you are victors. West Point and your country commands Forward! May all the honors of the American soldier be yours.

APPENDIXES.

APPENDIX A.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 20, 1904.

SIR: I have the honor to acknowledge the receipt of your communication of this date notifying me of the organization of the Board of Visitors. I shall take much pleasure in affording the board every facility for a thorough inspection of the workings of all the departments of the Military Academy—administrative as well as academic—and in general in doing everything possible to assist the board in its labors.

A programme of the examination and proposed military exercises has already been furnished each member. Prompt notice will be given if any change is made necessary in the programme by inclement weather or other cause. Capts. Charles B. Hagadorn, Twenty-third Infantry; Palmer E. Pierce, Thirteenth Infantry; Gordon G. Heiner, Artillery Corps, and Charles W. Exton, Twentieth Infantry, have been named to report to the board in order to assist its members in prosecuting their duties.

I hope the board will communicate with me freely, both personally and officially, upon any subject connected with the Academy which may be of interest to its members or upon which information may be desired.

It is a pleasure to express to the Board of Visitors appreciation of the very generous attitude of Congress toward the Military Academy. Under the act of June 28, 1902, an adequate plant is assured. Satisfactory progress is being made upon the plans of the new buildings to be erected under that appropriation, and it is expected the work of construction will commence during the coming summer. Congress at the session just ended has provided for an adequate water supply and the preliminary steps in this important matter have already been taken. By other liberal provisions the efficiency of instruction as well as the comfort of cadets have been also materially increased.

I desire to call upon the board at the hotel at 4.20 p. m. to-day with the members of the academic board and military staff to pay our respects to the members of the Board of Visitors, and to conduct them

to a review of the Corps of Cadets to be given in their honor. At the close of the review it will give me great pleasure to receive the members of the board, their families and friends, at my quarters, to meet the officers and ladies of the post and prominent citizens residing in this vicinity.

Very respectfully,

A. L. MILLS,

Brigadier-General, U. S. Army, Superintendent.

Brig. Gen. JOHN M. WILSON, U. S. Army,

President Board of Visitors, West Point, N. Y.

SPECIAL ORDERS, }
No. 101. }

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 20, 1904.

[Extract.]

I. In honor of the arrival at the post of the Board of Visitors a salute of 17 guns will be fired at 4.25 p. m. to-day, under the direction of the commanding officer, detachment of ordnance.

II. The Battalion of Cadets will be reviewed by the Board of Visitors at 4.30 p. m. to-day.

* * * * *

By command of Brigadier-General Mills:

F. W. COE,

Captain, Artillery Corps, Adjutant.

The PRESIDENT BOARD OF VISITORS.

APPENDIX B.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 25, 1904.

SIR: I have the honor to recommend that the Board of Visitors give attention to the matter set forth in the inclosed correspondence, and that if it approve of the recommendation made, it be mentioned favorably in the report of the Board of Visitors. The item will be submitted in the estimates for the next Military Academy appropriation bill.

Very respectfully,

A. L. MILLS,

Brigadier-General, U. S. Army, Superintendent.

Brig. Gen. JOHN M. WILSON, U. S. Army,

President Board of Visitors, West Point, N. Y.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., February 17, 1904.

SIR: I have the honor to request that when I am called before the committees of Congress in the hearings on the Military Academy appropriation bill I be authorized

by the War Department to recommend the substitution for the item in the estimates, "For pay of one associate professor of mathematics, \$2,000," the following:

"For pay of one associate professor of mathematics, \$2,500; and hereafter the associate professor of mathematics shall have the pay and allowances of a major, provided, that when a vacancy shall occur in this office, the position shall hereafter be filled by the detail of an officer from the Army at large."

The reasons governing this request are:

1. To make the position of associate professor of mathematics at the Military Academy one to be filled by detail.
2. The detailing of the associate professor from the Army will have the important result of keeping him in touch with the needs of graduates upon entering the service.
3. When the office of professor of mathematics is vacant, the fact that the office of associate professor is one filled by detail will give a wider field of selection in filling the professorship.
4. Giving the associate professor of mathematics the pay and allowances of a major places him on the same footing as the associate professor of modern languages. It is but right that this be done. Both of these departments are of great importance in the educational scheme of the Academy. Each has to deal with the same two lower classes, and each in its own way lays a foundation upon which the later work of the curriculum must rest.

The functions of the two associate professors, each in his own department, are of equal importance and demand equal ability, judgment, and skill. Each is the principal reliance of his professor in any departmental work and takes full charge of the department in the absence of the professor. It is therefore but a matter of justice to the associate professor of mathematics and to the department which he serves that he should be placed, as regards pay and allowances, upon an equal footing with his comrade who is performing corresponding duties and has corresponding responsibilities in the department of modern languages.

Very respectfully,

A. L. MILLS,
Colonel, U. S. Army, Superintendent.

The ADJUTANT-GENERAL, U. S. ARMY,
Washington, D. C.

WAR DEPARTMENT,
OFFICE OF THE ADJUTANT-GENERAL,
Washington, February 26, 1904.

SIR: I have the honor to inform you that the request contained in your letter of the 17th instant, for authority to recommend to the committees of Congress, when called before them in the hearings on the Military Academy appropriation bill, a substitute for the item in the estimates "for pay of one associate professor of mathematics, \$2,000," to the effect that hereafter the associate professor of mathematics shall have the pay and allowances of a major, and that when a vacancy occurs the position shall be filled by detail from the Army at large, etc., has been approved by the Chief of Staff and the Secretary of War.

Very respectfully,

J. S. PETTIT,
Assistant Adjutant-General.

Col. A. L. MILLS,
Superintendent United States Military Academy, West Point, N. Y.

APPENDIX C.

OFFICE OF TREASURER, U. S. MILITARY ACADEMY,
QUARTERMASTER AND COMMISSARY OF CADETS,
West Point, N. Y., May 25, 1904.

SIR: I have the honor to furnish you with the following synopsis of the organization and management of the cadet supply departments.

The departments which are under the charge of the officer who is detailed as treasurer of the Military Academy and quartermaster and commissary of cadets are the treasurer's office, the cadet mess, the cadet store, the cadet laundry.

TREASURER.

The treasurer has in his charge all moneys belonging to cadets arising from their deposits and pay.

As the first complete outfit of clothing, bedding, etc., issued to a new cadet amounts to about \$150, and since it will take many months for the savings from his monthly pay over his necessary current expenses to pay for the same, he is required to deposit on entering the sum of \$100, which sum is placed to his credit on his account.

The pay of a cadet is \$500 per annum and 30 cents per day commutation of rations, and out of this sum he pays for his subsistence, bedding, clothing, shoes, text-books, stationery, stamps, washing, and, in short, everything that enters into his personal support at the Academy, except fuel and quarters and medical supplies.

Cadets and candidates upon reporting at the Academy are required to deposit with the treasurer any and all moneys in their possession. Any candidate who does not pass his examination has his money refunded to him, less the cost of his board at the cadet mess during his stay at the Academy, and any charge for loss of or damage to furniture issued to him for his use pending his examination.

The treasurer opens an account with each cadet, the same as a bank does with a depositor, crediting him with his deposit, and each month with his pay, and charging him with all sums expended on his account that have the approval and authority of the superintendent. Every two months the cadets' account books are settled, showing to each cadet the state of his account with the treasurer, and a statement in detail of receipts and disbursements on his account during the two months.

Each month each and every cadet signs the muster and pay rolls, which, after examination by the treasurer to insure their correctness, are forwarded to the proper paymaster, United States Army, for payment. Payment consists in depositing the net amount on the rolls with the assistant treasurer of the United States, New York, N. Y., to the credit of the treasurer, United States Military Academy.

The books necessarily kept by the treasurer consist of a ledger, statement book, daybook, cash book, authority (to contract indebtedness) book, and check book.

Ledger accounts are kept as follows: Assistant treasurer, Athletic Association, Balance paid, Barber, Cadet (petty) cash, Cadet hospital, Cadet laundry, Cadet store, Cadet mess, Confectioner, Dentist, Deposits, Equipment fund, Expressage, Dialectic Society, Gas fund, Hops and germans, Miscellaneous fund, Miscellaneous items, Oath, Paymaster, Periodicals, Photographer, Policing of barracks, Young Men's Christian Association, and "Corps of Cadets" account in the ledger.

The treasurer's accounts are inspected every two months by an officer detailed by the Superintendent for the purpose, said inspection officer making a report to the Superintendent of the result of his inspection.

The treasurer pays all accounts for goods purchased for and services rendered to the various branches of the cadet supply departments, and all other accounts against cadets approved, authorized, or ordered by the Superintendent, charging the same to their respective accounts in the ledger. Proper vouchers for all such accounts are kept on file in the office. He also collects all bills against officers and others for supplies and services furnished by the cadet laundry, store, and mess, crediting the same to the proper accounts in the ledger.

Such items as board, hospital, and policing of barracks, also gas and equipment fund, are charged pro rata to the individual members of the corps, other items are charged to the cadet according to what he has purchased or for which he has otherwise incurred liability.

All express and freight packages received for cadets or sent away by them pass through the hands of the treasurer, a record of same being kept in the office.

When authorized by the Superintendent the treasurer issues "authorities" to contract indebtedness for confectionery, dentistry, periodicals, photographs, etc., which "authorities" are paid when presented at the office properly accomplished.

The treasurer pays to each member of the graduating class, by check, or cash, or both, the amount found to be due him upon settlement of his account to include (except as to pay) the day of graduation. He also pays to members of the furlough class such amounts, based upon the statement of each member's account with the treasurer, as may be authorized by the Superintendent. It is also part of his duty to pay to any cadet resigned, discharged, or dismissed the amount found to be due him on the day his connection with the Academy is severed; discharged cadets being entitled, besides regular pay, to actual cost of transportation to their homes at the time of entering the Academy.

Pay due to cadets resigned, discharged, dismissed, or absent on leave at time of muster is collected from the paymaster on separate

accounts, which are subvouchers to the regular muster and pay rolls, and are paid in the same way.

Payments of small accounts authorized by the Superintendent are also made to cadets going on short leaves of absence, for reasons deemed proper by the Superintendent.

A cadet who is discharged from the Academy because of deficiency in his studies, or for any other cause, is entitled to the cost of railroad fare from West Point to the place of his residence at the time he was appointed a cadet; the amount of said fare is determined by the Superintendent of the Academy, and is paid by the quartermaster of the Academy, usually through the treasurer of the Academy, when a cadet's account is finally settled. A cadet who resigns, is dismissed, or suspended is not entitled to railroad fare.

When cadets have been found deficient and are ordered to their homes to await the action of the War Department in their cases, the treasurer of the Academy advances them a sum sufficient to transport them to their homes, provide them with a berth in sleeper, and for their subsistence en route; the sum so advanced is charged against their account and is deducted from such amount as may be due them on final settlement.

When the account of a cadet is finally settled a statement on a prepared blank is sent to him, showing all credits and charges since the date of the last settlement of his account book, together with a receipt for the remainder due him for him to sign and return to the treasurer, properly accomplished, a check on the assistant treasurer of the United States, New York, is returned by mail to the cadet.

Cadets who go on their furlough receive from the treasurer all that they may be out of debt on their accounts, and, in addition thereto, have advanced to them their pay to the 1st of August of the current year.

In addition to such pay and advanced amounts cadets receive, through the quartermaster and commissary of cadets, a suit of civilian clothing, which is charged against their August pay.

It is optional with cadets whether or not they receive such clothing; if they do not, they will not be allowed to receive, before going on furlough nor while on furlough, the money value thereof, the object being to provide cadets before starting on furlough with proper-fitting custom clothing made of the best material by a reputable tailor at the most reasonable prices, which object is most satisfactorily obtained by placing all orders for furlough clothing with one firm.

CADET MESS.

The working of the cadet mess is under the direct personal management of the commissary of cadets.

All supplies are purchased in open market in large quantities and

from first hands where possible, fruit and other perishable articles as required.

All supplies are received and cared for by a commissary sergeant, United States Army, detailed for duty in this department. A return of furniture, provisions, etc., received, issued, and remaining on hand is made every two months. This return shows everything that has been received, from whom purchased and cost thereof, everything expended, all sales to officers and others living at the post, sales of scrap food, soap grease, etc.

The period covered by a return is termed a "settlement," and covers the period embraced in two calendar months. Settlement occurs at the end of February, April, June, August, October, and December. Thus there are six settlements per year.

The subvouchers for the return are: (1) The original invoices of supplies purchased; (2) daily issues of provisions at the cadet mess; (3) daily issues of contingent property, etc.; (4) statement of sales (handed in daily to office); (5) statement of stores received during previous day to that on which it is handed in; (6) pay roll of employees.

When a return is made a board of three officers, denominated the "board of inspectors," convenes according to regulations, examines all vouchers and determines the amount each cadet shall be charged for board for the two months.

The return and the proceedings of the board of inspectors (which become part of the return) is submitted to the Superintendent of the Academy for his action. The return having received the approval of the Superintendent the treasurer settles all accounts by check on the assistant treasurer of the United States, New York (or cash), taking a receipt therefor on the face of the voucher showing the purchases.

The mess is equipped with a 10-ton refrigerating machine of the ammonia absorption type, which cools the refrigerators, chills the sterilized milk and the filtered drinking water, and makes all the ice from distilled water used in the mess.

The milk, produced on a dairy under the supervision of the authorities of the Academy, is sterilized upon receipt at the mess and kept at 40° F. until used.

Light and power is furnished by a 40 kilowatt dynamo driven by a direct connected high-speed engine. An 18 kilowatt rotary transformer is also installed as a source of power when required, current at 500 volts being available from another source, which it transforms to 110 volts for use in the mess.

Ice cream is made and ice is chopped by machinery.

Potatoes are peeled and cut or sliced by machines.

The dishes are washed and the cutlery polished by machines.

In the bakery, in a marble floored room with white tile walls, the flour is stored, sifted, weighed, and kneaded by machinery, which insures

an absolutely clean, uniform product of the best quality and increased output. Every labor-saving device possible to use is installed in the bakery.

All the storerooms are on the same level, dry and well ventilated, and in them is carried at all times such a supply of staple groceries as preclude the possibility of shortage from any temporary interruptions of the transportation lines supplying West Point.

All the clerical labor of the department is performed by a commissary-sergeant, who, in addition to the above-enumerated duties performed by him, has charge of all supplies, except the fresh meats, milk, and other perishable supplies, which necessarily are kept in the refrigerators and which are in charge of the chief cook and steward.

The chief cook, with one assistant cook, two kitchen men, two potato peelers, a fireman, and a floor man, prepares and cooks all meats, vegetables, soups, and in fact everything except bread, pastry, coffee, and tea; he keeps the soup-stock boiler in constant operation, placing therein all suitable bones, scrap meats, etc.; he renders all beef kidney fat, the cracklings from which are deposited with the soup fat, while the rendered fat is used in cooking French fried potatoes and the many other articles which require to be fried in beef fat.

The rendered fat, being pure, can be used in a great variety of ways in cooking as a substitute for lard or butter.

A chief baker and one assistant bake all breads, cakes, and pies.

Besides the above-mentioned employees of the department, there are employed 1 head waiter, 1 linen keeper, 1 waiter to every 20 cadets, he attending to 2 tables of 10 cadets each, and the requisite number of scrub women.

The fresh meats are of the best quality obtainable in the market; all groceries, fruits, and vegetables are of the best quality in every case.

A menu, the result of a consultation between the commissary and the "chef," is made daily for dinner and supper the following day and for breakfast the second morning following. This plan affords the "chef" ample time to make his arrangements ahead, and to enable the commissary to vary the menu daily and keep well informed as to expenditures. The commissary has no regular times for making inspections; he is liable to drop in at any time.

Visitors are admitted at stated times and into every part of the establishment. Thorough and complete cleanliness in every place, visible and invisible, is insisted upon.

The tea and coffee urns used are of the most modern pattern and of great capacity and are under the immediate charge of the steward.

Two 40-tube Chamberland-Pasteur filters, connected with the post water supply, filter all water used by cadets during their meals. The

water, after being filtered, passes to a tank through which refrigerating coils pass; thus the water is thoroughly chilled and filtered.

The crockery used is the white American hotel china.

The food is served in three courses: First, soup; second, meats and vegetables; third, dessert. All food unconsumed in the hall is carried out and turned over to the "chef," who disposes of it as in his judgment is best.

No employee has any perquisite outside of his wages and board. Liberal wages are paid, to the end that employees will have the interests of the department at heart and by practicing economy insure the continuance of their position and wages. Wages are as follows: Chief cook, \$75; assistant cook, \$35; first baker, \$60; assistant baker, \$30; fireman, \$25; scullion, \$25; peelers, \$17.50; steward, \$50; head waiter, \$50; waiters, \$22 each, and pantry girls, \$15 each, all monthly. All unmarried employees are furnished dormitories at the mess.

CADET STORE.

The cadet store under different forms and designations has existed from the foundation of the Academy. The object of the department is to supply to cadets, at actual cost, every article required by them for their support at the Academy, except their subsistence and their medicines.

Prior to 1876 supplies were charged to cadets at a reasonable profit. The accumulation of profits so arising in a long period constitutes the cadet store fund, and it is the possession of this fund that enables the quartermaster of cadets to anticipate the wants of incoming classes and of the classes already in the Academy, and to purchase for them and have the same on hand ready when required all of the articles of every description necessary for the proper maintenance at the Academy other than, as stated above, his subsistence and medicines.

Since 1876 an effort has constantly been made to supply all articles to cadets at cost. Congress makes no appropriation for the salaries of clerks, cutters of clothing, and janitor, and as these persons are absolutely essential to the proper conduct of the business of the department their salaries must be provided for by the department. The actual cost of the supplies furnished is, therefore, what it costs to deliver the articles over the counter to the cadet, and an advance of 5 per cent over all invoices is charged to cover the transportation and the salaries of necessary employees.

Purchases of supplies are made either by proposals or in open market, as the interests of the department require.

Some of the supplies required can not be obtained in this country, and therefore imported articles are used—such as white linen duck, used for white clothing, Lisle and Berlin gloves, gold lace for chev-

rons, and some other articles. When domestic articles can be had suitable for the needs of the cadets, preference is always given to such.

Purchases are made so as to get all discounts for cash, and the prices paid, with stated discounts, are shown on the face of every voucher, the receipt of the payee being for the reduced or net amount.

The department consists of a store and warerooms requiring 4 clerks, a tailor shop requiring 2 cutters and about 30 tailors and tailoresses employed in manufacturing and repairing clothing, and a shoe-repairing shop in which 3 men are constantly, and often more men temporarily, employed in repairing shoes; all articles of uniform clothing are cut and manufactured in the department.

The numerous articles constituting the supply list at the store, stated in a general way, are as follows: The various articles of cadets and officers' uniform clothing, cadets' head wear, foot wear, underwear, and furnishing goods, room furniture, bedding, drawing materials, and all text and reference books, numbering in all 457 separate articles.

The first Monday in each month is the regular day on which cadets submit their requisitions for articles; these requisitions are acted upon by the commandant of cadets; the cadet receives the articles designated on his approved requisition and they are then charged against him in his account book and also in the account books of the store. Should sudden necessity arise for articles, cadets then submit special applications for them, through the proper channels, to the Superintendent for his action.

In addition to the inventory book, there are books used in keeping the accounts in the store with cadets and others, as follows: One cadet ledger, 1 officers' ledger, 1 new-clothing book, 1 clothing-repaired book, 1 shoes-repaired book, 1 measure book, 1 inspection book, 1 invoice book, and 1 book for the board of inspectors.

Every article of clothing, head wear, and shoes issued to cadets is inspected by an officer detailed for the purpose.

This inspection determines the question of exactness of uniform, uniformity in the appearance of the corps, and any question which might arise in the mind of the cadet as to the fit and finish of the various articles issued to cadets that are subject to inspection.

The cadet store is essentially cooperative in its results, supplying at actual cost to the cadet the articles which he receives, giving to all articles of the same quality and supplying to each all of his authorized personal necessities.

The cadet store fund, which has arisen from the accumulation of profits, now amounts to \$40,000. It is by the possession of this cash fund that opportunity is given to purchase supplies for the store at cash discount prices. As a result, the cadet store is enabled to sell to the cadets articles at a low cash price.

CADET LAUNDRY.

The steam laundry was established in 1865. Previous to that time the washing for cadets was done by women living on the post or in its vicinity, but principally by the wives of members of the band.

In 1869 the laundry was destroyed by fire, but was immediately rebuilt, and in 1888 the laundry building was enlarged, and again in 1901 to its present size. There is in the laundry the following necessary machinery: Two 60-horsepower Fitzgibbon steam boilers; one 40-horsepower Ames automatic engine; 5 Troy brass washers, inside cylinder 36 by 62 inches, with partitions; 3 Troy 30-inch solid curb extractors, with friction pulleys; 1 Troy 100-inch duplex mangle; 1 Troy clothes tumbler; 1 Troy starch tumbler; one 50-gallon starch cooker; 1 No. 3 Troy collar and cuff starcher; 1 No. 2 Troy blower; 1 Troy 40-inch roll collar and cuff ironer, 7 rolls; 2 reversible body ironers; 2 old-style body ironers, short roll; 25 Fletcher sadiron heaters; 1 Troy roller collar shaper; 1 Troy shirt, collar, and cuff dampener; 1 Tolhurst extractor, 36 inches; 1 American body ironer, long roll; 1 Shaw collar and cuff shaper and edger; 18 short ironing tables; 12 assorting tables; 2 long ironing tables; 24 laundry baskets; 15 laundry trucks, and metal boxes into which the clothing is sorted.

The amount of work performed at the laundry is very great, as is shown by the fact that 1,114,551 pieces were laundered during the year ending June 30, 1903.

Charges for work at the laundry are such as will insure the cost of running expenses. The coal consumed is furnished by the General Government, but cost of washing material and wages paid to employees are paid out of the receipts of the laundry.

The prices charged to cadets and officers for work done at the laundry are very moderate, as the effort is constantly made to make the laundry no more than self-supporting. All the linen of the cadet mess and of the cadet hospital is washed free of charge. These two items amounted to 229,166 pieces for the year ending June 30, 1903.

The employees are as follows: One manager and engineer, 12 men and boys, and from 50 to 60 women.

Very respectfully,

THOS. FRANKLIN,

*Captain, Commissary, Treasurer of the Military Academy,
Quartermaster and Commissary of Cadets.*

Brig. Gen. JOHN M. WILSON, U. S. Army, Retired,
President of Board of Visitors, U. S. Military Academy.

APPENDIX D.

OFFICE OF THE QUARTERMASTER AND DISBURSING OFFICER,
West Point, N. Y., May 24, 1904.

SIR: In compliance with your request of the 23d instant, I have the honor to submit the following with reference to matters pertaining to the office of the quartermaster and disbursing officer of the Military Academy:

The Quartermaster's Department is in general charged with the duty of providing means of transportation of every character, either under contract or in kind, which may be needed in the movement of troops and material of war. It furnishes the public animals employed in the service of the Army, the forage consumed by them, wagons and all articles necessary for their uses, except the equipment of cavalry and artillery. It furnishes clothing, camp and garrison equipage, barracks, storehouses and other buildings, constructs and repairs roads, railways, and bridges; builds and charters ships, boats, docks, and wharves needed for military purposes, and attends to all matters connected with military operations which are not expressly assigned to some other bureau of the War Department.

The duties of this department at West Point are set forth in the Regulations United States Military Academy, of 1902, as follows:

Paragraph 13. An officer of the Army shall be detailed as quartermaster of the Academy, who shall also be post quartermaster.

Paragraph 14. The quartermaster, under the direction of the Superintendent, shall have charge of the public lands and buildings thereon; of the materials for the erection of buildings and for repairs and improvements; and of all other public property for which no other person is especially responsible. He shall also, under the direction of the Superintendent, enter into contracts and make purchases for the Academy, and shall have prepared all accounts, returns, and rolls relative to the public property under his charge and to disbursements made by order of the Superintendent; have control of the workmen employed in the erection and repairs of the public buildings or in the improvement of the grounds.

The quartermaster of the Academy thus becomes responsible for the care and maintenance of all buildings on the reservation of West Point; all roads, paths, docks, and the general care and police of the reservation. This necessitates the operation of carpenter, paint, wheelwright, blacksmith, and tin shops, equipped with proper tools and machinery.

In addition to the above the officer detailed as quartermaster of the Academy is also designated as the disbursing officer of all funds appropriated for the support of the institution, except such as are provided for the salaries of officers, cadets, enlisted men, and permanent civilian employees, which are paid by an officer of the Pay Department.

Thus all appropriations in the Military Academy bill under current and ordinary expenses for the support of the various academic depart-

ments, miscellaneous items and incidental expenses, and buildings and grounds are expended by the disbursing officer.

With the approval of the Secretary of War, the Superintendent, under date of March 9, 1904, designated the undersigned as the officer in charge of construction in connection with the new buildings and other improvements, provisions for which are made in act of Congress approved June 28, 1902.

The quartermaster is also in command of the detachment of army service men, numbering at the present time 150 enlisted men, which the recent Military Academy appropriation act has increased to 175, beginning July 1, 1904; director of the gas works and in charge of the post cemetery. Under the provisions of the guard, police, and fire regulations of the post, there is established a department of police and a fire department. The former embraces the general care of public grounds and property and the preservation of cleanliness and good order. This department is under the control of the quartermaster, who is held responsible for its efficiency, and who is assisted in these duties by an officer detailed as his assistant and known as the officer of police. A corporal and two privates of the army service detachment are habitually on duty and are known as police corporal and police privates.

With the view of placing the work of extinguishing fires in charge of one person, the quartermaster is designated as the officer in charge of the fire department.

The fire apparatus consists of two steam fire engines, two hose trucks, and one hook and ladder truck. One engine, one hose truck, and the hook and ladder truck are manned by a fire company organized from the detachment of army service men, and the necessary horse teams are always kept ready to haul this apparatus in case of an alarm of fire. The other steam fire engine and hose truck is kept near the cadet guardhouse, and are operated by the cadets in case the other apparatus is insufficient to handle the fire.

With the exception of the larger public buildings, the Quartermaster's Department has planned and constructed officers' quarters, enlisted men's barracks, stables, storehouses, and other buildings that have been erected from time to time.

To assist him in this work the quartermaster has a force consisting of an officer of the Army detailed as an assistant, one chief clerk, one superintendent of construction, one post quartermaster sergeant, five civilian clerks, the army service detachment heretofore referred to, comprising clerks, janitors, mechanics, teamsters, laborers, engineers, firemen, etc. In addition to this there are several civilian foremen in charge of heating apparatus, electrical plant, consisting of telephone and fire-alarm systems, and other electrical apparatus; one master mechanic and one superintendent of gas works. Under these men are

employed from current appropriations the necessary number of men to take care of the heating, lighting, and electrical plants and apparatus.

For the transportation of material and supplies and delivery of same at different points on the reservation the quartermaster has to maintain a stable of about 100 animals, and numerous wagons, drays, trucks, carts, etc.

For the maintenance and care of the grounds, roads, etc., he has a heavy steam road roller, rock-crushing apparatus, road sprinklers, grass-cutting machines, lawn mowers, rock-drilling apparatus, hoisting engines, etc.

For the lighting of the post and the buildings a large gas plant is operated, having a capacity of 83,000 cubic feet per day, and a small electric plant with capacity of 150 kilowatts for lighting several of the larger public buildings, and furnishing power for motors in several of them.

The quartermaster is also charged with operating a small central steam-heating plant from which the cadet hospital, cadet mess, Academy building, cadet barracks, cadet gymnasium, cadet store and the offices of the commandant of cadets are heated.

He is likewise charged with the harvesting and storage of about 3,000 tons of ice which the post requires for its consumption during the warm weather.

The post quartermaster is charged with providing and keeping on hand fuel of all kinds for heating and cooking, clothing and equipment for enlisted men, forage for public animals, and material and tools to keep the public buildings, roads, etc., in a proper state of repair.

For the proper care and maintenance of the cemetery there is a superintendent, who is a permanent employee, and several laborers, the number of which varies according to the season of the year. This cemetery was first laid out in 1816 and the total number of interments to date is 1,247. The cost of caring for the cemetery is provided for in the annual appropriation bill.

In the report of my predecessor made to the Superintendent under date of July 11, 1903, he stated that "experience in the past has shown the necessity of a receiving vault at the post cemetery due to the increase in the number of bodies which are being brought here from other places for interment in this cemetery. In this connection I desire to invite your attention to the pay of \$900 given Mr. Rhodes, the superintendent and keeper of the post cemetery, who not only has charge of the interments, but the keeping up of the grounds and everything pertaining thereto. He should really be designated as the superintendent and gardener of the post cemetery, and his pay should be raised to \$1,200 a year, for he is well worth the same, and his duties more than warrant such a raise in his pay." In both of these recom-

mendations I cordially concur. However, as it is the intention under the general plan for improvement to move the present cadet chapel to a suitable location in the cemetery and use it as a mortuary chapel, there will be no necessity for a special receiving vault, as something of this character will be provided when the chapel is moved. An effort was made last winter to have the salary of the keeper raised to \$1,200, but was not successful. This increase should be made, as the work which Mr. Rhodes does and is required to do is well worth the slight increase asked for, and his knowledge and experience in the care and maintenance of the cemetery and of landscape gardening is too valuable to lose.

The enlargement of the cadet mess, which has been going on for the past two years, has been completed, and for the purpose of giving this mess a complete plant, electrical and refrigerating machinery has been installed, which require the constant services of a competent engineer and assistant. The apparatus has cost for its installation about \$30,000. When the estimates for the Military Academy were forwarded last fall items were inserted asking for appropriations to employ an engineer and an assistant engineer for the cadet mess. After careful consideration of the character of services required the salaries were fixed at \$1,200 for the engineer and \$900 for his assistant. These salaries were considered the lowest that could be offered and for which we could get competent men. The appropriation as passed by Congress, however, allows only \$1,000 for the engineer and \$600 for his assistant. These salaries are not, in my opinion, adequate. It is true men can be obtained who will accept the positions for such salaries, but it is extremely doubtful whether they are the kind of men who can be trusted with this apparatus.

In addition to the damage which might occur through lack of knowledge on the part of the engineer or his assistant, there is also the discomfort and inconvenience which might be caused to the cadets should any serious breakdown occur, which could be avoided were competent men in charge. Should a breakdown occur in the refrigerating apparatus there would be a loss of many hundred dollars in the supplies which are kept in the refrigerators. I am most emphatically of the opinion that the salaries fixed in the estimate forwarded from here last fall, that is, \$1,200 for the engineer of the electrical, heating, and refrigerating apparatus in the cadet mess, and \$900 for an assistant engineer of the same, are the least that should be allowed for these responsible positions.

The disbursements of this office range from \$700,000 to \$750,000 per annum. Of this amount about \$600,000 come from the Military Academy appropriations and the balance from the funds allotted from the appropriations of the Quartermaster's Department at large. In

addition to these annual expenditures this office will, of course, be charged with the disbursement of the \$5,500,000 appropriated in 1902 for increasing the efficiency of the Military Academy.

It might be of interest to the members of the board to know there is reason to claim that the connection of the Quartermaster's Department with the Military Academy commences with the latter's inception. It is stated that the first suggestion of such an institution is due to Col. Timothy Pickering, Quartermaster-General of the Continental Army, as early as April 22, 1783. A committee of Congress having been appointed to propose a peace establishment for the United States, Col. Alexander Hamilton, its chairman, wrote to General Washington asking his sentiments on this subject, and Washington communicated a similar request to the principal officers then in camp. In his reply to this request, Colonel Pickering stated: "If anything like a military academy in America be practicable at this time, it must be grounded on the permanent military establishment for our frontier posts and arsenals, and the wants of the States, separately, of officers to command the defenses on their seacoasts. On this principle it might be expedient to establish a military school or academy at West Point. And that a competent number of young gentlemen might be induced to become students, it might be made a rule that vacancies in the standing regiments should be supplied from thence, those few instances excepted where it would be just to promote a meritorious sergeant."

Very respectfully,

J. M. CARSON, Jr.,

Major and Quartermaster, United States Army.

Gen. JOHN M. WILSON,

President Board of Visitors, West Point, N. Y.

(Through Headquarters, U. S. Military Academy.)

APPENDIX E.

WEST POINT, N. Y., *December 18, 1903.*

SIR: I have the honor to submit the following report upon the water supply of the Military Academy and the post of West Point.

The subject will be treated under the heads: (1) Why an increased supply is necessary; (2) The amount of water that must be supplied; (3) The sources from which the increase may be obtained; (4) A discussion of their relative advantages; (5) Estimates of cost.

AN INCREASED SUPPLY NECESSARY.

In the prolonged drought of 1900 the streams feeding the present storage reservoir all went dry, and the stored water was drawn down to a dangerous limit, showing that, under conditions that may at any

time be repeated, the present supply is inadequate for the needs of the post.

In June, 1903, the committee of the June, 1903, Board of Visitors reported all the streams supplying the post dry, the Lusk Reservoir, which should have been at that time filled to its full capacity, largely reduced, and the ordinary dry season just commencing.

These facts are sufficient to show that an increased water supply must be provided.

This committee of the Board of Visitors, after careful consideration, expressed the opinion that "The question of an adequate supply of water for the Military Academy is one of pressing importance," and "it is demonstrated that the provisions heretofore made for a supply of water must, in the near future, prove totally inadequate for the needs of the institution;" and further, "the Congress having made ample provision for buildings and grounds, and the plans being approved by the Secretary of War, as provided by law, insures a very large extension of the post in the immediate future, and makes more imperative than ever the necessity for immediate steps for an increase of water."

This matter was also investigated by a board of officers peculiarly well fitted for this duty by experience, by their intimate knowledge of this locality, and of this subject.

This board states in its report that "The present consumption of water at this post has been determined by careful measurements to be about 750,000 gallons per day; the present available storage capacity is about 110,000,000 gallons annually, enough for about five months with the present daily consumption, but involving a harmful drawing down of the reservoirs, affording practically no margin of safety, and exposing the post to the danger of a water shortage at any time of prolonged drought."

The independent opinions of these two bodies further emphasize the necessity for a substantial increase of the water supply.

THE AMOUNT OF WATER THAT MUST BE SUPPLIED.

On account of the largely increased number of buildings already authorized by Congress, the increased number of cadets that will probably be authorized, there is no doubt that the future needs of this post will be much greater than the present.

After a careful consideration of all the elements entering into the problem, the board of officers deemed it wise to provide for a future daily consumption of at least 1,500,000 gallons of water.

Subsequent study has not resulted in any modification of its recommendation.

If a source of supply can be discovered whose minimum daily yield will equal or exceed 1,500,000 gallons, the acquiring of this supply

will solve the problem in the most satisfactory manner; if such a source of supply can not be found, it will then be necessary to increase the storage capacity largely, in order to impound during times of plenty water which can be used in the dry seasons.

AVAILABLE SOURCES OF INCREASED SUPPLY.

A thorough examination and study of the lands in the vicinity of West Point has established the fact that there are but three possible sources of increased fresh-water supply, namely: (1) Bog Meadow Pond and the brook that flows from it; (2) Long Pond; (3) Popolopen Creek.

The committee of the Board of Visitors recommended a full investigation (1) of these sources of supply; (2) of the practicability of guaranteeing a full and ample supply of water under all conditions by constructing additional storage reservoirs to retain the water which now runs to waste in the rainy seasons, and (3) of the feasibility and cost of utilizing the water of the river for purposes for which it is suitable, and whether, if this were done, the fresh water obtainable from the present sources of supply would meet the demands of the post when the improvements now authorized are completed.

This committee also recommended that the United States should at once obtain options upon the Bog Meadow, Long Pond, and the Popolopen Creek properties.

SOURCES OF WATER SUPPLY AND THEIR RELATIVE ADVANTAGES.

The three available sources of increased fresh-water supply above mentioned were thoroughly investigated by the board of officers, and for a full discussion of all the questions involved attention is invited to its report. Its conclusions and recommendations are briefly summarized as follows:

First. Bog Meadow Pond: This pond lies in a fold in Crow's Nest ridge, about 1,400 feet above the level of the river; it is a small natural pond with its area and volume now considerably increased by a dam at the southern end; the area of its watershed is about 400 acres. In addition, and in connection with the pond, the Government can also obtain possession of the land for some distance along the brook leading from the pond, which would add an additional drainage area of about 800 acres. The yield from this watershed may be utilized by the construction of a single large reservoir at any one of three different sites, or by building three smaller reservoirs at three suitable sites.

The total cost with the single reservoir, depending upon its location, will vary from \$355,000 to \$431,500; the cost with the three smaller reservoirs in place of the one large one will be \$396,500.

The safe daily yield from this watershed, after proper storage is

provided, added to the existing available supply, will about answer for the increased future needs of the post.

The advantages of this solution of the question result from the facts that the area considered is adjacent to land already owned by the United States, that it can easily be guarded from pollution, and that its topographical relation to the existing reservation will allow it to be partially utilized as soon as the Government secures possession.

These advantages are offset by the limited amount of water that can thus be obtained. Furthermore, that offer, which if accepted would extend the ownership of the United States farthest down the brook and carry with it the largest amount of land draining into the brook, is coupled with the condition that a considerable amount of water—500,000 gallons per day—must be allowed to escape for the use of the village of Highland Falls, of which this watershed is the source of water supply. This would practically result in a divided ownership, and that of a property which in time may not be sufficient for the needs of either part owner, a condition of affairs which would be decidedly objectionable.

Second. Long Pond: This natural pond lies about $4\frac{1}{2}$ miles west of the Post, and just east of the pond is a ridge or divide, whose crest is about 100 feet above the present level of the pond. The water must be carried over this divide by pumping or under it by tunneling. The area of the watershed contributory to this pond is about 900 acres. The total safe estimated yield from this pond and watershed, in connection with the existing water supply, would still fall materially below the limit of daily volume established by the board as necessary for the increased supply contemplated. It would, however, go so far toward meeting the requirements of the situation that if it were the only available source of increased supply this deficiency in volume might be waived.

The board worked out careful estimates of the cost of overcoming the divide between Long Pond by pumping and by tunneling, and for each case considered the pond at its present level and also with the level raised 20 feet by a dam at the west end to provide additional storage.

Tunnel project:

Pond not raised	\$368, 000
Pond raised.....	318, 000

Pumping project:

Pond not raised	406, 467
Pond raised.....	458, 467

The principal advantage of Long Pond as a source of increased water supply would be found in the comparative ease with which its yield of water could at once be partially utilized at moderate expense.

The disadvantages are the limited size of the drainage area, the smallest of all considered, and the lack of sufficient yield; the unsatis-

factory condition of the titles to some of the land under the pond, and also the fact that the riparian rights of certain owners below the outlet of the pond would be difficult to extinguish, and that it was found impossible to arrive at a safe estimate of the cost of quieting said rights, an item which might add largely to the figures given above.

Third. Popolopen Creek: This stream has a drainage area of about 29 square miles, and carries a very considerable volume of water at all seasons of the year. The population of this drainage area is sparse, and is not likely to increase. There is now no village or other center of population in the whole 29 square miles, and, owing to the rough and rugged character of the topography, none will probably ever exist. It is not regarded as practicable for the Government to acquire all this drainage area, but it is thought unnecessary to obtain more land than is needed to secure the adequate water rights and storage facilities. This source of supply offers a volume of water practically unlimited as compared with any possible future needs of West Point. In this respect it is much more advantageous than either the Bog Meadow or the Long Pond project. In quality there is no reason to believe that the Popolopen supply would be better or worse than that of the other two, or than the existing supply, which is known to be excellent, with proper storage and filtration.

The Government has secured an offer of all the water rights along the lower course of this stream, with land on both sides of the stream, including the site for a reservoir, if ever such an increase of storage facilities is found desirable. Within the limits of the land offered to the United States there is a point where it is perfectly practicable to tap the stream at a height sufficient to enable the water to be carried to the present storage reservoir by gravity, using a pipe sufficiently large, and the owners who have offered this property have guaranteed a right of way for the necessary pipe line to the post. This pipe must be of large size, at least a 16-inch pipe, and probably a 20-inch pipe will be better, owing to its considerable length, about 7 miles, to the many bends that will have to be made, and to the fact that the height of the intake above the level of the present reservoir will possibly be not more than 62 feet.

As the low-water flow of the Popolopen Creek is considerably in excess of the amount deemed necessary by the board for the future needs of the post, an adequate pipe line will deliver all the water that the post will require for many years, and there will be no pressing necessity to build any additional storage reservoir for a long period of time.

The cost of the diversion of the needed amount of water from Popolopen Creek through a 20-inch pipe carried along the highway is estimated at \$354,333, with the storage reservoir omitted. The cost may be somewhat reduced if a right of way can be secured through

private lands, as seems probable, and still further, if study establishes the feasibility of using a 16-inch pipe.

It should be noted that all the above estimates have been carefully worked out in detail (see the "estimate sheets" hereto annexed); that they include the cost of the necessary water rights, the cost of all labor and materials to bring the water to West Point, and, in addition, the capitalized cost of operation in each case, so that they are directly comparable.

After careful study of all the questions relating to the "subject of how the water supply at the Military Academy can best be increased and made sufficient for present and prospective future needs," and "having thoroughly investigated the merits of all the existing water-supply projects" the board strongly recommended the Popolopen project as best of all, "much superior to the Bog Meadow plan, which in turn is markedly better than Long Pond."

The relative cost of these three projects is as follows, taking the cheapest plan when there are several projects for utilizing the same source of supply:

Popolopen Creek	\$354, 333
Bog Meadow Pond	355, 000
Long Pond.....	368, 000

The Popolopen Creek project is the best of all, and these estimates show it to be also somewhat the cheapest.

Referring back now to the recommendation of the committee of the Board of Visitors that the practicability of increasing the storage facilities on the reservation be investigated with a view to determining whether it will be possible thus to secure an adequate increase of the water supply, it may be stated here that this subject has been carefully investigated. So many difficulties have been found to exist, due to the topography and other vital reasons, that it is regarded as entirely impracticable to solve the question in this way.

Again, referring to the same recommendation of the same committee that the river as a possible source of supply for purposes for which its water can be used should be studied to see whether such a use of river water would render the existing supply of fresh water adequate for all other purposes, a careful investigation has been made with the following results:

It would be practicable to use the river water on the post of West Point for the following purposes: (1) Sprinkling streets; (2) fire purposes; (3) flushing present and future closets and urinals of sinks in camps and barracks and other public buildings; (4) ice machine; (5) shower baths in camp and barracks; (6) condensers of condensing engines in new central heating and lighting plant; (7) swimming tank; (8) for flushing sewers; (9) hydraulic elevators.

The river water is considered unsuitable for the following purposes:

(1) Sprinkling lawns (on account of salt); (2) steam boilers; (3) on account of the small consumption for flushing purposes in present officers' quarters it does not seem economical to make the change in the piping for so small a saving; (4) laundry purposes.

It must be remembered that if the river water is utilized then a double system of mains will be necessary, and that the salt water will cause more rapid deterioration of the mains and plumbing fixtures, which will necessitate an additional annual expenditure for maintenance, the amount of which it is difficult to estimate, but which will no doubt be considerable, and will certainly be not less than \$500 per year.

The total cost of thus using the river water for the purposes for which it is suitable is estimated to be \$121,368, including in this amount the capitalized operating expenses, as in all other estimates.

It is difficult to determine accurately what proportion of the present fresh water consumption is used for the purposes for which the river water would answer as well, but as nearly as can be ascertained this is about one-third of the daily consumption, or about 250,000 gallons.

It is reasonable to suppose that the same proportion would hold when the size of the post is increased, and that of the 1,500,000 gallons per day estimated by the board as necessary for all purposes, one-third, or 500,000 gallons, could be replaced by the river water, but this would still make necessary at least 1,000,000 gallons of fresh water per day, an amount far in excess of the present supply; in other words, even if the river water be utilized it will still be imperative to secure an additional supply of fresh water to meet the future needs of the post.

While it is true that the amount of the needed additional supply would not be so great, it must be remembered that the cost of any increase of the supply of fresh water is not proportional directly to the amount of water obtained. No matter from which of the sources of possible fresh water increased supply water may be obtained, the cost of the water rights which must be purchased by the Government will be about the same, irrespective of the amount of water taken.

The principal savings would be in the lesser cost of a smaller pipe line, the lesser cost of maintenance, and the possible lesser first cost of the necessary dams and intakes in connection with the storing of the water and the bringing it to the post. One hundred thousand dollars is a very liberal estimate of the possible total saving on any of the three projects, Bog Meadow Pond, Long Pond, or Popolopen Creek, and against this must be put the cost of utilizing the river water as above, \$121,368.

In other words, the use of the river water will not decrease the total cost of procuring an adequate water supply; on the contrary, the aggregate cost of the two systems—river water for certain purposes

and fresh water for other purposes—will be greater than the present estimated cost of providing a supply of fresh water ample for all purposes.

It may be added that, in accordance with the recommendation of the committee of the Board of Visitors, definite offers have been obtained from the owners of the water rights included in all three of the projects, and it is certain that these amounts will not be increased, provided the United States takes advantage of any one of the offers within a reasonable period.

ESTIMATES OF COST.

The total cost of each of the different projects has been given above. There are appended to this paper certain estimate sheets on which are given in detail the cost of the items considered in making up these totals.

Very respectfully,

MASON M. PATRICK,
Captain Corps of Engineers, U. S. Army,
In charge of water supply.

Copy respectfully furnished the Board of Visitors.

MASON M. PATRICK,
Captain of Engineers.

The ADJUTANT,

United States Military Academy, West Point, N. Y.

APPENDIX F.

UNITED STATES MILITARY ACADEMY,
Surgeon's Office, West Point, N. Y.

(Copy respectfully submitted to the Board of Visitors.)

MEDICAL DEPARTMENT AND MILITARY HYGIENE.

The climate of West Point is severe and variable, with extremes of temperature and frequent sudden changes. July is the hottest month, with mean temperature of about 76° and the maximum from 95° to 100°. January is the coldest, with mean temperature of about 28° and minimum of -10° to -15°. Winter begins early in December, and all outdoor exercises are impossible until April 1, or even later.

The chief advantages of this site for an educational institution, from a hygienic point of view, are its remoteness from cities and all infectious centers, good water supply, excellent natural drainage, volcanic soil, and free exposure to winds from all directions. Hence, although nasopharyngeal and bronchial troubles are frequent, they are sel-

dom serious, while acute infectious diseases are rare and epidemics unknown.

For the medical service of the post two hospitals are provided, one for officers and cadets and the other for enlisted men, both equipped with the best modern appliances and instruments. For the benefit of the families of enlisted men there is also a dispensary conveniently situated between the two hospitals where treatment and medicines can be obtained at any hour of the day or night.

The cadet hospital is capable of accommodating at least 50 patients, or 10 per cent of the present number of cadets, giving each an ample cubic space and abundant fresh air supply. As the ratio in hospital seldom exceeds 4 per cent, under ordinary contingencies, it is seen that sufficient provision has been made for the expected increase of the corps of cadets for a number of years.

Sick call for cadets is at 7 a. m., except during the summer encampment when it is in the evening, immediately after parade. At this call all sick cadets in quarters are marched to the hospital where they are examined by the surgeon and given such treatment as their condition requires; they are either kept in hospital, excused from part of their duty for the day, or else returned at once to full duty. Any cadet requiring medical attendance at other times than sick call reports to the officer in charge who sends him to the hospital and notifies the surgeon.

The sick in hospital are not permitted to leave the hospital except to perform some duty or take exercise at such times during release from quarters as the surgeon may prescribe.

The sick in quarters, that is those not requiring hospital treatment and only excused from some specific duty, are likewise confined to their rooms or tents except to perform some duty or take exercise at prescribed times.

A contagious-disease hospital, for which an ample appropriation is available, will be erected as soon as possible. Such hospital has not been much needed in the past on account of the isolation of the post; but, in view of its rapidly increasing population, its greater accessibility, and of the large crowds which daily visit it in summer and fall, the comparative immunity from infectious diseases which it has until now enjoyed can not be expected in the future.

During the fiscal year July 1, 1902, to June 30, 1903, there were 985 admissions to the cadet hospital, or at the rate of 205 per cent, the average number constantly in hospital being 12.30 or 2.55 per cent. Most admissions are for slight ailments or injuries, and, while under treatment, cadets may, if not confined to bed, study and attend recitations so that but little time is lost.

The largest number of admissions (126) for any disease was for influenza, which prevailed in a mild and subacute form during the

winter and spring, fortunately without dangerous complications or sequels. Next in order of frequency are malarial fever (99), mostly contracted in fall of 1902, indigestion and dyspepsia (93), tonsilitis and pharyngitis (71), intestinal diseases (54), and bronchial affections (52).

Of acute infectious diseases there were five cases of typhoid fever in March and April, caused by infected milk.

Of venereal diseases among cadets there were 7 cases of gonorrhoea, 1 of epididymitis, and 1 of syphilis, all of which were contracted outside the post while on furlough.

During the year 157 surgical operations were performed, the total population of the post being about 2,000. Of these operations, 57 were performed upon cadets, including 2 for appendicitis, and one for removal of kidney; all others on cadets being of a minor character, including circumcisions, evulsion of nails, tonsilotomies, removal of glands, etc.

One of the important duties of the medical department at this post is the examination of eyes, on account of defective vision, and the correction of refractive errors by glasses. It has been found necessary that one of the medical officers be an eye and ear specialist. The proportion of officers and cadets wearing glasses is constantly increasing, amounting now to about one-fifth of the whole number. This is not due to bad lighting or any other remediable hygienic defect, but is simply a local manifestation of the general weakening of the sense of sight among educated classes the world over. From February 1 to June 30, 1903, 108 persons had their eyes examined (about one-half being cadets); and glasses were prescribed for 73.

During the past ten years there has been but one death in the Corps of Cadets (in September, 1895) from remittent fever, complicated with hemophilia, giving a mean yearly mortality ratio of 0.28 per 1,000.

During these ten years three officers died (in 1895, from remittent fever; 1896, from angina pectoris; 1901, from pneumonia), giving a mean yearly mortality ratio of 4.65 per 1,000.

During the same period of ten years 11 enlisted men died; namely, 5 of disease (appendicitis, pneumonia, typhoid fever, peritonitis, and epilepsy), 2 of self-inflicted, suicidal wounds, and 4 of accidents (2 by drowning, and 2 killed by passing trains); the mortality from disease being 1.35 per 1,000. Adding together cadets, officers, and enlisted men, the mean yearly mortality for the past ten years is found to be 1.08 per 1,000.

The almost complete absence of mortality and grave acute diseases among cadets is due, in part, to the scarcity of infectious organisms in air, water, and food, but in a greater measure to their fine physical condition, which enables them to resist the attacks of pathological germs; this exceptional physical condition being the result of their regular and systematic mode of living, in which studies, drills, gymnastic exercises, and athletic games are judiciously combined.

Mosquitoes being recognized as the cause of the propagation of malarial fever, every effort was made to prevent their breeding upon the reservation, and with the most gratifying results.

There was an evident decrease of malaria from previous years, the number of cases primarily contracted on this reservation during the year having been very few. Unfortunately, from the extensive marshes on the other side of the river, half a mile distant, swarms of mosquitoes are bred and occasionally blown over to this post, causing great discomfort among cadets in their summer camp. This was remedied to some extent by issuing mosquito bars and enforcing their use.

The water supply is ample and of good quality. It is entirely collected on this reservation, and therefore completely under military supervision and control. It is naturally free from ordinary causes of contamination, but to remove any possible danger it is filtered through sand beds according to the most approved modern methods. No disease has ever been traced to its use.

The food of the cadets is of excellent quality, varied, and well prepared. The kitchen, with all its dependencies, has been entirely reconstructed and is a model of its kind. Each day's bill of fare is sent to the surgeon for his examination and criticism. Large cold-storage facilities permit the keeping of all articles in excellent condition, and in the case of meats, until they reach their best flavor and highest digestibility.

The cadet barracks, constructed in 1851, have long ceased to be satisfactory, possessing very few modern comforts and conveniences, and being defective in ventilation and lighting.

The sewerage of the post is complete and very satisfactory, having plenty of fall and unobjectionable outlets into the Hudson River. The drainage, naturally very good, has been perfected by all necessary ditches, drains, and culverts. The garbage is satisfactorily disposed of by incineration in crematory.

In accordance with existing regulations a course of lectures on military hygiene is given to the second class by the post surgeon during the months of April and May. On account of the large size of the class it is divided for this purpose into two sections, each lecture being delivered one day to the first section and the next day to the second section. In order to make these lectures more interesting and instructive all the important subjects are illustrated by numerous lantern slides. The subjects of the last course of lectures were as follows:

- (1) Object and scope of military hygiene; statistics of morbidity and mortality in the Army;
- (2) recruiting;
- (3) exercise and marching;
- (4) water;
- (5) food;
- (6) military ration;
- (7) air;
- (8) ventilation;
- (9) heating and lighting;
- (10) clothing and equipment;
- (11) disposal of excreta;
- (12) sewerage and garbage;
- (13) camps;
- (14) post, barracks, and quarters;
- (15) personal hygiene;
- (16) alcoholism and venereal

diseases; (17) the prevalent diseases of the soldier; (18) malarial fever and yellow fever; (19) service in hot and cold climates; (20) infection and disinfection.

V. HAVARD,

Colonel, Assistant Surgeon-General, U. S. Army, Surgeon.

UNITED STATES MILITARY ACADEMY,

SURGEON'S OFFICE,

West Point, N. Y., May 25, 1904.

SIR: I have the honor to submit herewith estimates of repairs, alterations, and additions to the cadet hospital required for the fiscal year ending June 30, 1906, and the following remarks upon the same:

The possible maximum number of cadets at the Academy under existing orders (so far as I am informed) is 524. It is believed that hospital accommodations for 8 per cent of that strength (or about 40) would be much more than usually necessary, and sufficient for emergencies. These accommodations can be provided by the two wards of the south wing, the large ward in the main building, and the upper ward of the north wing, leaving the lower ward of the latter wing available for other purposes.

The hospital corps is badly provided for in the third story of the main building, occupying rooms which should be reserved for officers, privates, and infectious patients. I would therefore recommend to remove completely the hospital corps from said floor and transfer it to the lower ward of the north wing (which is untiled and least suitable for patients) and to the basement of the south wing, using the ward as dormitory and the basement as kitchen and mess room. This basement, being raised above the outside level, is perfectly dry and can be made to answer this purpose in a very satisfactory manner.

Making necessary arrangements in basement of south wing for mess room and kitchen for hospital corps, including plastering, plumbing, and cooking apparatus \$1, 250. 00

The third floor of the main building of seven rooms would then become available for much needed uses—for officers; for private, dangerous, or infectious cases; for eye examination, X-ray machine.

Changing and renovating kitchen and dining room on third floor for use as wards or rooms for patients 250. 00

This floor needs a bathroom, for which there is a suitable place.

One new bathroom, third floor, with fixtures and tiling..... 1, 100. 00

As the hospital is constructed, an ambulance containing a disabled patient can not get any nearer to it than the front gate, so that the patient must be carried on a litter up the steep gravel slope and the 22 stone steps to the first floor, a difficult and even dangerous undertaking, especially in winter. It seems, therefore, necessary to provide for an easier access, and this can easily be done by an iron bridge 50 feet long and 6 feet wide, connecting the wagon road in rear with the north hallway. Over this bridge patients could be carried from the ambulance to the ward without change of level. This bridge should be connected by a stairway on each side.

Iron bridge across court, and stairways leading to court 750. 00

The operating room is necessarily large and correspondingly difficult to keep surgically clean. As major operations are comparatively rare, it is now mostly used for minor (often) septic cases, and as a dressing

room, which uses defeat the primary purposes of an operating room. It is therefore recommended that it be divided by a suitable partition into two rooms, one to be strictly reserved for serious operations and the other to be used for the daily treatment and dressing of minor surgical cases, as well as for anesthesia.

Subdividing operating room so as to make a room for minor cases, dressing, and anesthesia, with corresponding tiled walls	\$500.00
The cadet mess room is now too small, and, with the expected increase of cadets, will be quite inadequate. It can easily be enlarged by taking in the space now occupied by the kitchen and constructing a new kitchen in the basement, mess room and kitchen being connected by dumb-waiter. The refrigerating room and pantry can also be accommodated in basement.	
Enlarging and renovating present cadet mess rooms	250.00
New kitchen in basement with plumbing, cooking apparatus, refrigerator, pantry, and dumb-waiter	1,300.00
As the kitchen in the basement will block the passage from court to basement, it will be necessary to open new doors into basement from the rear, one under each hallway.	
Making two new entrances to basement	300.00
A new bathroom is necessary on the lower floor in main building, the best place for it being one of the pantries of the cadet kitchen.	
One new bathroom, first floor, with fixtures and tiling	1,100.00
The removal of the hospital corps kitchen from the third floor rendering the elevator unnecessary, the shaft can be covered on each floor, thus providing a much needed linen room on each floor.	
Making necessary arrangements to close elevator shaft and fitting up three linen rooms	225.00
The following estimates, also deemed necessary, need no explanatory remarks:	
For repainting walls and woodwork of hall, wards, lavatories, and repainting generally	600.00
For material for rebronzing radiators and piping	30.00
For a suitable prepared wax for polishing floors	50.00
For purchase of flowers and shrubs for hospital grounds	100.00
For purchase of suitable incandescent lights, droplights, mantles, tubes, etc	40.00
For carpets and furniture and appliances for cadet hospital and for repairs of damaged articles and for miscellaneous expenses	150.00
For 120 window screens to protect patients from flies and mosquitoes, at \$10 each	1,200.00
Total	9,195.00

All the above alterations and additions are recommended after examination and discussion with Mr. Goding, the architect of the Quartermaster's Department, who prepared the above estimates, and with the full concurrence of all the medical officers at this post.

Very respectfully,

V. HAVARD,

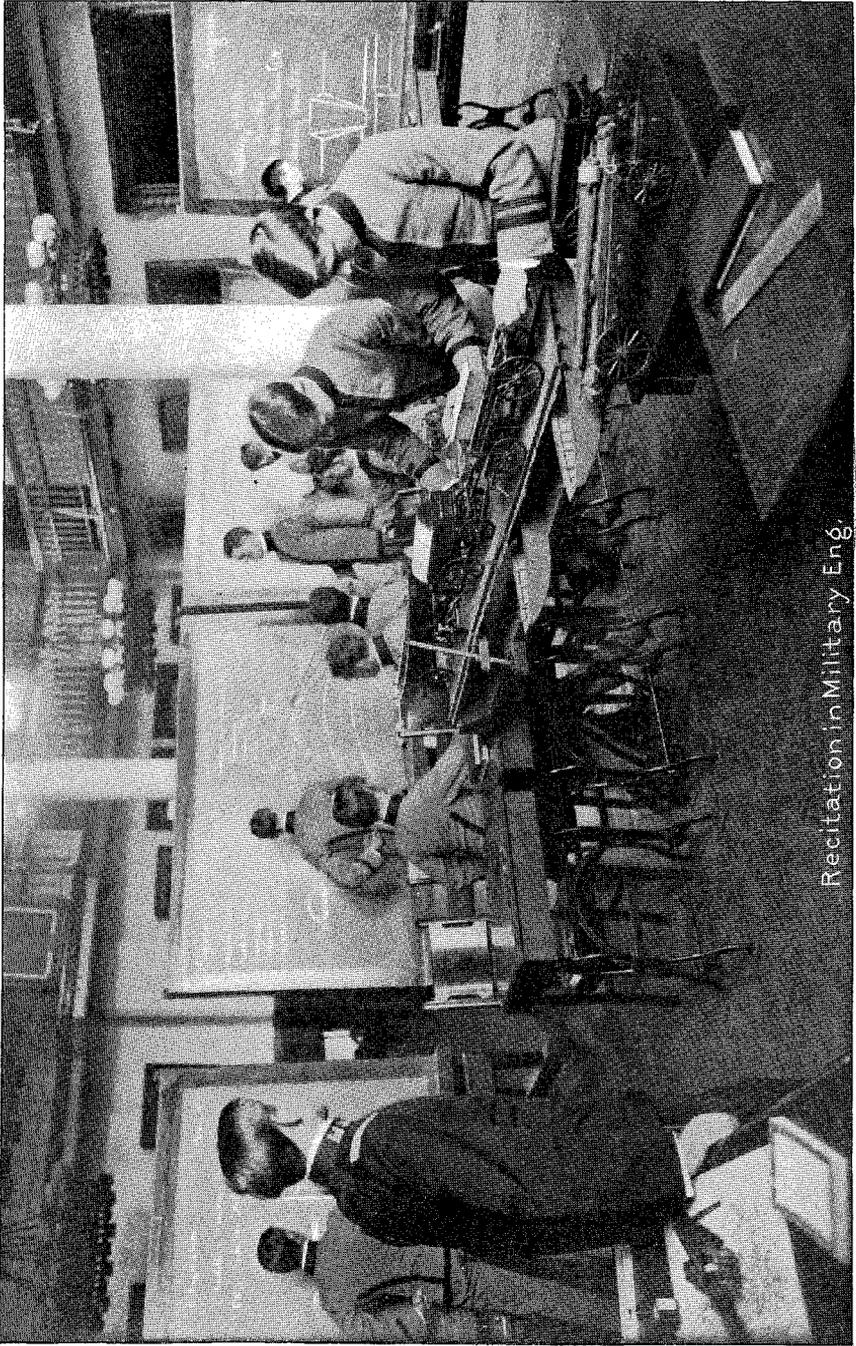
Colonel, Assistant Surgeon-General, U. S. Army, Surgeon.

The ADJUTANT,

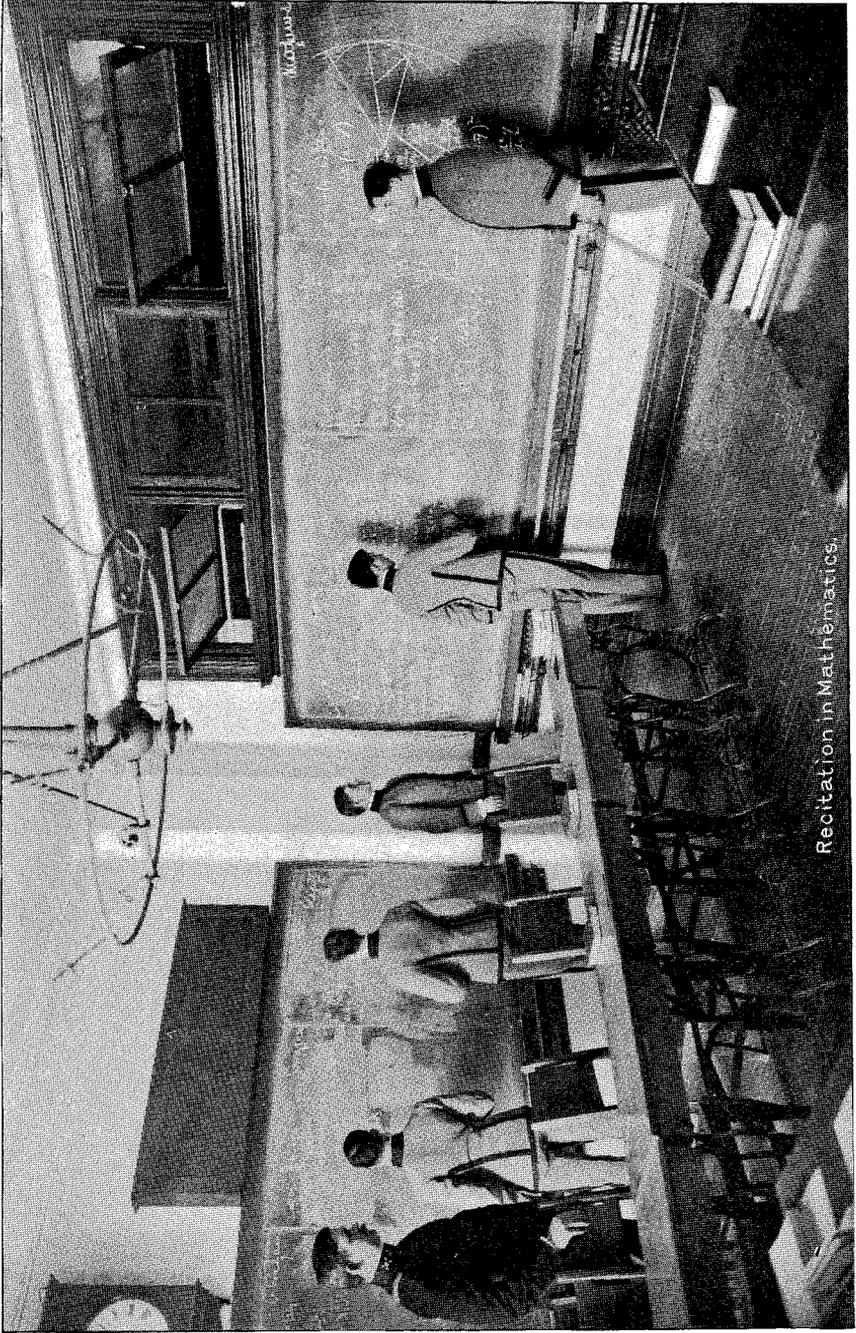
United States Military Academy.

(Copy respectfully submitted to the Board of Visitors.)

Report of Board of Visitors M. A., 1904.

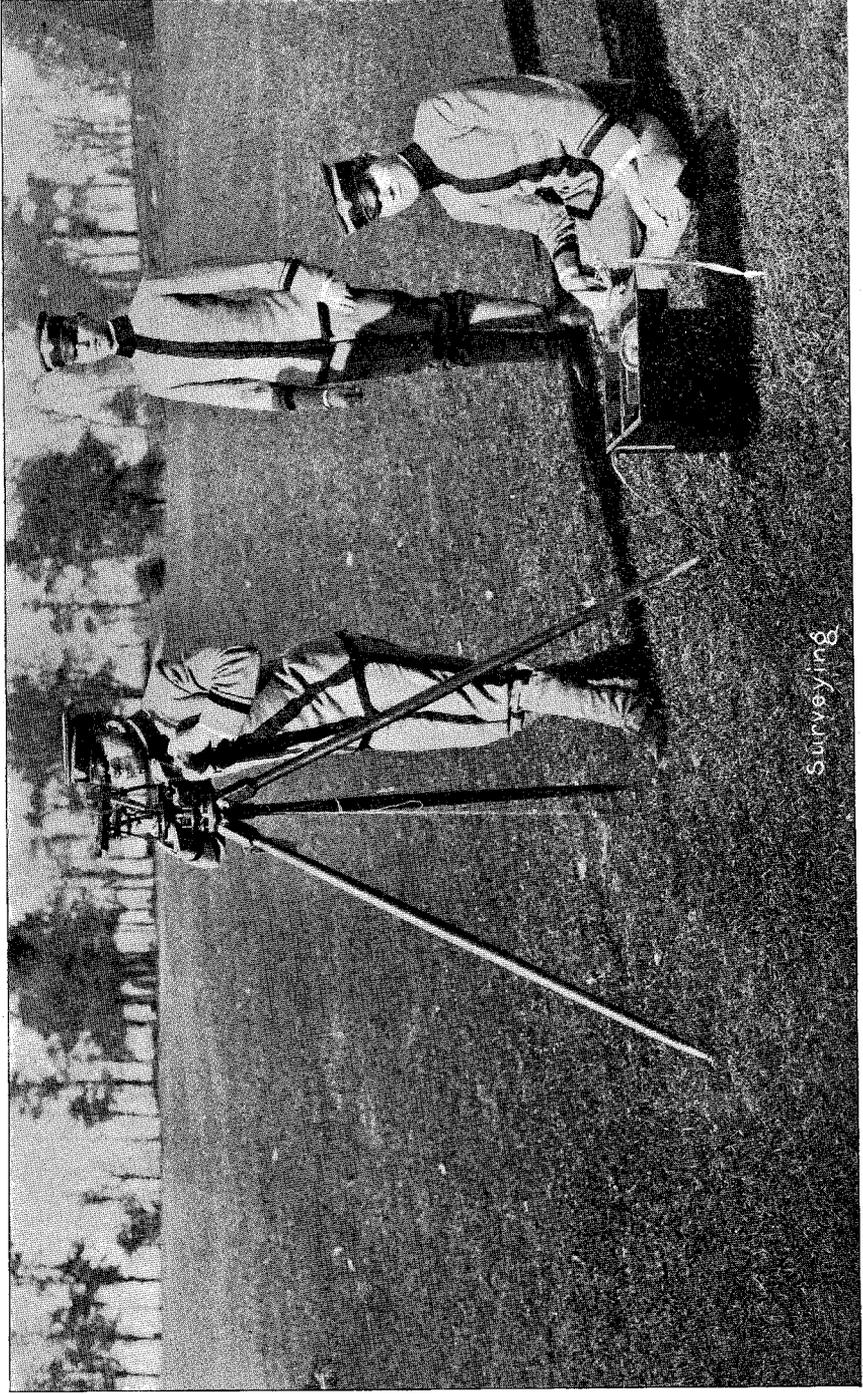


Recitation in Military Eng.

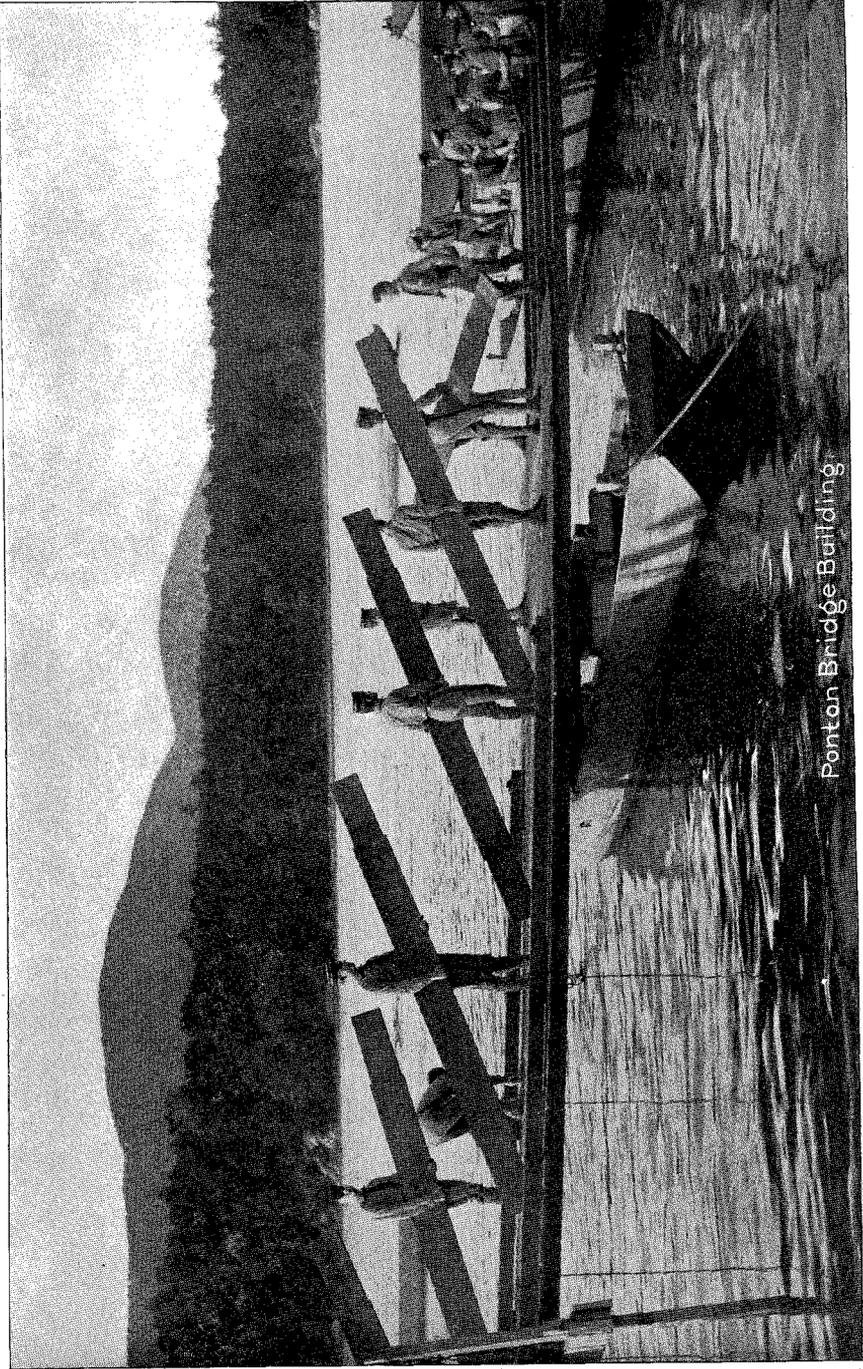


Recitation in Mathematics.

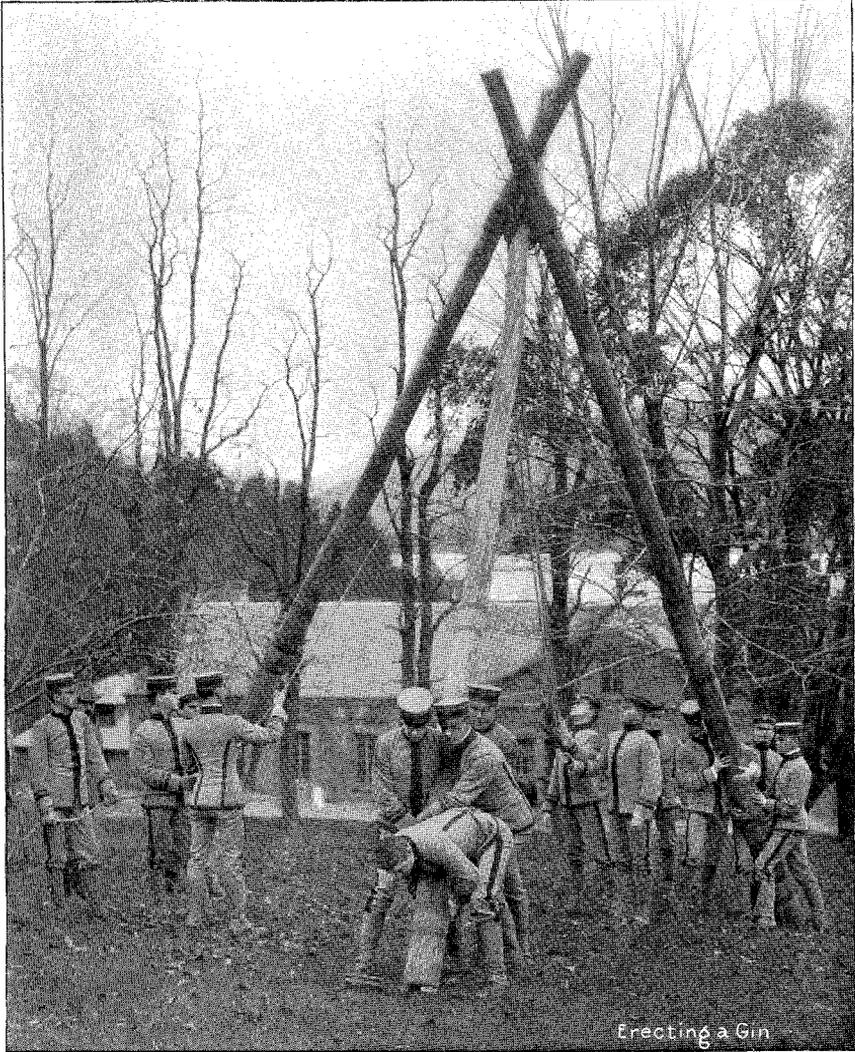
Report of Board of Visitors M. A., 1904.



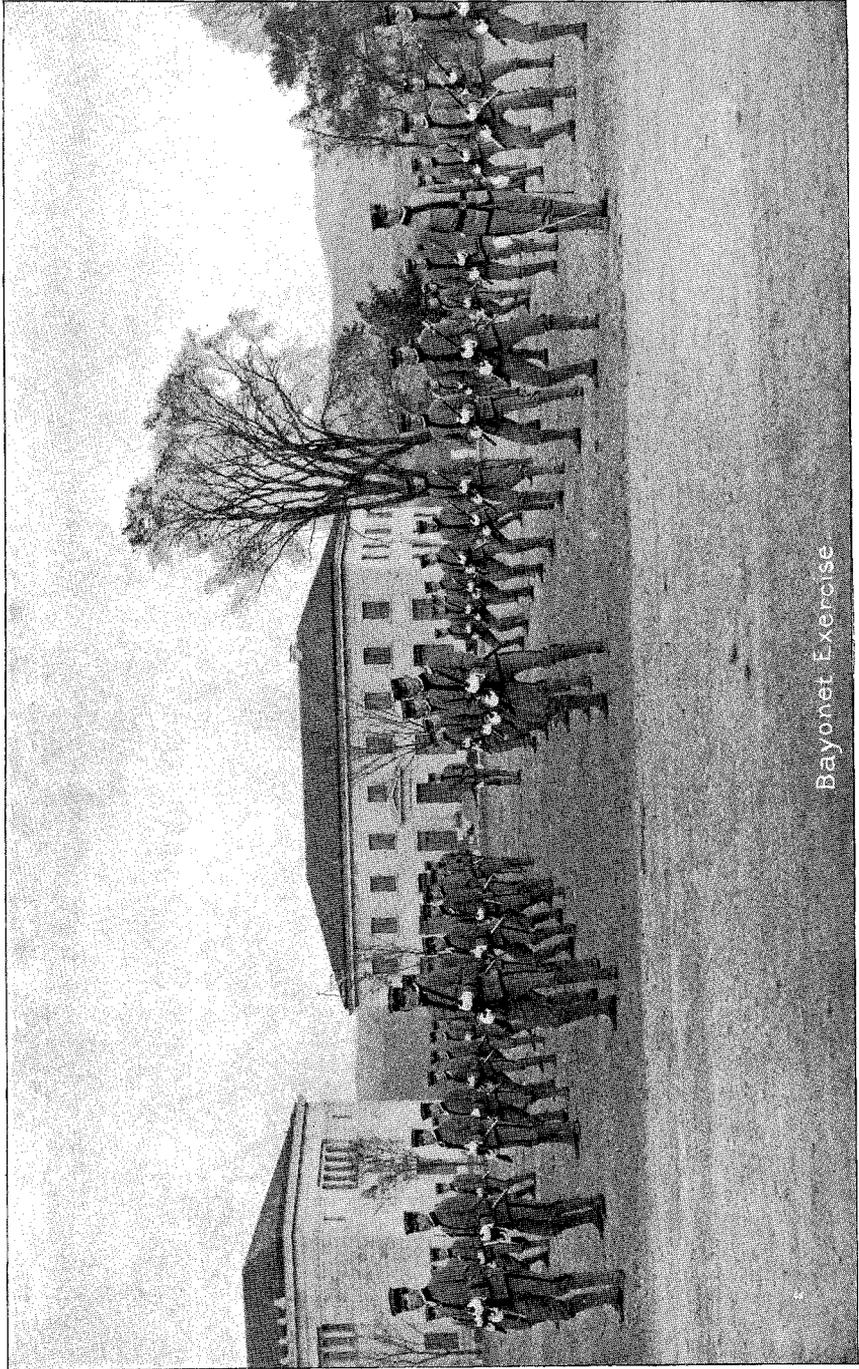
Surveying



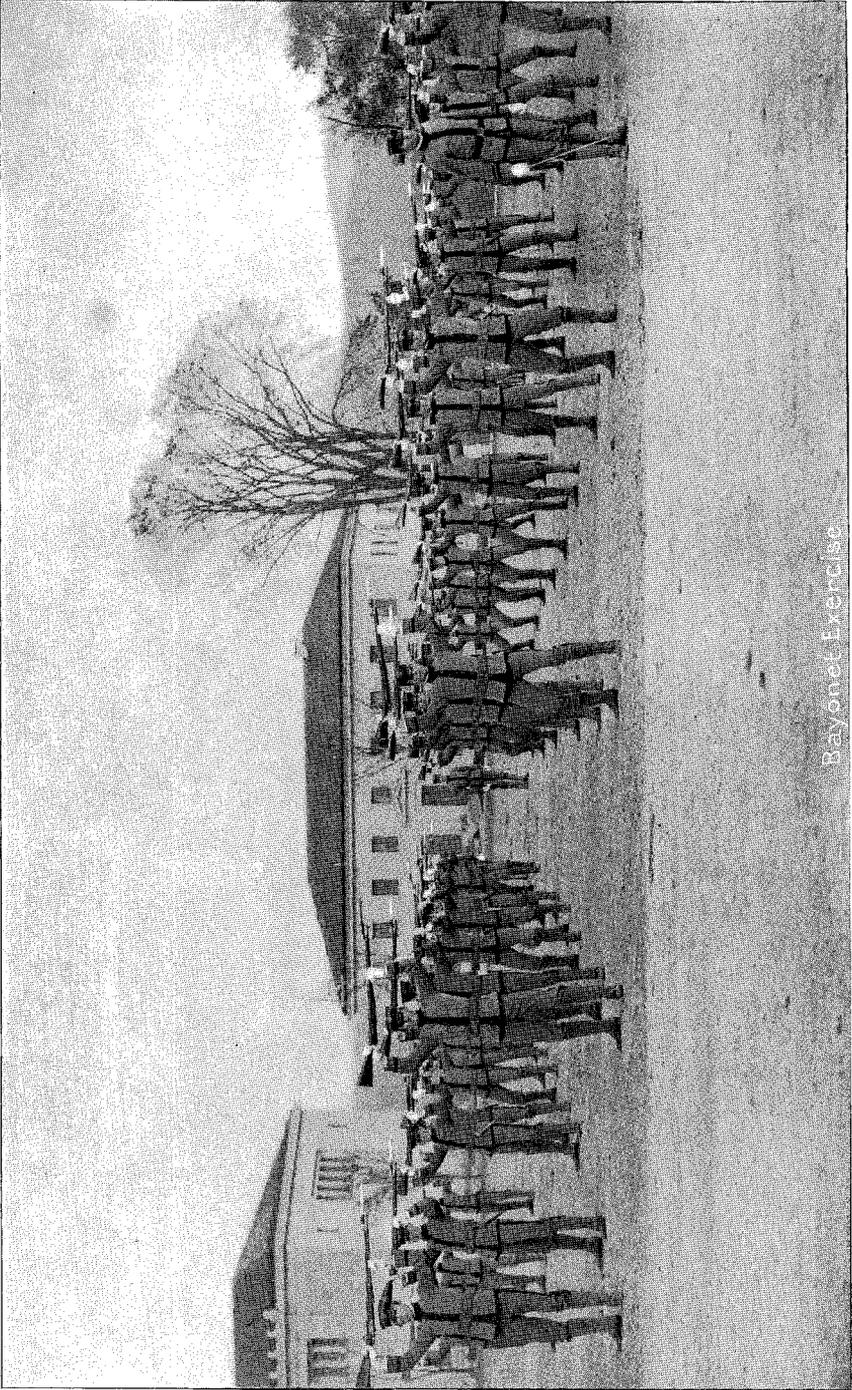
Ponton Bridge Building



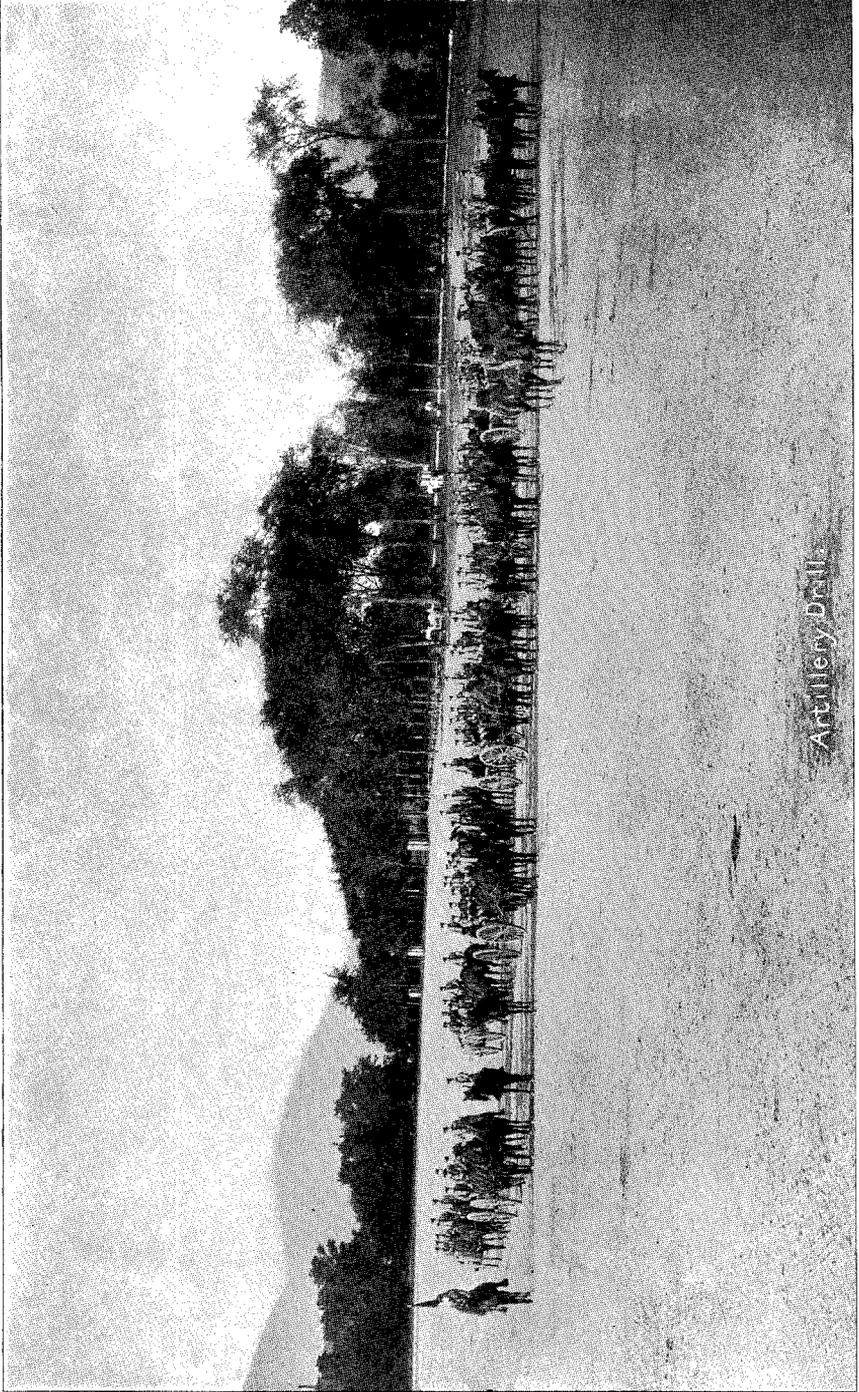
Erecting a Gin



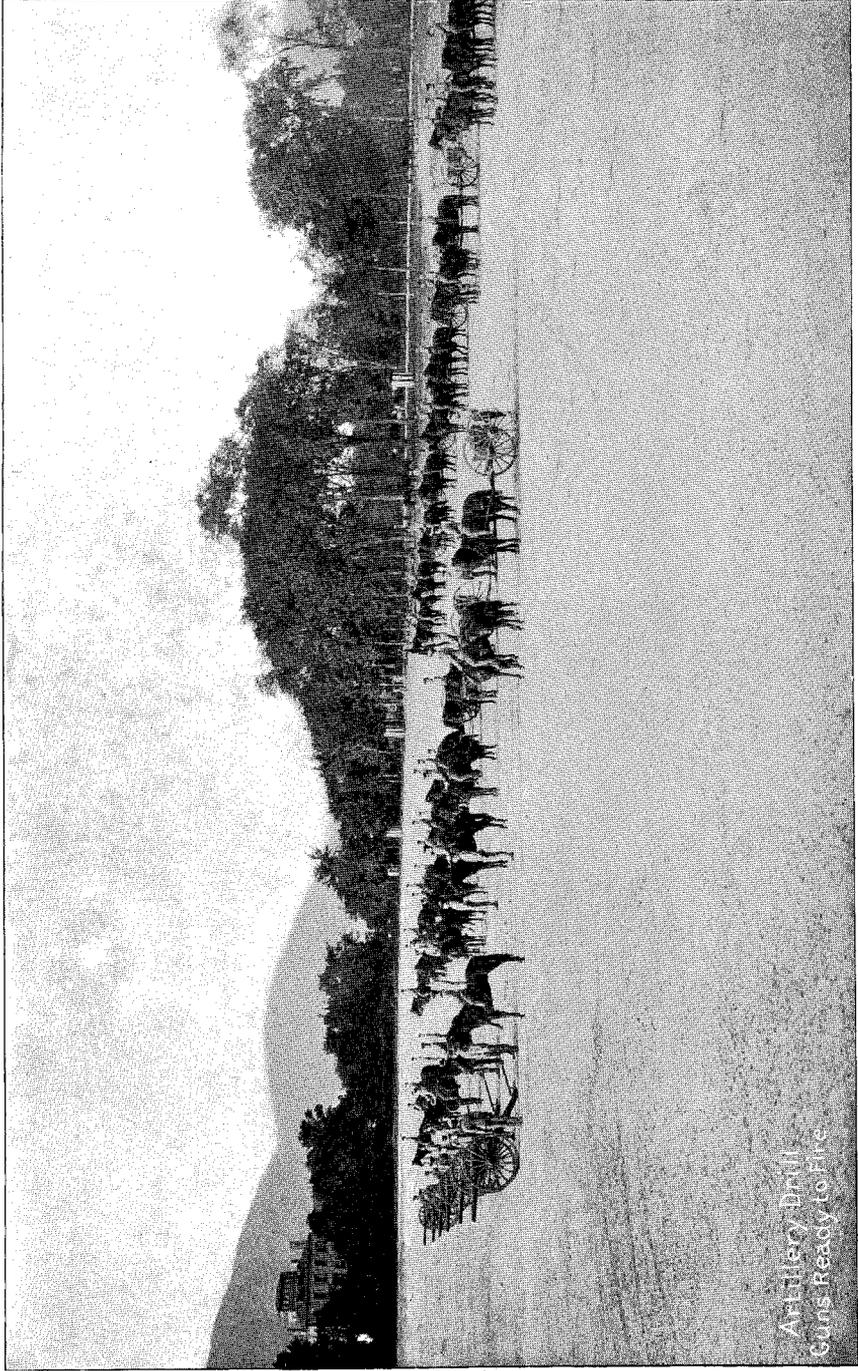
Bayonet Exercise



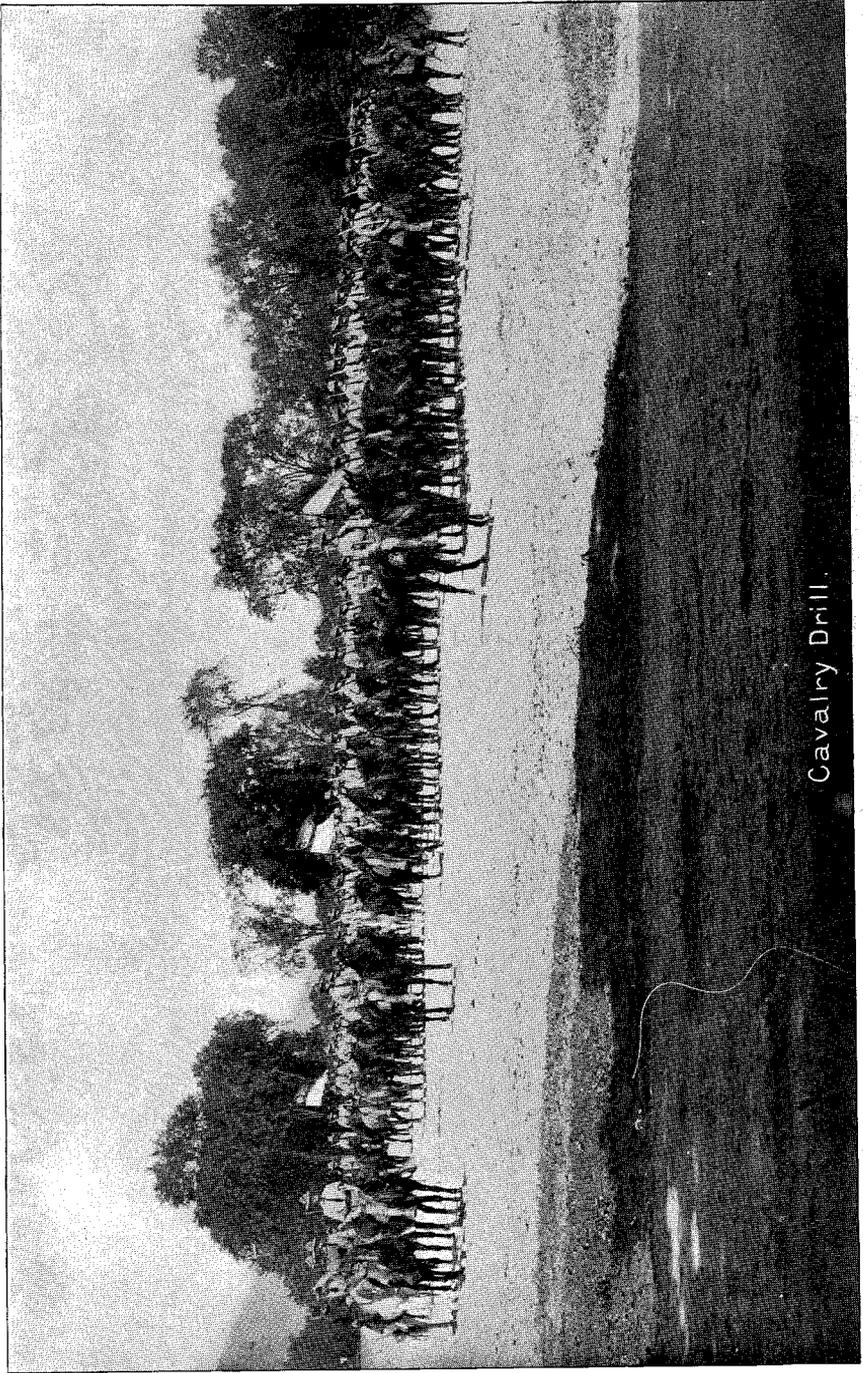
Bayonet Exercise



Artillery Detachment.

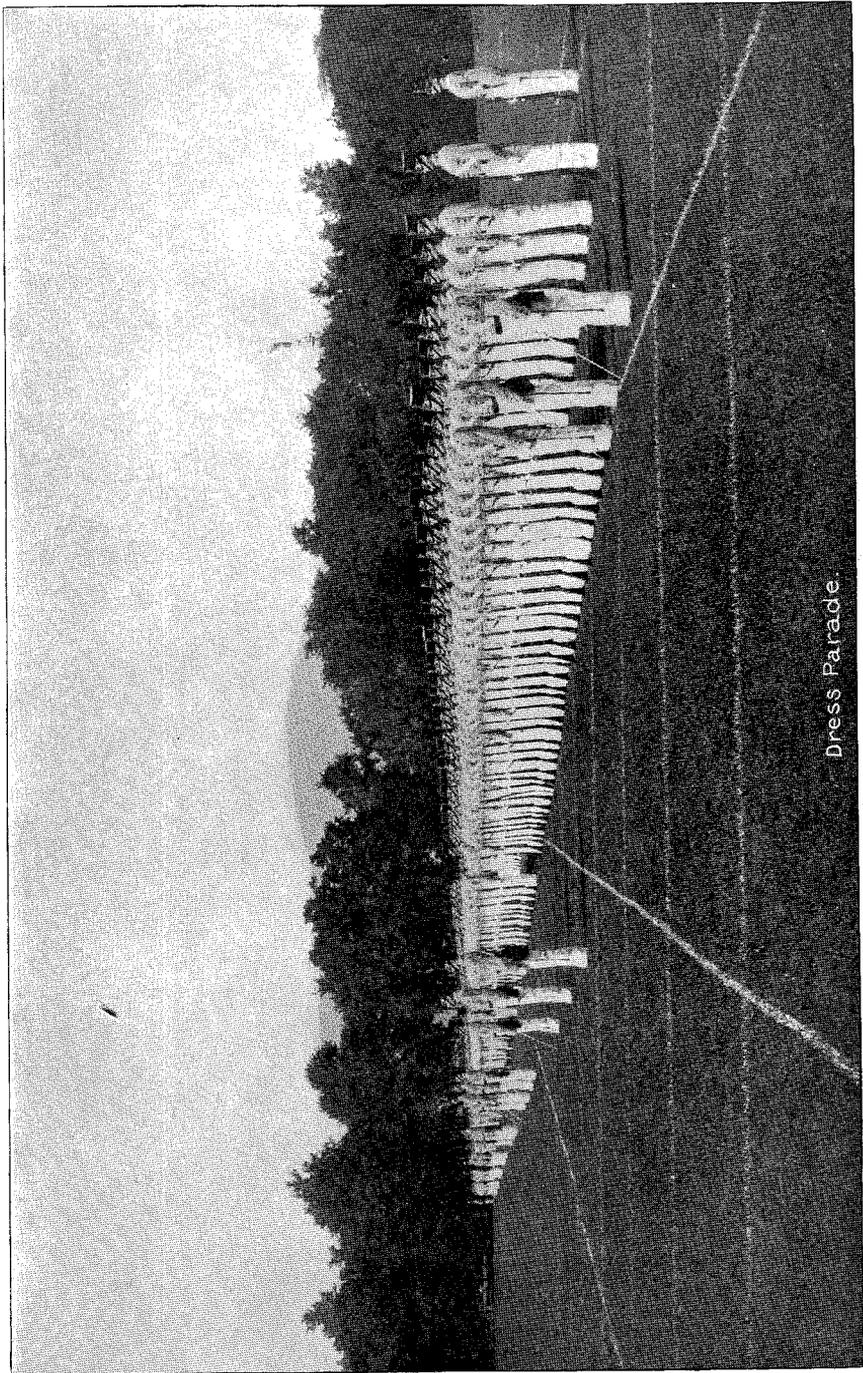


Artillery Drill
Guns Ready to Fire



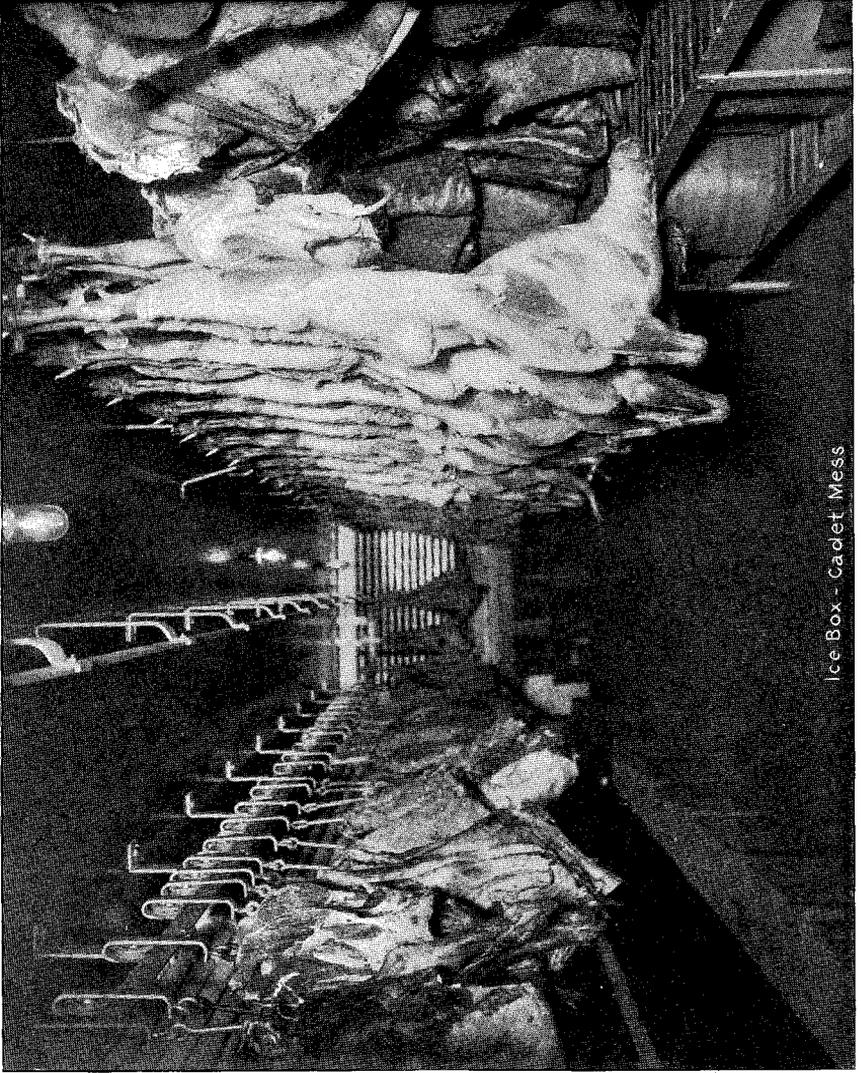
Cavalry Drill.

Report of Board of Visitors M. A., 1904.

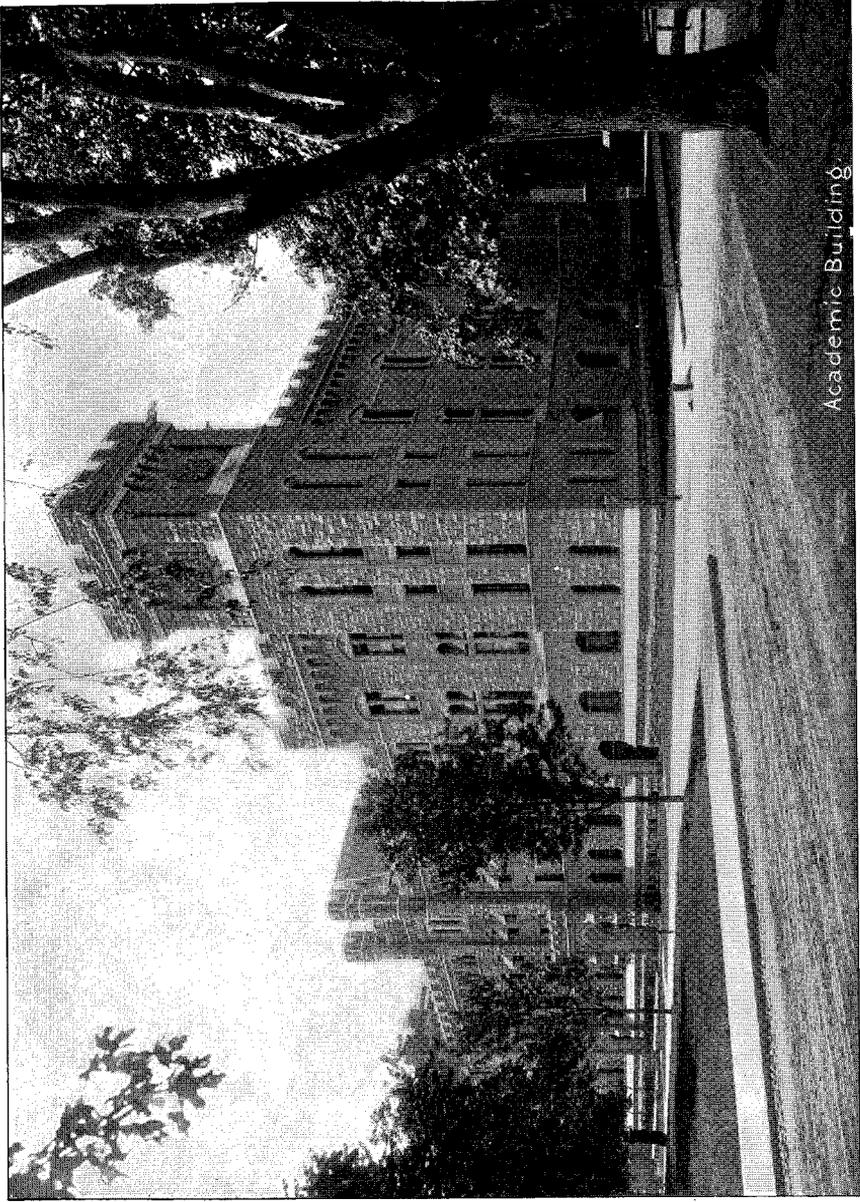


Dress Parade.

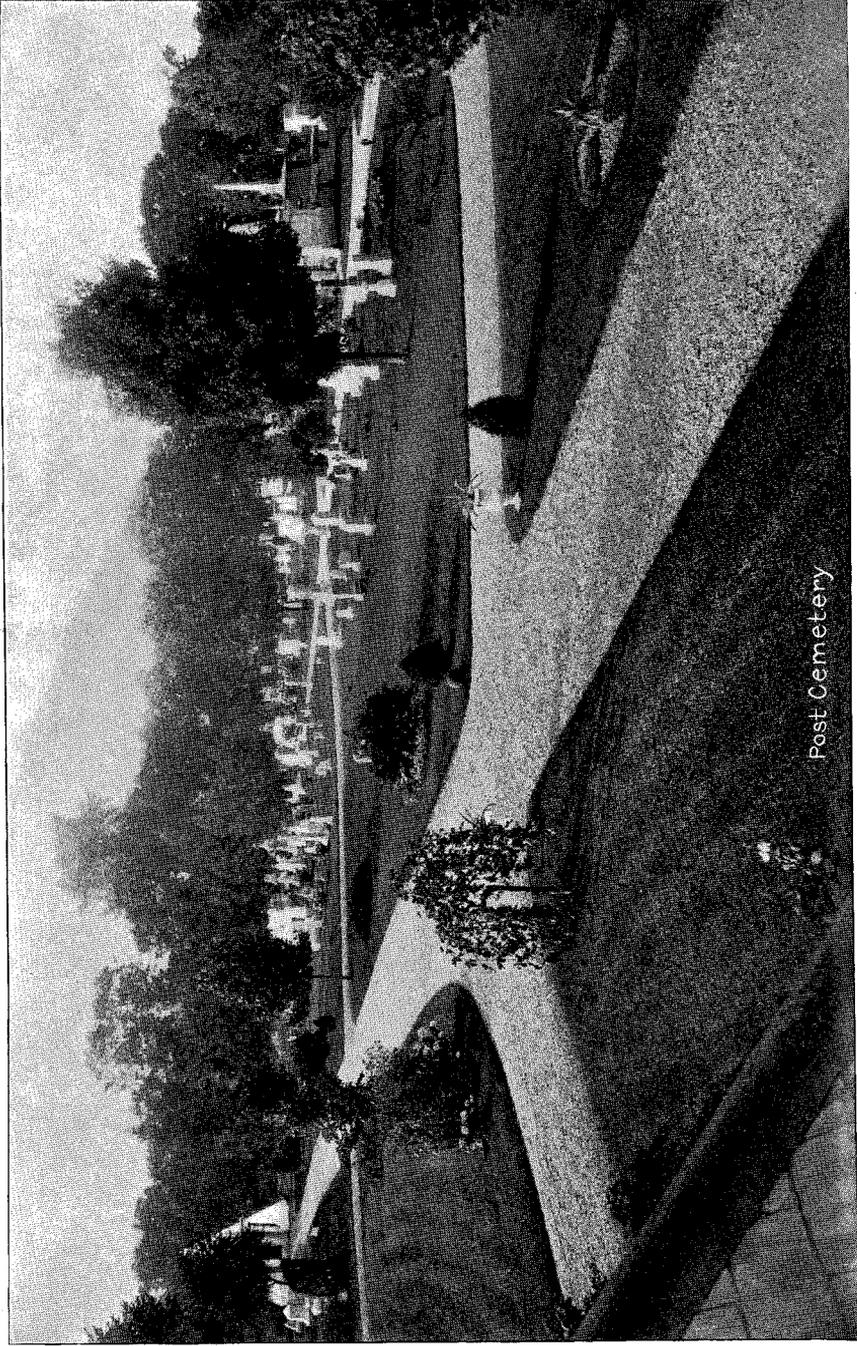
Report of Board of Visitors M. A., 1904.



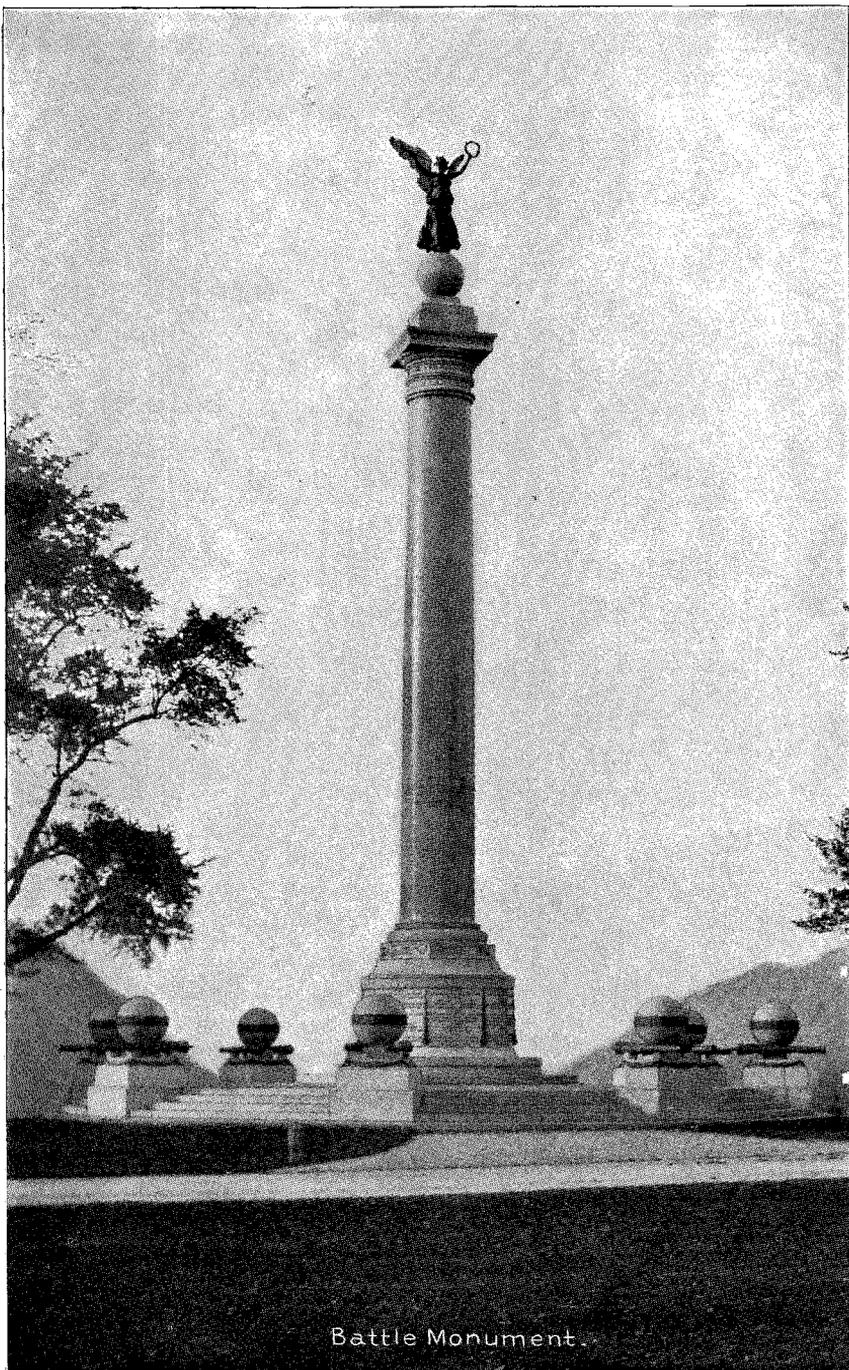
Ice Box - Cadet Mess



Academic Building.



Past Cemetery



Battle Monument.

