

ANNUAL REPORT

OF THE

BOARD OF VISITORS

TO THE

UNITED STATES MILITARY ACADEMY

FOR

THE YEAR 1899.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1899.

REPORT

OF THE

BOARD OF VISITORS TO THE UNITED STATES MILITARY ACADEMY.

To the Secretary of War, the President of the Senate, and Speaker of the House of Representatives :

In accordance with the statute, the following report of the Board of Visitors to the United States Military Academy at West Point is herewith submitted:

The appointment and duties of the Board of Visitors are set forth in the following sections of the Revised Statutes of the United States, to wit:

SEC. 1327. There shall be appointed every year, in the following manner, a Board of Visitors to attend the annual examination of the Academy: Seven persons shall be appointed by the President, and two Senators and three members of the House of Representatives shall be designated as visitors by the Vice-President, or the President pro tempore of the Senate, and the Speaker of the House of Representatives, respectively, at the session of Congress next preceding such examination.

SEC. 1328. It shall be the duty of the Board of Visitors to inquire into the actual state of the discipline, instructions, police administration, fiscal affairs, and other concerns of the Academy. The visitors appointed by the President shall report thereon to the Secretary of War, for the information of Congress, at the commencement of the session next succeeding such examination, and the Senators and Representatives designated as visitors shall report to Congress, within twenty days after the meeting of the session next succeeding the time of their appointment, their action as such visitors, with their views and recommendations concerning the Academy.

BOARD OF VISITORS, JUNE, 1899.

APPOINTED BY THE PRESIDENT OF THE UNITED STATES.

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|---------------------------------|---------------------|
| 1. Gen. FELIX AGNUS | Baltimore, Md. |
| 2. Hon. THOMAS W. BRADLEY | Walden, N. Y. |
| 3. Col. FRANCIS G. CAFFEY | Montgomery, Ala. |
| 4. Col. W. D. MANN | New York, N. Y. |
| 5. Col. J. SUMNER ROGERS | Orchard Lake, Mich. |
| 6. Gen. EGBERT L. VIELE | New York, N. Y. |
| 7. Dr. J. WILLIAM WHITE | Philadelphia, Pa. |

APPOINTED BY THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

- | | |
|---------------------------------|-------------------|
| 8. Hon. BENJAMIN F. MARSH | Warsaw, Ill. |
| 9. Hon. JACOB H. BROMWELL | Cincinnati, Ohio. |
| 10. Hon. THOMAS M. JETT | Hillsboro, Ill. |

NOTE.—There were no appointees by the President of the Senate.

The board met for organization on the 1st day June, 1899, elected Gen. Egbert L. Viele, of New York, president; Col. W. D. Mann, vice-president, and Hon. Thomas M. Jett, secretary.

In order to facilitate the labors of the board and accomplish in the most practical manner the object of their appointment, it was decided to divide the duties by the appointment of seven separate committees, each having in charge a special subject of investigation, as follows:

- (1) A committee on appointments and examination.
- (2) A committee on discipline and instruction.
- (3) A committee on armament and equipment.
- (4) A committee on buildings and grounds.
- (5) A committee on fiscal affairs, supplies, and expenditures.
- (6) A committee on hygiene, athletics, and lights.
- (7) A committee on increase in scope of the Academy.

The said committees to be named by the president of the board.

Accordingly the following gentlemen were named as constituting said committees:

(1) *Committee on appointments and examination.*—Hon. Jacob H. Bromwell, Col. J. Sumner Rogers, and Hon. Thomas W. Bradley.

(2) *Committee on discipline and instruction.*—Col. J. Sumner Rogers, Hon. Jacob H. Bromwell, and Hon. Benjamin F. Marsh.

(3) *Committee on armament and equipment.*—Col. Francis G. Caffey, Gen. Felix Agnus, and Hon. Thomas M. Jett.

(4) *Committee on buildings and grounds.*—Hons. Benjamin F. Marsh, Thomas M. Jett, and Gen. Felix Agnus.

(5) *Committee on fiscal affairs, supplies, and expenditures.*—Col. W. D. Mann, Gen. Felix Agnus, and Hon. Thomas W. Bradley.

(6) *Committee on hygiene, athletics, and lights.*—Dr. J. William White, Hon. Thomas W. Bradley, and Col. W. D. Mann.

(7) *Committee on increase in scope of the Academy.*—Gen. Egbert L. Viele, Hon. Jacob H. Bromwell, Hon. Benjamin F. Marsh, Gen. Felix Agnus, Col. W. D. Mann, and Hon. Thomas W. Bradley.

The board having notified the Superintendent of the Academy, Colonel Mills, of its organization, the following communication was received in reply, and the programme of the examination submitted:

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., June 1, 1899.

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 be happy to afford the board every facility for a thorough inspection of the workings of all the departments of the institution, administrative as well as academic, and in general to do everything possible to assist the board in its labor.

A programme of the examination has already been furnished each member. Notice will be given from day to day of such military exercises as are ordered for the Board of Visitors. Owing to the exigencies of the service the first class was graduated February 15, 1899, and the usual military exercises at this time of year are consequently considerably curtailed.

Capt. Julius A. Penn, Seventh Infantry; First Lieut. William Lassiter, First Artillery; First Lieut. Joseph T. Crabbs, Ninth Cavalry, and First Lieut. Julian R.

Lindsey, Ninth Cavalry, have been detailed to attend upon the Board of Visitors during their stay at the Academy.

I hope the board will communicate with me freely, both personally and officially, upon any subject connected with the Military Academy which may be of interest to its members in connection with their official visit to West Point.

I desire to call officially upon the Board of Visitors at the hotel at 4.20 o'clock p. m. to-day with the members of the academic board and associate professor, the chaplain, and my military staff, to pay our respects to the Board of Visitors and to conduct them to a review of the corps of cadets given in their honor.

At the close of the review it will give me pleasure to receive the members of the board, their families and their 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,
Colonel, U. S. A., Superintendent.

Gen. EGBERT L. VIELE,
President Board of Visitors, West Point, N. Y.

Which communication was ordered to be filed and the invitation contained therein to be accepted, and the secretary of the board was directed to write the Superintendent to that effect.

The following was also received and communicated to the board :

SPECIAL ORDERS, } No. 107. }	HEADQUARTERS UNITED STATES MILITARY ACADEMY, <i>West Point, N. Y., June 1, 1899.</i>
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[Extract.]

I. In honor of the arrival at the post of the Board of Visitors a salute of seventeen guns will be fired at 4.25 o'clock 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 o'clock p. m. to-day.

* * * * *

By order of Colonel Mills:

SAMUEL HAZZARD,
First Lieutenant, First Artillery, Adjutant.

The various committees proceeded at once to the discharge of their respective duties, attending the examination of the different classes, inspecting the buildings devoted to the use of the institution, witnessing the drills and evolutions in the several arms of the service, infantry, cavalry, and artillery, and the practical exercises in engineering.

Believing that a more practical result would be attained by submitting a joint report of the result of their labors than by two distinct reports (as called for by the statute), the board decided to act as an "homogeneous body"—all the members contributing through their several committees their individual share of observations on the condition of the institution and their views upon its management—the whole to be embodied in one report to the Secretary of War. The president of the board was requested to prepare such report. The board held two sessions daily, morning and afternoon, and in the interim attended the military exercises ordered for each day.

The Superintendent was invited to appear before the board at his convenience, at which time it was proposed that the chairmen of the

several committees should in turn address such questions to him in the presence of the whole board as would enlighten the members on the subject of the general administration of the affairs of the academy, to which invitation he sent the following reply:

HEADQUARTERS, UNITED STATES MILITARY ACADEMY,
West Point, N. Y., June 2, 1899.

SIR: I have the honor to acknowledge receipt of your letter of this date, expressing the desire of the Board of Visitors that I come before them and advise with them upon such subjects as they may desire to inquire into, and in reply to say that I shall be pleased to meet the board at 8.30 to-morrow, the 3d instant, at their rooms, to confer with them as requested, if agreeable and convenient to the board, or at any other suitable time.

Very respectfully,

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

Hon. THOMAS M. JETT,
Secretary Board of Visitors, West Point, N. Y.

The secretary was directed to inform the Superintendent that his suggestion of the time for his conference with the board was satisfactory to them.

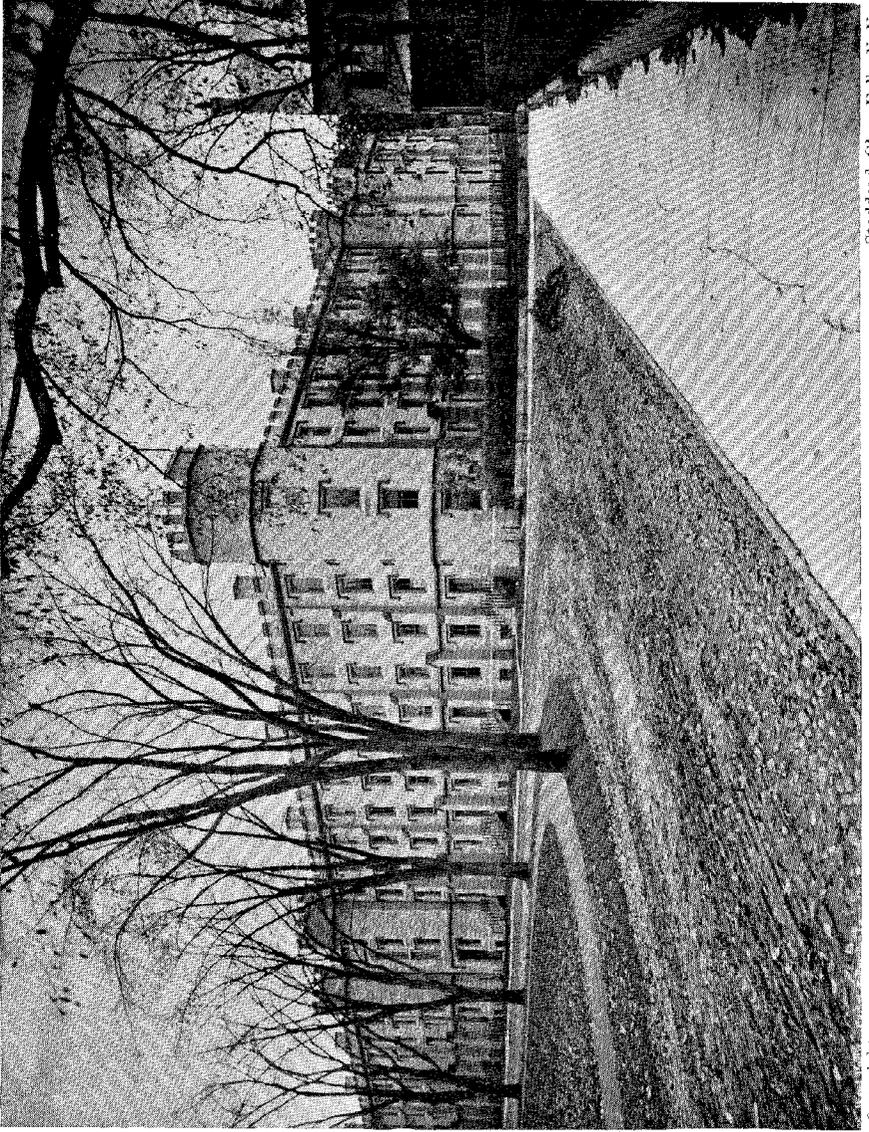
Col. Peter S. Michie, professor of natural and experimental philosophy, and Col. Samuel Tillman, professor of chemistry, mineralogy, and geology, were also asked to appear before the board and give such information as was required.

Prof. Charles W. Larned, department of drawing, and Prof. Wright P. Edgerton, department of mathematics, were asked to appear before the board and give such information as might be requested of them.

A stenographer was employed to carefully record the questions and answers in the interviews with the officers and professors referred to. A voluminous mass of valuable information was thus obtained. The method adopted, by which the chairman of each committee in turn submitted a series of questions and obtained answers thereto in the presence of the entire board, not only furnished the several committees with the facts they desired, but enabled the whole board to familiarize themselves with the methods of administration and their results. In order to exhibit the character and result of these inquiries, the examination of the Superintendent is herewith annexed in full; that of the other officers and professors was similar in character, but the whole would make an entirely too voluminous report if published. These will be filed in the War Department for future reference.

It is proper to say, however, that in every instance, without exception, these officers exhibited in their prompt and intelligent answers not only a thorough knowledge of their duties and the requirements of the institution, but a rare ability and a frank and soldier-like expression of their views. In fact, they were in their own personality a most excellent example of the class of men and minds that the Academy produces.

Recognizing the importance at this particular juncture of public affairs that a close analysis should be made, not only of the present



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CADET BARRACKS, FROM THE NORTH.

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scope and resources of the Academy, as well as the methods of administration, but also a careful examination into the possibilities of its extension on existing lines, so as to meet more fully the exigencies that might arise in connection with the increase of the military force and the added responsibilities accruing therefrom, the board decided to keep prominently in view the possible contingencies of the near future while making their personal examinations into the present resources of the Academy.

The personnel of the board was such that the most satisfactory results might be anticipated. By a wise discrimination every section of the country was represented in its members. The extreme Southwest, the Gulf and Atlantic section, the Middle States, the Valley of the Mississippi, and the Valley of the Ohio, the region of the Great Lakes—all had their special representatives. The legal and medical professions, the mercantile as well as the manufacturing interests. Two of the leading institutions of learning by their representative heads. The Volunteer Service by two officers of rank and military experience, to which was added a graduate of the Academy with the experience of a foreign and domestic war and Indian campaigns. There were also included two prominent journalists and three representatives from the popular branch of Congress.

The board was appointed at a crisis in public affairs that affected materially the Military Academy to an extent equal if not greater than that produced by the war of the rebellion. The Congress in accord with a remarkable unanimity of public sentiment and in obedience to the higher dictates of humanity had officially and by resolution solemnly declared that the pretense of government maintained by Spain over her island possessions contiguous to the Western Continent attended with conspicuous and continual acts of cruelty and wrong throughout a long series of years must forever cease. This action of the Congress approved by the President and formally made known to the Spanish Government led to open hostilities, the result of which is a part of current history. As a consequence of this conflict and the immediate demand for the services of educated officers, the first class of the corps of cadets was graduated and commissioned in advance of the regular period and without examination, so that the Board of Visitors on assembling at West Point the 1st day of June, in accordance with their appointment, found that only three classes were present for examination. While this contracted somewhat the duties they were called upon to perform, it served on the other hand an excellent purpose in affording the board the time and opportunity to discuss from a practical point of view and determine by personal examination what measures could advisably be taken to extend and possibly modify the resources of the Academy to accord with the changed conditions that had been brought about incidental to this war with Spain.

The war has proven to be an epoch in the history of the country far-reaching and momentous, demanding not only the exercise of the

loftiest patriotism, and the highest order of statesmanship, but the heroic action of many thousand brave soldiers and sailors. The whole civilized world has been astonished by the spontaneous exhibition of the power, the resources, and the unflinching determination of the American people in a cause as noble and as chivalrous as has ever animated the human race in any part of the world, and at any time in the history of civilization. Without thought or desire for aggrandizement the United States has in the brief space of a few months become the possessor of the greater portion of the tropical islands of both hemispheres, and under circumstances that they are compelled by humanity and national honor to maintain such a control as shall lead to the pacification and education of the races that inhabit these regions near and distant. This can only be accomplished through the strong arm of military government for the time being, and as a consequence the Military Academy must necessarily form a prominent factor in the situation for years to come, creating a demand upon its resources and availability, such as has never before existed.

The reports of successive boards of visitors made to the Secretary of War and to Congress contain much valuable information and many important suggestions, and at first glance there would seem little to add to what has already been well said were it not for the fact that the rapidly changing conditions of public affairs all over the world require that this peculiarly technical institution, under the direct fostering care of the Government for purely national purposes, should be maintained on advanced lines in full accord with current events, since each year discloses new conditions in the art and science of war that must be met promptly and intelligently. To this end the board has thought it judicious in their discussions and report to take a broad and comprehensive view of the salient features of administration and instruction that present themselves in the course of their investigations.

With the advent of the new century the West Point Academy will have completed the first century of its existence with a history of successful training and brilliant results, unequaled by that of any other institution in the world, and this is by no means an exaggerated statement. The past century of American civilization surpassing all the annals of human progress and development, has made at every step demands upon this institution such as have never before been imposed upon any other school of learning. As a consequence, it has been the most important factor in our national history—while the names and fame of its graduates have become familiar to both hemispheres as well by their deeds in war as by their accomplishments in peace. In all discussions in regard to the status or the necessities of the Academy these facts must be borne in mind in order to have a right understanding of its character and position.

The Academy was founded at the beginning of the century as the result of the persistent counsel and earnest efforts of General Washington, having in mind his experience in the war of the Revolution, and

the absolute necessity of trained officers to lead soldiers to victory. "In time of peace prepare for war" was a wise precept that he desired his country to follow, and its wisdom has been amply proved by the results.

The site chosen was a peculiarly advantageous one. A strategic stronghold of the first character made memorable by its defiant strength and the foul treason that would have surrendered it to an enemy who despaired of otherwise possessing it. It is fitting that the soil preserved by vigilance from the pollution of dishonor should be sown with seeds of patriotism.

Its topographical isolation has been the most important factor in its successful career. Shut off from all general routes of travel, forming in itself a grand mountain amphitheater. Surrounded on two sides by the noble Hudson, above which its level plain occupies a commanding elevation, its quiet seclusion is at once an incentive to study and a stimulant to thought such as few other spots in the world possess, while the whole atmosphere is replete with grand memories and historic associations. Such is the spot chosen by Washington, and from here during the last century more than 3,000 graduates have been commissioned into the Army, while many more have had a partial benefit of an education that has been in one way and another of great service to the country. Its present scope is limited by its limited number of cadets, while its capacity is far beyond the demands made upon it. Just how this may be remedied is a question which occupied the serious attention of the board.

Circumstances make the personnel of the corps of cadets a most interesting study at any time, but a proper examination into the workings of the Academy necessarily involves a very careful study of this personnel, since the method of nomination and the selection of candidates for admission from all sections of the country and from all the walks of life involve the bringing together a heterogeneous mass of material that must be molded into a uniform condition, both mentally and physically, in order to convert it into a homogeneous body, harmonious in character and animated by a single impulse of self-abnegation and duty to country. The result shows that these young men become bound together by a noble esprit du corps that has shown resplendent in the light of battle and remained unsullied amid the allurements of peace.

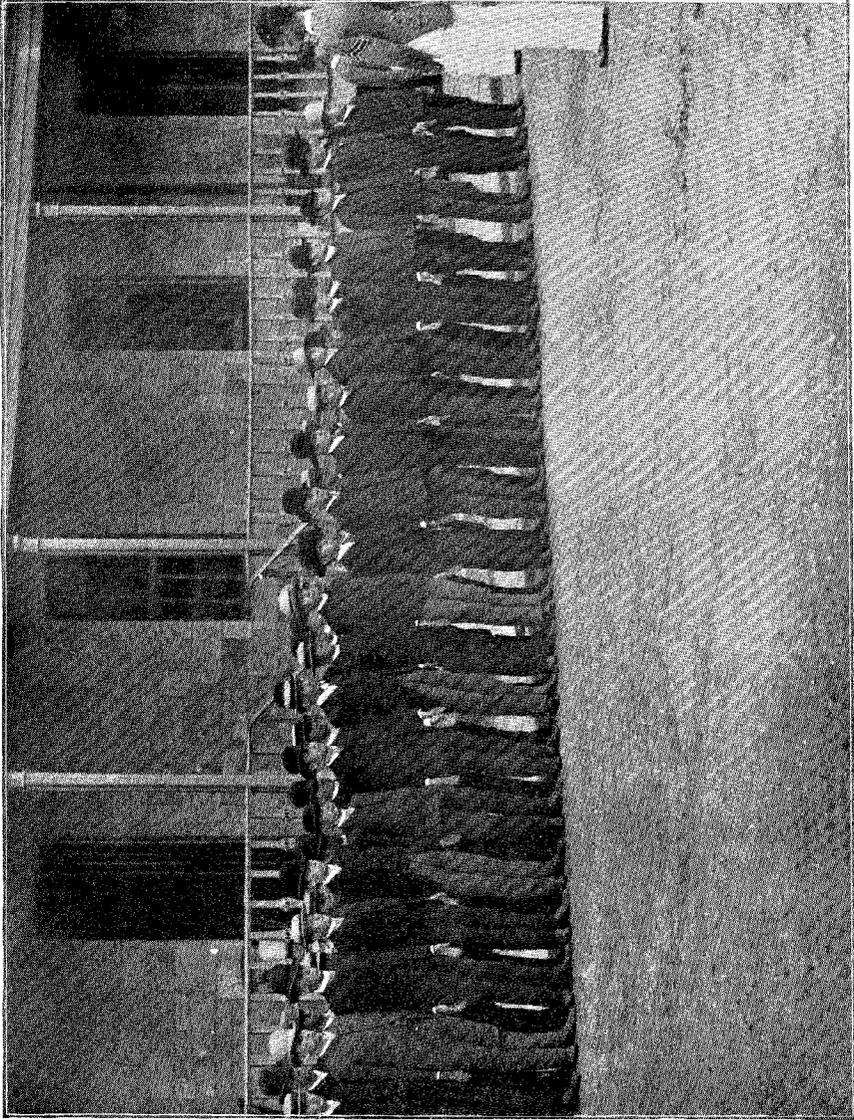
It does not require more than a casual acquaintance with the resources and workings of the Military Academy to see that by reason of the limitation of cadet appointments it accomplishes much less than it is capable of doing. This fact has been repeatedly stated by former boards to little purpose. It is time this statement should be heeded. There is nothing wanting in its superb and orderly administration, nothing wanting in the zeal and efficiency of its officers and professors. But they all want the opportunity to do more than they are allowed to do with the means and appliances at hand. West Point stands to-day

as a great conservative force in a rapidly increasing and expanding nation, ever and always reliable, ever and always prepared for any and every emergency. "It is a school where every principle of honor is taught and followed." Made venerable by years, and sacred by grand associations and heroic memories, it is the source from which has emanated a noble army of heroes and patriots equipped not only with a profound knowledge of the art of war, but with a thorough acquaintance with the abstract sciences and the physical and natural resources of the country. The Academy is the peer of any institution of learning in the world, and it would seem imperative that a short-sighted policy should no longer deprive the country of all the benefits it can possibly receive from it.

To the end that this National Academy should be in a condition to meet as fully as possible such emergencies as might arise in the public service involving military and technical education, the board directed its attention particularly to the most practical and direct methods by which the usefulness and purposes of the Academy could be increased. In the most ordinary affairs of business it has always been found that both wisdom and economy dictate the utilizing of existing resources to the fullest extent. An unused "plant" in business involves a loss of capital. The "plant" of the Military Academy is competent to make a much larger return than has been received from it, and at the present juncture such a return is, in the opinion of this board, a matter of the first importance. The quota of cadets has never in the past at any time been complete; on the contrary, it has at times been singularly deficient.

There can be no question as to the advisability of completing the unfinished quadrangle. Even if there were no additional cadets appointed beyond the present legal limit more barrack room would be and always is required during the year. The arrival of a new class previous to the graduation of the first class is a serious detriment to the entire corps for the time being, as the crowding of the quarters to make room for the new cadets disturbs the whole corps in their studies at the time that their undivided attention is required in preparing for the annual examination. In the midst of their studies many cadets are required suddenly to vacate their quarters, while others find themselves compelled at this time to receive into their rooms additional occupants for which the limited space allowed is too contracted. This periodical upheaval has been known to so disarrange the minds of many of the students as to prevent them from passing a satisfactory examination. This is certainly unjust.

Two of the present Board of Visitors had been members of previous boards, and for this reason were enabled to compare former conditions with the present. Recent circumstances have tended to develop important improvements both in administration and in academic training. This advance in usefulness is perhaps more apparent in general discipline and in practical instruction in field operations. The new academic building with its improved appliances and enlarged scope,



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CANDIDATES.

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the gymnasium for physical training, the experience derived from the civil war and from observation in the Franco-Prussian war, have all contributed to advance to a higher plane a knowledge of the art and science of war. This is clearly manifested throughout the several departments of the Academy.

A more recent and very important advance in practical instruction has been the result of an entire change in methods of the tactical department, by which the cadets of the first or graduating class are uniformly instructed in the duties of commissioned officers. In the past this instruction has been restricted in a great degree to the regularly appointed cadet officers of the battalion. The present method places all of the first class on an equal footing as to the knowledge and responsibilities of command. Cadet U. S. Grant laid down his musket and took off his cartridge box and belts as a cadet private to assume a sword and a command for the first time when he received his commission as an officer of the Army. Such could not be the case now. He would have been made familiar with all the duties and responsibilities of an officer before "he changed the gray for the blue." This change of conditions is clearly apparent in the development of that individuality and self-possession so essential in a military profession. The improved conditions due to a radical reform in the dietetic regimen and food service must not be overlooked. Correct deportment in social intercourse and proper manners at table go far to make the properly educated and refined gentleman, while existing conditions demand that both at home and abroad the conduct of an officer of the United States Army should be under all circumstances above reproach socially as well as professionally.

THE STANDARD OF ADMISSION.

Owing to the fact that so many candidates for admission fail to pass the first examination, and so many others fail to pass the second examination after being a few months at the Academy, it became a matter of much solicitude with the board to inquire into this subject, which has always been a more or less difficult one to discuss.

Early education is the training of the mental faculties to thought and observation. The ultimate value of this training depends largely upon the natural capacity of the individual. In the absence of sufficient natural capacity for acquiring knowledge efforts at training are to a large extent wasted. The Military Academy is in no sense a primary school and in no sense an eleemosynary institution. It is a school for the higher education of young men in the art and science of war, in order that they may serve the Government in the capacity of commissioned officers of the United States Army, and for no other purpose. It is a factory for the manufacture of skilled soldiers, just as a foundry is a factory for the manufacture of guns. In the latter case the quality of the guns depends upon the quality of the metal used. If the metal is not of the right quality it must be rejected; and so it

is in the education of soldiers. If the individual is not of the right quality he must be rejected. No amount of education can supply the absence of natural capacity.

High hopes are often engendered in the minds of those who receive appointments as cadets subject to passing the necessary examination. The fact of the appointment is often regarded as a sure beginning of a fortunate career in life. And when these hopes are blasted by the failure to pass the examination it is likely to prove to the individual and to his relatives and friends a bitter disappointment. It would perhaps be better if the law in relation to cadet appointments should be so changed as to authorize each member of Congress in the filling of a vacancy to name two persons who shall receive from the War Department permission to be examined for a probationary warrant. The standard of admission should be as high as that of any other institution of learning, and should absolutely require a certain period of preparatory study. If this is thoroughly understood there would be fewer disappointments, and much time, trouble, and expense saved to the Government. A careful physical examination by the family physician at home should precede any application or aspiration.

Right here it is deemed proper to insert the stenographic report of the interview of the board with the superintendent, Colonel Mills, as it bears directly on this question and illustrates at once the method of procedure of the Board of Visitors and the methods of administration of the Academy:

INTERVIEW OF THE BOARD OF VISITORS WITH COLONEL MILLS, SUPERINTENDENT OF THE ACADEMY, WEST POINT, JUNE 3, 1899.

The CHAIRMAN. Gentlemen, the special business before the board this morning is the interview of the several committees with the superintendent, Colonel Mills, who has kindly placed himself at our service to give such information to the board as the chairman of each committee may desire.

COMMITTEE ON EXAMINATIONS AND PROFICIENCY.

[Mr. BROMWELL, *Chairman.*]

Q. Colonel Mills, I would like to ask, first, in a general way, as to whether you have any suggestions to make as to any improvements in the present system of examinations for admission to the Academy or examinations through the Academy?

A. I have no suggestions to make in reference to the examinations as held during the course at the Academy. I think they are very fair and thorough and that they accomplish the desired result—the results, of course, of years of experience—and I have no suggestion at all to make in reference to these examinations. The results of the examinations, of course, are gone over very carefully, being considered by the whole Academic Board assembled, each head of a department making

his report and each individual case being considered. Consequently the examinations attain their end and exact justice is meted out to all the cadets.

In reference to the entrance examinations, I think a change for the better can be made. We all know that the school facilities throughout the United States are very unequal. In the East and in the middle West and on the Pacific coast as a rule they are excellent, but in the South and Southwest they are not so good; so that boys coming to the Academy from those sections of the country, and especially where agriculture is the chief industry of the country, are at a disadvantage. I believe if some plan could be hit upon so that cadets from all parts of the country could come here and enter the Academy with nothing more than a physical examination, and then after a preliminary period here be subjected to an examination, that a great good would result to the Academy and to the country at large. That would necessitate an addition to the present four-year course.

You know that the preliminary examination covers but a few subjects: reading, writing, arithmetic, history—history of our own country especially—and spelling. But you would be surprised, if you have not already looked closely into the matter, to see how many boys fall short. The records for over twenty-five or thirty years show that on an average one fifth of the candidates who report fail on the preliminary examination. They fail to come up to not a very high standard in those simple subjects, and it shows that the public-school system of the country is deficient, or that the boys do not have proper school facilities; while undoubtedly many of these boys who are rejected have the making of excellent officers and excellent men in them, and it is a great source of mortification to them and their parents if they fail. But many of the boys who come have gone quite beyond those subjects and have advanced into higher studies, and they may fail for the reason—that the simple studies are not fresh in their memories.

Q. Colonel, how many would you admit in that preliminary class you mention?

A. Everybody who comes—without any mental qualification, only a certificate from the school authorities of their district that they are fitted to go on from a certain point, so that a condition beyond that may not attach to their entrance.

Q. Will you kindly outline to the board, if you please, a little more fully your ideas in regard to this preliminary class? These appointments ought to be made a year in advance of their reporting for admission to the Academy, ought they not?

A. Yes; but many of them are made just before the candidates come; the majority of them are made six or eight months before.

Q. Then, as I understand it, your idea is that after the time these appointments are announced there should be a year's preliminary work in this preparatory class?

A. Yes, sir.

Q. Suppose in the case of boys who have finished such a course as the one you prescribe for this class, in either high schools or colleges, in such cases wouldn't it be an advantage to such boys to have an opportunity to display their proficiency by an entrance examination instead of this entire year's study? Take the case of a boy appointed between the 1st of May and the 1st of June (so that he doesn't have the year for preparation), ought there not to be some provision made by which he would be kept, if he chooses to do so—could offer himself for the entrance examination at once without this preparatory year? Or would you put the boys all on the same footing?

A. I would put them all upon the same basis. Then we can have the benefit of their military training. Otherwise, if you allow candidates to come who are proficient at the end of that preliminary year they would miss their first year's military training, which is the most valuable year. Right there the soldiers are made—during the first year. Going over the theoretical course which they would go over would not hurt them at all; it would be an advantage to them; it would bring them into line with the methods of instruction and study pursued at the Academy.

Q. Have you thought at all of the character of the studies that they ought to pursue during the preliminary year outside of their military part, generally?

A. Only in a general way. We have not gone into that part very much, but it would be made to include algebra and an English course, to perfect the cadets in their English education, taking up the first part of geometry and maybe trigonometry. But geometry and trigonometry should commence their course at the Academy. Now there are six months of the fourth class devoted to algebra. If the cadet on commencing his course at the Academy should commence with geometry and trigonometry, there would be a gain of almost a year. This plan that I have mentioned contemplates a five-year course at the Academy, with this preliminary course of one year, and there are a great many reasons why I believe such a course will be beneficial. In the first place, all boys are put on the same level, and boys from all over the country take the same chances. Take a man like Stonewall Jackson. When he came here he was very deficient in elementary education, but he was persevering and a hard worker and he got through, and to the credit of the institution and to his own credit. But there are lots of boys who come and fail because they have not had the necessary training.

At the end of this preliminary course of a year the sifting of the class should be placed into the hands of the Academic Board, but it should be so arranged and so disposed that those who are not capable of going on could then leave the Academy honorably and without the stigma that attaches to boys who fail. There is scarcely a cadet or a candidate who is found deficient in this Academy that his parents do

not at once institute proceedings to have him returned to the Academy. In nearly every case since I have been here the friends of cadets discharged from the Academy take the matter up, and of course their Congressmen help, and the Senators, also, on account of the stigma that attaches to leaving the Academy, to have the boy returned. At the end of this preliminary period of a year, if cadets were given the option of leaving the Academy or going on with the course, or being obliged to leave the Academy by the decision of the Academic Board, they could leave it with advantage all around. They will have had this one year of excellent military training, and their services would then be open to their country in case of emergency. They would be excellent officers for the field or for volunteer troops, because the course would cover the essential training in infantry tactics, and the theoretical course would include schooling with defense duty and outpost duty and the school of the foot battery. Those boys would all be well equipped for the duties of officers of volunteer troops, and at the time they leave the Academy they could leave it without the stigma that at present attaches, not through any desire of the Academy, but through the natural operation of circumstances.

Q. Would you fix any restriction or limitation as to the number of boys who came to the Academy?

A. I do not believe that ought to be restricted. The maximum number now is 381—that is, under the present law. It was 371 until the last army bill was passed, and that gave the President 10 additional cadets, and that is about the capacity of the Academy now in the way of barracks and other accommodations, with the exception of tuition; the main Academy building would offer the means for the instruction of twice that number.

Q. Would this increase necessitate an increase in the teaching force of the Academy?

A. Yes; an addition of twice the number of cadets or about two-thirds more than there are now would entail about 12 additional teachers.

Q. What would be the additional number required in the preparatory school each year?

A. Under the present arrangement, this year there are 206 candidates to report on June 6; 16 passed the preliminary examination March 1; that is 222, and 7 are authorized to come here on the 28th of August. That makes 229 this year. But this is a large class.

Q. Do these numbers include alternates?

A. Yes, sir.

Q. Would it be your idea to have the alternates in that preparatory class as well as the principals?

A. Under the present conditions it would be.

Q. Then your idea is to let anybody come that chooses—any proper boy?

A. Anybody that is appointed. The proposition made last year in Congress giving each Senator an appointment would increase the number 90, and a proposition was made to give the President 40 appointments, as he formerly had, during his four years; that would be 20 more, which would make 110.

Q. It has also been suggested that the governors of the States be given each one.

A. Yes; that would be 45 more.

Q. And the Territories, of course?

A. That would make it 160 altogether. That number the Academy could handle with increased barrack facilities and an enlargement of some of the other buildings. There is another point, and a very important point, to this preliminary course. The records for twenty-five years show that one-third of the candidates reporting fail to enter the Academy, and one-half—

Q. That includes the alternates, does it?

A. No, sir; it does not—only those who get the appointments. Yes; of course, that does include the alternates—those who come—but then one-half of those who enter the Academy fail to graduate.

Q. Are they not examined at the same time? The alternate possibly may be rejected, but—

A. Yes; it is frequently the case, but it is after they enter the Academy, there is only one-half who graduate. This preliminary course would insure the graduation of 90 per cent of those who go in; it would be a great gain all around.

Q. So that instead of graduating a class of, say, 50, you would graduate a class of 100?

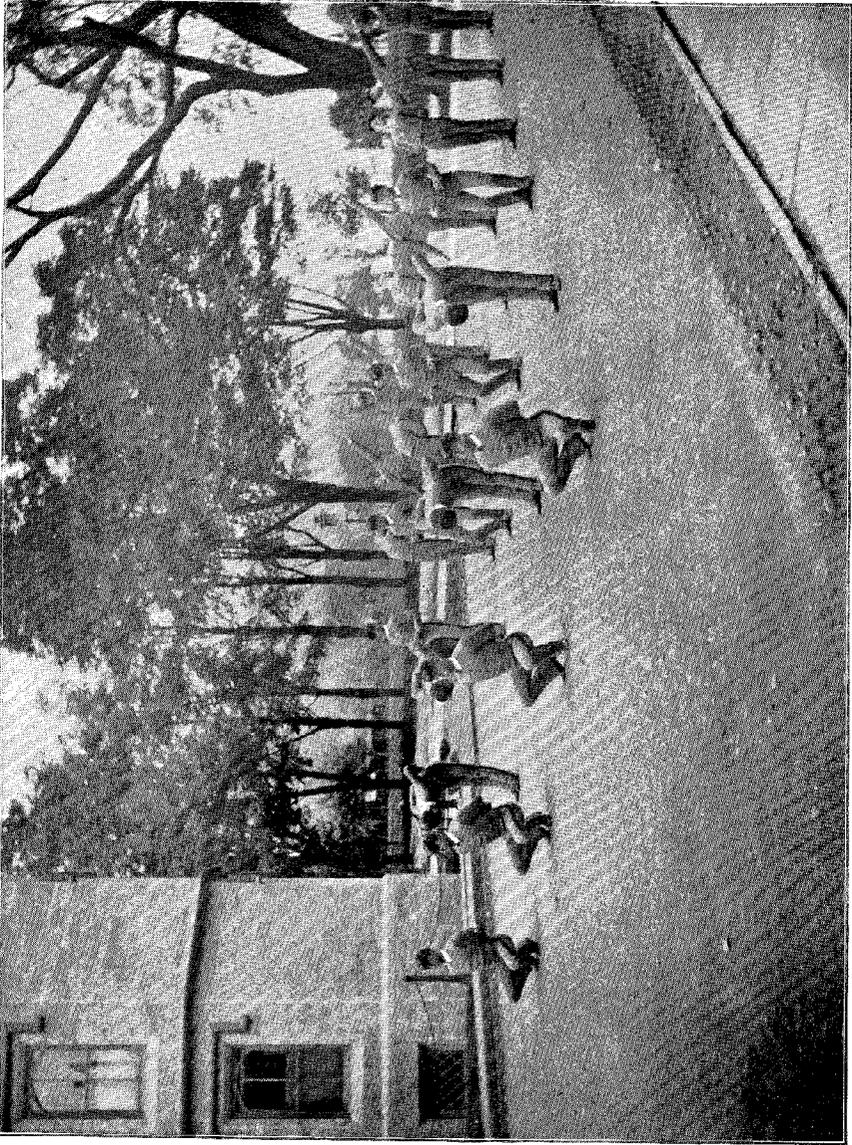
A. Yes; and that would supply the demands of the Army for many years. The casualties in the Army have amounted to about 3 per cent of the commissioned strength. It will be more in the future, but this measure would insure the proper officering of the Army and would allow a good margin for the appointment of noncommissioned officers.

Q. Would it not be possible to furnish this board, through whatever officer has charge of your records, a duplicate statement showing the record of failures in these preliminary examinations for admission, and also for the four-year course of the different classes, say, for the last fifteen or twenty years?

A. Yes, sir; and I think you will find, just as I have told you, that one-third of the candidates who come here fail the first year, one-half of those who get in only graduate, and the greater number of cadets or candidates found deficient are found so in the first year.

Q. I think in former reports that your officers have furnished the Board of Visitors with tabulated statements showing the causes of the failures, the number of failures in each different class. Could that be brought down to date and a complete tabulation furnished us?

A. Yes, sir.



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Stoddard, Glens Falls, N. Y.

Q. Also a table showing the nationality of the cadets—of the birth of the cadets?

A. Yes, sir.

Q. And also a tabulation showing the sections from which they come and the results of their course in schools?

A. Yes.

Q. (By General AGNUS.) The nationality of the cadets is prescribed by law; they are Americans—all Americans?

A. All Americans.

Q. I refer to their parentage.

A. We have that, but it might require a good while to tabulate all that. I don't remember whether these reports that have been furnished in the past go to that extent. I could give you a summary. When a boy reports then you get his parents' names and residence, but we do not get their birthplace.

Q. Have you made any estimate or considered the question at all as to the amount of expenditure that would be called for if such a preliminary training school as you mention were established; in other words, what additions would be necessary to your buildings and what additions to your teaching force, and what would probably be the expense of maintenance after the original outlay for providing the necessary buildings and equipment?

A. Roughly: First would come the increase of cadet barracks—the incapacity of the barracks now as built. There would have to be an addition of six divisions.

Q. That is, the barracks are capable now of taking care of the full quota allowed by law, are they?

A. Yes; with a little addition. There are ten divisions of barracks; in each division there are 16 rooms, accommodating 2 cadets each, providing for 320. That is the capacity of the building as it now stands. There is one division of barracks used for quarters for bachelor officers and for dentist and barber, and that could be vacated and provided for elsewhere. That would give 32 additional cadets, and that would be 352. Then the angular barracks would accommodate about 40 more; that would be 392, and that is the extreme capacity of the whole building as it stands to-day.

Q. What would be the expense, probably, of the addition to the building?

A. First would come the addition to the cadet barracks; then would come the enlargement of the cadet hospital, that is, the south wing, and that ought to be done anyway for safety. Then the chapel would have to be enlarged about one-half, and a new steam or heating and lighting plant probably put in. The riding hall would have to be enlarged, and you gentlemen saw the necessity yesterday for an artillery detachment of men and artillery horses.

Q. Those you should have without regard to this matter?

A. Yes, sir.

Q. Assuming that we had this preliminary course, making the course five years instead of four years, and that we increased the number of appointments along the line suggested, giving one cadet to each of the governors of the States and Territories and one to each Senator, in addition to what we now have, what would be the increased expenses for buildings and tuition and for equipment growing out of that increase alone? The suggestion you make as to the necessity for increased service in the way of horses and men in charge and improved facilities for your drills, etc., would properly come under another head. It is more particularly the increased expenditure that would grow out of the direct increase in the number of cadets that I want to get at.

A. The building, according to an estimate that I had prepared, which is only an approximate estimate, of course, say, \$695,000; that is, basing the estimate on similar work done here in the past.

Q. That provides for 500 cadets, does it, and this five-year course?

A. Yes, sir. Then, of course, the increase would be 150; making 540. Then would come 12 instructors, with 12 sets of quarters. That would be included within the \$695,000.

Q. Those instructors would be largely detailed officers, would they not?

A. Yes; all officers. It would not increase the cost of the Army at all, and there would be a very small increase necessary in the force of laborers we have now. If these six divisions were added to the barracks, that would require the addition of three policemen—men for police duty—but the cadets pay for that themselves, and that would not add to the running expense of the Academy. It would be the cost of these buildings. Then there would be the pay of the 150 cadets. A cadet pays for everything now except his tuition.

Q. That would be \$700,000 for increase in the buildings, and \$82,000 for the pay of the cadets would make \$782,000. What expenses other than those do you think of? You need equipment, I suppose—

Q. (By Mr. MARSH.) Does this \$700,000 provide for buildings that are not provided for now?

A. Yes, sir.

Q. So the increase is not all owing to the proposed increase in the number of cadets?

A. No, sir; it is not.

Q. Would that amount include the extension of the riding school?

A. Yes, sir.

Q. This \$700,000 for building is an estimated increase of the number of cadets; in other words, it would furnish facilities and conveniences that ought to exist now but that do not exist?

A. It would.

Q. Your proposition would remove the officers' mess from where it now is, would it?

A. Yes, sir.

Q. And that would necessitate the construction of a building for that purpose, would it?

A. Yes; that was not considered in this \$700,000. This \$700,000 will cover expenditures that will have to be made if the corps of cadets is increased in number, say, 100 or over; it will cover all the buildings that would be necessary to increase the corps 150 to 175 cadets.

Q. What other expenses besides that in the way of equipment, furniture, and apparatus, etc., would have to be met by reason of this increase in the number of cadets? Did the \$700,000 include the furnishing of these buildings as well as the actual construction of them?

A. Yes—

Q. I am referring to the tables, heating, lighting, and the original plant?

A. Yes, that would cover all that.

Q. Do you think of any other expenses besides this original outlay of \$700,000 to get things in shape for this increased number of cadets?

A. No, sir.

Q. Then the running expenses after that—this represents the original investment—the running expenses after that would be the salaries of the cadets, 150 cadets, say, amounting to \$82,000?

A. Yes, sir.

Q. What other expenses—what would be the annual expense outside of that?

A. The lighting and heating would all be paid for; there would be no extra expense entailed in that. Cadets pay for the gas and for everything except their tuition.

Q. Would it not materially reduce the average expenses if you should add 100 or 150 cadets a year, say, per man?

A. Not very much. In January and February—the corps of cadets was up to its maximum for that time of year—the cost per man was 50.84 cents per settlement. In this last settlement for March and April the daily expense for a cadet has been 51—a fraction over 51 cents a day, but a number have dropped out, and the increased cost has been about a cent a day.

Q. So that the difference of 100 or 150 cadets being added a year would not reduce the average expense per man?

A. No, sir; it would not. It can not be gotten below \$30 or \$31, living as they live. The work exacted of cadets, in order that it may be good, demands the best for the table, and I don't feel that it can be reduced much below \$30 or \$31 a settlement, or below 50 cents a day.

Q. If there should be a saving, it would go to the credit of the cadets, would it not?

A. Yes, sir.

Q. Now, another subject, not quite connected with this, but I think quite apropos. Have you any suggestion to make as to any modifica-

tion in the course of studies? I understand your course is now prescribed by the acts of Congress, while the course of study in the Navy is prescribed by the Secretary of the Navy. Have you any suggestions to make as to a change in that respect—whether it is desirable that the matter of regulating the course of studies to be pursued shall be in the hands of the War Department, as the course pursued in the Navy is in the hands of the Secretary of the Navy?

A. If any change is made, I think it is very desirable that a higher standard be fixed by the Secretary of War. The Revised Statutes fixing the standard is vague now. In the Navy it is in the hands of the Secretary; consequently, the Navy has a higher standard of admission than the Military Academy.

Q. And although the age limit is one year less in the Navy?

A. The standard of admission to the Military Academy ought to be made higher, because we would then be able to accomplish more.

Q. Have you made any examination of the comparative requirements of the Military Academy here and the academies or colleges throughout the country which do the equivalent of your work along certain lines, as to the entrance examination?

A. No minute inquiry, but in a general way only. We are away below the universities and all of the higher class of colleges throughout the United States.

Q. In other words, you are expected to do a certain class of work equivalent to the best universities and technical schools in the country and yet required to take pupils under the law with less qualifications than are required in those schools?

A. Yes, sir.

Q. You refer to the cadets at Annapolis as being younger and yet requiring a higher standard, speaking of the five-year course? Would you suggest a reduction in the age requirements for entrance to the Military Academy? Now, the candidates are entered from the age of 17 to 22. Would you recommend that if we are to adopt a preliminary school, or make a five-year course, that the age limit should be reduced to 16?

A. No; I would keep it as it is, because the course is so severe that in a majority of cases a boy entering should be 17 years old.

Q. I presume what you intended to say was this, whether the age of admission to that preparatory school might not be fixed at 16, which would make the age for actual admission into the Academy 17, as it is now.

A. No, sir; I would have it 17 for the preparatory school.

Q. As a matter of fact the great majority of admissions are of applicants considerably beyond that age, are they not?

A. Yes; the average age of cadets here in the corps is over 21.

Q. Can we be furnished with that statistical information, as to the ages of the cadets; have you any records about that?

A. I am not certain about that; we have all that information, but whether or not it has been collated I am not certain.

Q. Then, as I understand the Superintendent, he would not have the minimum age for admission reduced, although he would suggest and does recommend a year of preparation, a five-year course—the examination to be held at the end of the first year. Is that correct. Colonel?

A. Yes, sir.

Q. I should like to know the Superintendent's opinion as to this theory of so many candidates coming here failing in their examinations, and this when the standard is as low as it is. The theory I wish to ask about is that many of these boys coming here are scared to death—lads from the country who perhaps have never seen a company of the United States soldiers or a United States Regular Army officer dressed out in full regalia in gold and all that in his life. Some arriving here and going to a preparatory school and get some idea of these things, get familiar with seeing a United States Regular Army officer in full regalia, and United States soldiers, but a large majority do not go to a preparatory school. I wonder if a large number of these boys are not so frightened out of their wits that they do not do themselves justice in their examinations. The reason of my asking this question is that it would be another great argument in favor of letting that boy have on his physical examination alone a year to become familiar with this sort of thing, and when he walks in with his mind clear and confident of himself he passes his examination and is not sent back with a certain feeling of disgrace. Would not that year preliminary to an examination of that kind give a fairer show to our youth?

A. There is no question that it would. I think that a great many of the candidates who come here are overawed and become rattled, and especially these boys at Highland Falls. I think outside preparatory schools are detrimental to the interests of the Academy. In the first place, they are simply a coaching school; a lot of questions they have got hold of are used for years; there is no instruction but coaching, which is detrimental to good studying and proper reasoning, and the boys down there get into habits and associations that are bad, and the influence throughout their course is bad. It would be a good thing for the Academy, I think, to weed these places out. It should be regulated by going in without an examination.

Q. But they are very popular with all the candidates, are they not?

A. Well, yes; simply because it coaches them up. There are a lot of questions that have been asked at the preliminary examinations, and the instruction is simply to go over those questions and picture them in their brains without reasoning them out on proper lines. In these schools there is no supervision over the pupils. They simply come in and recite and then loaf about the town, and it is a town that is full of places of amusements that are not conducive to good morals. They indulge in the habit of hazing, which we are doing everything to break up here. Altogether the influence of those schools is bad.

Q. They are under an army officer, are they not?

A. Captain Braden has the school there, and I think if he spoke honestly he would say that the influence of his school is bad.

Q. If this proposed plan were adopted and put in operation, and if, as the Colonel says, it would result in a lessening very largely of the number of cadets rejected at one time or another in their course, would it not have the practical advantage of lessening at the same time the number of persons who, rightly or wrongly, feel aggrieved by the failure of the men whom they are interested in, and would it not therefore lessen the number in attendance at those schools?

A. I think it would.

Q. The course of study in the Academy is fixed by law, is it not?

A. No—that is, the preliminary examination is fixed by the Revised Statutes, but the Academic Board regulates the curriculum itself, with the approval of the Secretary of War. If it becomes necessary to change the text-books, that matter is considered by the Academic Board.

Q. Now, if this increase has the result that you suppose it would have—less failures—there would be much less waste; in other words, you would get more officers at a less average expenditure. If 90 per cent of those who come in graduate instead of 50 per cent, the average expenditures made by the Government would be much less, because where a man comes in and takes part of the course and then goes out his pay is lost, is that not true?

A. Yes; and the percentage of the cost of instruction and plant; of course, there is a great waste there.

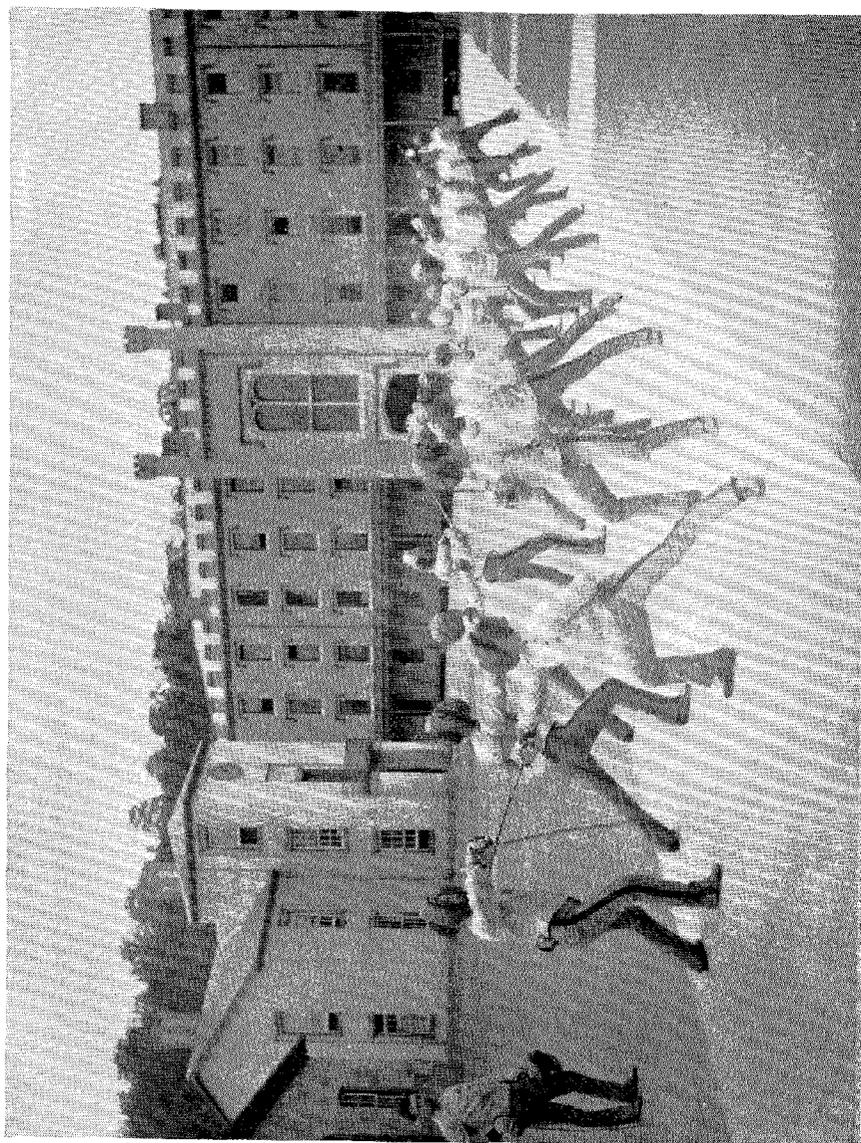
Q. How much in four years, about?

A. Four per cent interest on the cost of the plant. The education of the cadet costs, if you take in the whole plant and pay all officers, and everything of that kind, it would amount to at least \$20,000.

Q. So that by doubling the number who graduate and finally enter the Army it would diminish the cost pro rata?

A. Yes, sir. In making that statement I take into consideration what the plant has cost the Government here, the money that has been appropriated for the Military Academy and is represented here to-day in buildings, quarters, armament, etc., and in the pay of officers on duty.

Q. (By Colonel MANN.) Is there any recourse or any latitude given in a case where a candidate was proficient in various things and in everything, except that he was deficient in, say, descriptive geometry—that may be a very essential study—but it is possible that in the organization of a man who might make a splendid officer generally, but is deficient in some one of those things? I suppose the general character of the man should lead the Academic Board or the Superintendent, knowing the nature of the young man, to say in their own mind: "This man would make a splendid officer, but we are sorry that, because of this



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(perhaps a natural) defect, he will not pass." I want to know if there is any latitude, or if there is any recourse in a case of that kind—a man being deficient in any one particular thing, which is prescribed by the regulations as essential, but yet in which the candidate is found deficient—is there any chance to save that man to the Army?

A. Every chance is given him. The Academic Board, in its consideration of those cases, goes over the cadet's entire course. Each head of a department reports the cadet's progress in the department. If he stands well in other departments that is taken into consideration. Every means is resorted to to enable that boy to get through. Take this course of descriptive geometry, for instance. There are now quite a number of cadets who will be reexamined, having failed at the last examination. The subject has been gone over thoroughly, and the boys are given every chance to recover. They can be turned back frequently to the next class if the board is convinced that a further course in a study will help the cadet through.

Q. In other words, the object of the board is to encourage young men to remain and go through, even if it takes more than the four years, rather than to squeeze them out?

A. Yes, sir.

Q. Is it in the power of any one member of the Academy counsel to say that a man can not or can go through?

A. No, sir; it is not.

Q. What I want to know is whether the regulations or the law governing permits, when a man is found absolutely deficient in some one point, some essential point, whether or not it is in the power of the board to take into consideration what good qualities a cadet may have and overlook his apparent deficiency when coming to a decision?

A. It is; they do that right along. It requires a majority vote of the Academic Board to recommend a cadet for discharge.

Q. How many chances are usually given the same cadet; do you ever allow him to drop back one class?

A. A cadet would not be allowed to go through a course more than once.

Q. And if he failed in the fourth-class work and is turned back, he then goes into the third class, and what if he fails there?

A. Then he would be recommended for discharge, because the Academic Board would be convinced that he was unable to master the course without a double course in each succeeding year, and that would defeat the ends of the law. The country wants the best material that it can get here, and if you assume to foster weak men you deprive better men of places they are entitled to.

Q. Have you investigated at all the question of the comparative merits of the two systems of appointment—appointment by competitive examination and direct appointment?

A. The records show that the greater number of those who come as the result of competitive examination graduate.

Q. Do they make physically and from a military standpoint generally as good men and officers as do those who are selected or obtained by appointment?

A. I doubt if they do, as a rule, I think that in the selection of candidates, however, if Congressmen were governed by their own knowledge of the essential qualities that an officer should have, as a rule it would be better for the Congressmen to select the candidates without competitive examination.

Q. There is no law that compels a competitive examination, is there?

A. Not at all, but it is a custom. I was told by a Congressman from New York, who had given his appointments to a competitive examination, that the result was disastrous, and he said if he remained in Congress he would hereafter select the appointees in his own district from boys whom he thought had the necessary qualifications.

Speaking of the chances given cadets who fail in, say, one particular branch to recover. If you were at the head of a department and a cadet was shown to be very proficient generally, but deficient in some one thing, you would be loath to see that boy leave the Academy. And there is the Superintendent who also has his say, although he is a member of the Academic Board. In forwarding their resolutions, adopted by a majority vote, to the Secretary of War, he also has the power of expressing the approval or disapproval of the conclusion reached, and all these means weigh over to safeguard the boy's interest. The Secretary of War also has a veto power.

COMMITTEE ON DISCIPLINE AND INSTRUCTION.

[Colonel RODGERS, *Chairman.*]

Q. Understanding that the Superintendent regulates the discipline at the Academy, I assume that no recommendations in regard to discipline are in order?

A. I have no recommendations to make. The Superintendent is responsible for discipline. His actions are controlled within certain lines. That portion of the academic regulations prescribed by the Secretary of War is fixed. They prescribe the punishments. These punishments embrace prison confinement, extra tours of duty, and demerits. For many years these extra tours of duty have been awarded to cadets. On Saturday afternoon and Wednesday afternoon, when cadets have recreation—after 4 o'clock on Wednesday and 2 o'clock on Saturday—the punishment tour is varied from two hours' duration to one hour and to walk all the afternoon. Say a cadet had two punishment tours, along in the summer time he could walk these at one time; but I have dropped that; I do not administer it except in certain cases, perhaps. But it is a discipline that is no longer resorted to in the Army, and I believe that it is to a certain extent degrading, and I therefore do not administer it. I am trying to make the matter one of demerits.

Q. Is it understood that they are on duty as sentinels?

A. No; simply keeping them apart, walking up and down this post, instead of the area. I do not believe in it except in special cases. I would apply it in the third or fourth class where a cadet had been guilty of some flagrant neglect or violation or some offense for which I would not care to have him tried by court-martial or ask for his dismissal, but would administer it as an object lesson to the cadets. As I said before, I am trying to make demerits the main punishment, and with the understanding that when they exceed the number of demerits fixed by regulation, as far as I can bring it about, their connection with the Academy will be brought to an end, and when that is accomplished and thoroughly understood the desire to stay at the Academy is so great that a cadet will be loath to get the maximum number of demerits; but when he does exceed that number he is no longer a good subject to have.

We have had a case of that kind lately, and that brings up this subject of the way Congressmen and Senators are feeling. There was a cadet two weeks ago discharged for deficiency in discipline. His course for the last year had been very bad as an example to the other cadets. He had violated regulations right along. He had been engaged in a number of proceedings that were not creditable, that were in violation of the regulations and discipline, and his general moral tone was not good. I myself sent for him several times and told him that if he got the maximum number of demerits, just as sure as I could bring it about, he would have to leave. The Commandant of Cadets also counseled and warned him, but it was of no avail; so that when he got the maximum number of demerits I reported him as deficient in discipline to the Academic Board, and they recommended his discharge to the Secretary of War and he was discharged. The other day a communication came from the Congressman who appointed him to the Secretary of War, stating that he had been very much interested in this cadet and knew him to be a manly fellow and one who seemed to have all the requisites for an officer and a gentleman. That statement was indorsed by the present Congressman from that district, and the two Senators from the same State also added their request, and the matter was referred back to the Academic Board for further consideration.

The board considered those letters carefully, then went into the subject of this cadet's course here, and adhered to their resolution, because here is the record, and we know exactly what kind of a man he is. Just to illustrate, I will tell you. He contracted a debt at a store not far from here, in violation of the regulations, with a dealer in contraband articles. This debt was for articles such as tobacco and other things that cadets are not allowed to have. After his bill had run up he declined to pay and so declared. The man wrote to him, and his answer to this man was an abusive letter filled with vulgar expressions, and ungentlemanly and dishonorable all the way through. The dealer put the matter in the hands of his lawyer and the lawyer wrote the cadet.

The cadet replied to the lawyer in a similar strain, and the lawyer sent the communication to the Superintendent. The cadet was then reported. All that appears on the record.

Now, unless you go back and see what this correspondence was, all you would see is the fact that he contracted a debt without authority, but the moral character of that cadet is shown by all that correspondence. His coming back here would be harmful to the last degree to the discipline of the Academy. The Secretary of War could disapprove and order him back. There are other matters, offenses, say, for trifling in the Academy building. He was section marcher; it was his duty to march a section. He wanted to shirk that responsibility and wanted another cadet to march that section. He shirked the responsibility; he was perfectly willing to allow the other cadet to assume the responsibility and assume danger of the reports in order to save himself. Well, an officer noticed that he was not marching his section to the Academy building. He made an explanation and endeavored to get off the demerits that that report would entail. His explanation was not a straightforward, manly, truthful explanation, such as we want here, but he resorted to a statement which, while not absolutely untruthful, was a deviation from the straightforward truth that we do not want to have here. All of those matters coming in to us give an exact index of the character of the cadet, so that in spite of the recommendations of these gentlemen, we know that the cadet has imposed upon them and is not worthy of their support, and he would be a poor man to send back to the Academy, and if he did go through he would be an officer placed in some position of trust, and would probably fail.

Q. (By Colonel MANN.) I should like to ask the Superintendent a question on two points: This question of truthfulness—there is nobody but will agree that the first principles we ought to instill into our officers is that of plain, old-fashioned, straightforward truth; this question of discipline involves one point—the question of the use of tobacco. Understanding that the Superintendent said that tobacco had been purchased in violation of the regulations, I want to ask whether, in his judgment, as a soldier and as the Superintendent of this Academy, having himself once been a cadet, it would not be wise or unbiased to modify that rule, under certain restrictions, in the use of tobacco? I do not know that tobacco is essential at all to a young man, but I would like to know whether a reasonable control of the habit could not be had by what you call moral suasion, permitting that those men who desire, after information and moral suasion, who still desire to use tobacco, that they use it openly, without resorting to telling a lie in order to get it. Would it not be a good thing for this institution if such a regulation was made?

A. I am free to say that if it was within my power I would change that regulation and permit, as formerly permitted at the Academy, the use of tobacco under certain restrictions, and my reasons for doing so would be these: When I was a cadet we were allowed to smoke during release

from quarters (which in your investigation you will find is not a very long time in the twenty-four hours). I do not believe it was harmful in any way. I believe the use of tobacco among soldiers is an excellent habit, because after coming in after a long march or drill, or when they have been subjected to many privations, they get their pipes, and their sorrows and hardships all pass away and they are contented and happy.

At the Academy the prohibition of the use of tobacco leads cadets to smoke cigarettes and indulge in all kinds of habits. They will go out to the sink and in the area way simply to get a smoke, which many would not have had a desire for if it was not prohibited. It is like the prohibition of liquor in the liquor States—it does not prohibit. The regulation was made by the Secretary of War with the initiative of the Women's Christian Temperance Union and organizations of that kind throughout the country, who are often actuated by what they consider the best motives; but I think they make a mistake, and this regulation is a mistake. But I would not like to have this rule changed. I think there would be a howl throughout the country by the people who are making the assault on the canteen in the Army, which has done more for discipline and for the contentment of the men than any other one thing that has been done for the Army. My experience and the records of Fort Custer, Mont., will show that for the first year after its establishment there violations from drunkenness were reduced between 70 and 75 per cent. Fort Custer was an ideal place for a test of this kind. It is in the middle of a big Indian reservation and far away from any town. Before the regulation went into operation the post trader was in control. He sold beer loaded with alcohol, and sherry—Sand-Hill sherry, a most appropriate name, for it would drive a man crazy if he drank enough of it. When pay day came around the guardhouse would be filled with soldiers. When the trader was closed up and the canteen established there was no perceptible increase in the number put into the guardhouse after pay day; probably there would be five or six soldiers in all. The soldier was given the privilege of having beer of good quality, but the endeavor was made not to induce him to drink beer, but by providing other amusements he was encouraged to diminish the resort to beer.

Q. You would prohibit the use of cigarettes and allow the use of good tobacco under restrictions, would you?

A. I would allow the boys to buy smoking tobacco and regulate it.

Q. How much time would that give them to smoke—that release from quarters?

A. At this time of year a half an hour after breakfast, a half hour after dinner, and a half hour after supper; that is, an hour and a half. Then perhaps a half an hour between recitation at 4 and parade and drill. Commencing on June 1 the parade takes place at 6.30. During the winter he has in addition to that hour and a half about an hour and a quarter. If he devoted all his time to smoking, he would have about

three hours. I do not say that I would encourage the use of tobacco in any way, but I believe it is better to authorize a certain use of tobacco than it is to prohibit its use and have them use it in violation of the regulations.

Q. (By Dr. WHITE.) I regard this as a special problem. I do not think we are talking about any average 300 men. It seems to me that this curriculum practice is keeping your boys in training for about four years. While I do not think the effect of moderate smoking is especially prejudicial to the average boy, if I had 20 men to get into training they would not be permitted to use tobacco, for I know it would hurt them. It is heart depressing, even if used in a moderate way.

Q. Tobacco and the army canteen are now regulated by law?

A. I would suggest the wiping out of the last legislation. Outside of my personal feelings and views of the matter, as long as the use of tobacco is a regulation it is enforced as any other regulation. If the gentlemen will go over the delinquency list published every Friday afternoon they will find that the number of tobacco violations constitute a very large number of the reports for violations. They have gone up some weeks to 25 or 50 per cent of them. There is a heavy punishment for violation of the regulation, and if the cadet violates it four times in succession he gets a more severe punishment.

Q. Then the demerits are all regulated by certain punishment—the Commandant or the Superintendent has no discretion whatever in regard to awarding punishments?

A. It is entirely in the hands of the Superintendent. The explanations go to the Commandant, and he indorses on them whether or not they are satisfactory to him. The Superintendent generally follows the Commandant's recommendation. If the cadet thinks he has been unjustly treated and appeals to the Superintendent, the Superintendent decides finally, according to the regulations and the offenses. The offenses are fixed under seven different heads, and about January the offenses that would come under these different heads were given to the cadets, so that the cadet knows exactly what his punishment would be for a violation. In the first class, which gives seven demerits, the offenses are less serious, and so on down to one or two demerits.

Q. When do you resort to this prison discipline?

A. Only in an extreme case.

Q. Assuming that the course should be extended to five years, as has been suggested, what modifications or changes would you make in the present course of studies?

A. It would necessitate the revision of the whole course of study; it would take time to do that. I think each head of a department should be required to submit a report showing what course in his department in his belief should be pursued.

Q. Will you put that in the form of a communication to the Board of Visitors?

A. I will; but that would be one of the details of the change; it would be better, I think, to leave that question to be worked out by the Academic Board and the authorities.

Q. This proposed preparatory school, if established, would enable you to increase your course in Spanish by giving a year's work in Spanish instead of six months. Would you think that advisable?

A. I should think it very necessary.

Q. (By Dr. WHITE.) Would it enable you to find the time for the course in military hygiene I was speaking about?

A. Yes; it would.

Q. (By Colonel MANN.) I would like to know whether it is not desirable that there be an amendment made to our existing law which would provide for the regulation of the course of study at the Academy by the Secretary of War, rather than have it fixed by cast-iron law of Congress; in other words, whether the changes that become necessary from time to time in the course of study in the passage from class to class—whether they ought not to have a certain amount of elasticity which can only be obtained by putting the matter in the hands of the Secretary of War, instead of having the requirements fixed, as now, by statute?

A. Decidedly; I think that would be good. Those requirements were fixed in 1802, and along until the Academy got to its present foundation there has been no change in that respect at all, but there has been a change in the text-books themselves.

Q. Do not the Academic Board prescribe changes in studies from time to time—add to them and take away?

A. Yes, sir.

Q. Then that law is really not a damper upon them, is it?

A. The Academic Board controls the studies that the cadets study, but not the course of studies.

Q. (By Mr. BROMWELL.) If the present course was modified so as to meet the requirements of increased attendance upon the Academy, would it be your idea that additional subjects should be incorporated in the curriculum, or would you aim to cover more thoroughly those you now have, immediately; or would you leave that to modifications suggested from time to time by the Academic Board?

A. I think it would be best to adopt, first, what would be believed to be the best course; then as experiments showed, to change. I think that military hygiene is a very necessary course. Lectures on the subject were given in camp last year by medical officers of the post and will be given this year, to impress upon the cadets the necessity of military hygiene.

Q. Do you give any special instruction upon the care of the sick and wounded to these cadets—any hospital training?

A. No, sir; except what they observe from their own experience.

Q. (By Mr. MARSH.) On the subject of law, you have instruction

here on international law, statutory law, military law, but, as I understand it, no instruction upon common law?

A. Nothing further than that embraced in military law.

Q. What are your views as to the necessity of a more extensive course in law, in view of the new conditions, especially those coming before the country now, which will place responsibilities upon officers in our distant possessions of administering, to a degree at any rate, and for a considerable time now and probably hereafter, civil jurisprudence?

A. It will be more necessary than ever before; it would be very advisable to take up instruction in common law.

Q. Rather civil law than common law, would it not?

A. Civil and common, both. In our study of military law where military law deviates from the common law reference is nearly always made.

Q. Officers are not instructed here upon the science of civil government to a thorough degree, are they?

A. No, sir; they are not.

Q. That is almost entirely dropped out?

A. I do not think it has ever been in. The civil government part is not touched upon, and it is highly important that it be taken up.

Q. Do you think the study of common law and civil government ought to be taught in the Academy?

A. I do; but then there are so many other things that have to be studied in the equipment of an officer that with the present four-year course I do not see how more could be accomplished.

Q. The law of 1818 is broad enough to cover it; is it not?

A. Yes. There is no question about the authority and the arrangement of the course and the five-year course; matters of that kind could be given their proper recognition. The board is thoroughly alive to all the questions that confront the country now and to the education of the cadets. This last class that graduated in February had about two weeks' leave of absence, and a great part of them now are in the Philippines, Cuba, and Puerto Rico, and in positions of responsibility.

COMMITTEE ON ARMAMENT AND EQUIPMENT.

[Colonel CAFFEY, *Chairman*.]

Q. I should like you to suggest, Colonel, what is needed in addition to what you have now, and whether you have any available or contingent fund out of which a better armament might be created.

A. The armament at the Academy, with the new guns that are on the way, is very good. Take the field artillery: We have the mounted battery which you saw yesterday—thoroughly late guns, and the regular service guns, 3.2-inch guns. We have another battery of similar guns for dismount instruction; and the siege battery, which is equipped with two 7-inch breech-loading howitzers and four 5-inch

siege guns of the latest design; then those six Rodman mortars that are no longer in use. There are six breech-loading mortars which will take their place. In the seacoast battery, right down on the river's edge, there are eight guns; two of them are comparatively modern, the others are old and obsolete. There is one 12-inch howitzer and an 8-inch rifle, but I think it would be advisable to have in that battery a sample of each of the disappearing carriages that are now used, so that cadets can see and handle them. They do see those carriages through models in the Academy building, but it is well that they should also have practice in the manipulation of actual carriages.

In addition to that we have batteries of the different machine guns—Gatling 45 caliber and one 30 caliber on carriages (the second Gatling is a tripod), the rapid-fire guns, and the Hotchkiss and Nordenfeldt. The cadets are instructed in their use. We have one mountain Hotchkiss now, a gun that will go anywhere, and we will have three more of these guns with the pack outfit that should accompany them, so that the cadets can be thoroughly instructed in their use. When we have those three guns our equipment—with disappearing carriages—the equipment will be very good. There will be a request made for those three guns I speak of. No legislation is necessary for that.

Q. Have you here any armament that is not furnished by our own Ordnance Department? Is it, in your opinion, desirable to have here such armament as we do not use in this country ourselves, but which is used by foreigners, for purposes of information?

A. No, sir; I do not believe it would be practicable to give the instruction. It would, however, be desirable to have an armament of that kind for the cadets to see it, but the instruction that we must give here will be in the arms that cadets will use when they become officers and go into service.

Q. Would it be desirable to have arms of other countries here—for instance, in the museum—to keep up with the modern arms of other countries?

A. Yes; but it would be expensive and there are other things very much more needed, and it would be better to secure, I think, what is absolutely needed rather than material of that kind. The Ordnance Department of the Army is familiar with matters of that kind, and those things could be left with that department.

Q. In the matter of soldiers as reserves at this post, what are your views?

A. We should have an artillery detachment, trained artillery soldiers, whose business it should be to man the field battery and take care of the horses belonging to that battery. The number of horses would be not over 50. The detachment would be about 50 men.

Q. (By Mr. MARSH.) Might they not be held here for the spring, summer, and fall?

A. That would break up the routine in the regular battery furnishing the detail, say, a battery at Fort Wadsworth; if you take away

that number of men it would cripple that battery. But if you had a battery here it could be used, though not a full battery, but sufficient for the appropriate instruction.

Q. That would involve the construction of quarters, would it not?

A. Yes, sir; stable—stable for six detachments. This will have to come; it is one of the needs of the Academy. A majority of the drivers you saw at the drill yesterday are recruits of less than one year's service, and they ought to only do their cavalry duties—taking care of horses and other duties as cavalry soldiers—but they have also now to make artillerymen of themselves.

Q. As to camp—how long do the cadets spend in camp?

A. They go in June and camp will break on the 29th of August.

Q. While in camp are they put through any course of instruction or do they take care of themselves?

A. They take care of themselves. They acquire very valuable information, but there is no theoretical instruction, there being a regular programme.

Q. Do they take care of themselves just as if they were in the field, with the exception of the mess halls?

A. Yes, sir.

Q. (By Dr. WHITE.) I saw in a report for 1898 the subject of a range for the 8-inch gun. Is there any danger—

A. Congress made an appropriation of \$2,000 to build or excavate a tunnel, and it is hoped that that will meet the purposes. These guns are very powerful guns, and firing against that cliff a ball is very apt to go over to Cold Springs or to rebound back to the post. If this tunnel is not sufficient to break up and permit the shells to be found we shall have to resort to some other means, such as used in the Navy, or a substructure.

Q. Has that tunnel been built?

A. No; not yet. The appropriation is to be up on the 1st of July. The tunnel will be 20 feet in diameter and as deep as the money will allow. It is going to be oval and the inside will be a little bigger on each side than the opening, so as to find the shells there.

Q. Do they furnish you with smokeless powder for small arms?

A. Yes, sir; but not for large arms.

Q. Have you made a requisition for that?

A. Yes; we have the ammunition we used for the large guns. I think it is the old black powder mentioned. I will inform you later on that subject.

Q. There is no danger of premature explosion or spontaneous explosion with that smokeless powder, is there?

A. No, sir.

Q. Where do you get that smokeless powder from?

A. I am not certain. I think it would come from the Du Pont works in Delaware.

Q. (By Colonel MANN.) I would like to ask if an abundant allowance of money for the purpose of practice is provided now. Is it the rule here to give the Superintendent all he thinks is necessary?

A. I think so.

COMMITTEE ON BUILDINGS AND GROUNDS.

[Colonel MARSH, *Chairman.*]

Q. Will you please give a statement of your views, Colonel, on the subject of the increase of buildings, grounds, and improvements of grounds—first, without regard to an increase of the number of cadets in the Academy, and subsequently with a view to that end?

A. As the Academy now stands it is pretty well equipped with buildings. This hotel we are in here speaks for itself. (At this point the Colonel told in detail the condition of things at the hotel, etc., the gist of all of which is embraced in his communication to the board.)

Q. You stated in that communication that the Government was at no expense for the construction of this building—this hotel?

A. The building was constructed originally from the sale of wood on the reservation—people cutting wood—and that created a fund which for many years was known as the military fund, which was disbursed under the control of the Superintendent. That fund accumulated and this hotel was built out of it. No appropriation has ever been made for this hotel.

Q. To whom does the furniture belong?

A. To the proprietor.

Q. The present cadet mess house is occupied in the south end by what?

A. By the bachelor officers' mess on the south, and on the north that was occupied as officers' quarters until it became necessary to have them put somewhere else. The rooms of the cadets were so crowded that last fall we turned that over to their use to relieve the congestion in the main dining hall. Tables were put in.

Q. When the Academy is reasonably full is the present room sufficient?

A. Yes, sir.

Q. You deem it necessary to remove the partitions, at either end and include these two officers' mess rooms?

A. Yes, sir; I think that ought to be done, because that whole building can be used for cadet mess purposes and the transaction of different business that belongs to the cadet mess, and all the rooms actually connected from the north to the south.

Q. Has it been ascertained whether the structure is such that the partition at the north and the south could be taken out?

A. It can. The building is an excellent one and well built, and will last for a great many years.

Q. When that change is made what will the officers do for a mess room?

A. That must be provided.

Q. That means a new structure, does it not?

A. Yes, sir.

Q. Is there any other building that could be used for that purpose?

A. No, sir.

Q. Has there been any suggestion or estimate made as to the size and structure of an officers' mess?

A. Yes; there are being prepared now plans and specifications for a building that will meet the requirements of the Academy for years to come and for any increase that there may be, and the buildings will accommodate the officers' mess and will also furnish quarters for additional bachelor officers.

There is another and very important point here. Right along the number of visitors coming to the Academy is increasing. Especially foreign military officers who come to the United States always come to West Point, because West Point to them is known better than any other place in our country. We all have a pride in putting our best foot forward, and it is only right that people of that kind should be entertained in a becoming way. Now we can only do so by taking them to our own houses, which is often a matter of embarrassment to the visitors and to the officers, because the running of an officer's domestic arrangements are often interfered with, and many of our own officers who want to come to West Point do not come because they feel that they can only come by trespassing upon the hospitality of their friends and do not wish to do so. Consequently there ought to be a building that could be used for that purpose—for the purpose of bachelors' mess and the entertainment of foreign and domestic visitors. All the new permanent military posts that have been built are provided for in these respects—Fort Sheridan, Fort Thomas, and Fort Hancock.

Q. Are you allowed a special fund for entertainments?

A. The Superintendent is allowed \$1,000 a year to compensate him for the official entertainments that he gives.

Q. Have you any estimate as to the cost of the building?

A. I have no exact estimate. That could only come after the matter is thoroughly gone over by the architects—competent architects. We have got to rely upon our own talent here as far as we can go, but it would be a very close approximation. I should think a suitable building ought to be put up, with the expectation that it would last as long as the Academy lasts and to harmonize with the surrounding buildings—it ought to be a building of stone—for \$50,000 to \$60,000.

Q. What has the building corresponding to that cost at Fort Sheridan?

A. It cost more in some ways. As I understand it, the mess part cost about \$30,000; but that was part of the general plan of building when the post was established. The building contains three stories of

its own, and to the right of it and connected with it and part of it are quarters for quite a number of bachelor officers.

Q. What other improvements or extensions do you think are necessary for the existing buildings here?

A. Nothing beyond the necessary repairs that occur right along every year.

Q. Was there not something urged last winter in Congress for a porch?

A. A porch around the cavalry barracks, which are exposed to the sun. If the soldiers want to go out to get fresh air they have to sit in the sun to get it. Also the hospital stewards' quarters should have a porch around it. This would be an expenditure of \$200 or \$300, or perhaps \$400. There is nothing that occurs to me now beyond the ordinary repairs of the buildings.

Q. As I remember, last year you were urging an appropriation for a closet for the cadets. That was provided for in the last appropriation, was it?

A. In the cadets' rooms the clothespresses are simply shelves, and as they sweep out the rooms in the morning dust forms and gets in upon their clothing, and this involves additional labor to keep their clothes clean. There ought to be doors. It is a simple little closet, that would afford the necessary space for the clothes. It would involve the expenditure of \$2,500 to \$3,000 to fill the whole barracks. That would furnish one for every room. They ought to be made of fairly good wood and be well made and of seasoned lumber.

Q. (By Mr. MARSH.) Now, you have covered all the improvements and extensions that you think are necessary to the existing public buildings. What about the public grounds?

A. As you will see for yourselves, we must grade and fix up the vicinity of Memorial Hall. That appropriation was cut out of the bill; I was willing to sacrifice that in order to get the furnishing. The idea is to extend the road in front of the barracks, continuing it in front of the library, and then connect it with the road running in front of Cullam Hall. That will not be a large expenditure. To prepare the grade and to build the necessary sidewalk and granolithic pavement, it would be about \$3,000. On the road to the railway station, the main entrance to the public grounds, there is a retaining wall, and about halfway up there are three distinct cracks. This is dangerous, as some morning it is liable to fall out, through the jarring of trains or through some unusual strain. An appropriation should be furnished for that wall. The idea would be to build a wall halfway up, buttressed; also, on the ground to the east of the railroad tracks and up to the tunnel, a sea wall. That will be comparatively inexpensive. We have the rock at hand, and want simply the necessary labor to construct the wall up to the tunnel, to preserve that ground and make it a place where people coming to West Point in large numbers may wait for boats, and for

picnic parties, instead of having them up on the plain scattering their refuse and lunch baskets and papers. The railroad people and the telegraph people have responded at once, signifying their willingness to do their share, and I think it will be a great improvement.

Q. Do you think the Army service cadet corps large enough?

A. There has been an increase of 25 men. There are 125 now, but I think there should be 150 men.

Q. That would not provide for the additional equipment, with the additional increase in the cadet corps, would it?

A. I think it will; in fact, I know it will, because it will not require an increase of machinery, and the new arrangement will tend to economize because it will consolidate the plants.

Q. Have any steps been taken toward the improvement or reconstruction of the library building?

A. Specifications are being drawn up, and there will be a meeting on the 1st of July. We can not spend any of the appropriation before the 1st of July, but the working plans are in consideration, and we hope to commence after July 1.

Q. Have you commenced moving the books?

A. No, sir; as soon as the examination is over they will be moved.

Q. Will you give your views to this board as to the necessary buildings and the cost thereof, in case the number of cadets was increased to 500 or 600?

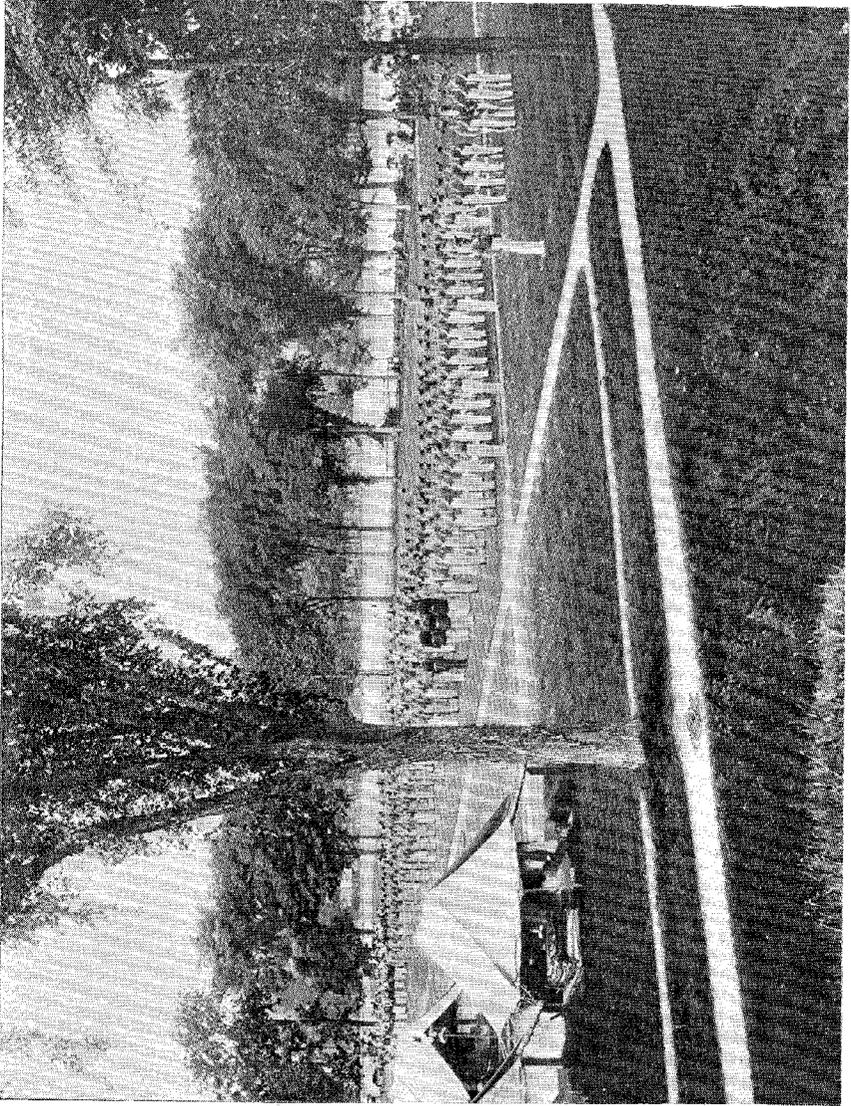
A. The cost of the buildings would be an approximation I would have to give, because to get at anything closer would take a good deal of study and would take expert knowledge. The additional barracks, adding six divisions to the present barracks and completing three sides of the quadrangle, would cost about \$300,000, basing that estimate on the cost of the old barracks. Then the enlargement of the chapel would be a matter of \$10,000 or \$12,000, perhaps \$14,000. The erection of a new heating and lighting plant and putting it where it should belong—down on the flat—would be a matter of, I suppose, as near as I can get at it, \$150,000.

Q. (By Mr. BROMWELL.) Is your heating done by hot air or by hot water?

A. By hot water—and lighting by gas.

Q. (By Mr. MARSH.) That would be \$470,000?

A. Yes, so far. Then there would be the south wing of the cadet hospital, an expenditure of \$40,000, to complete the building as planned. That is a pressing need, for this reason: You remember that through your efforts they gave the money for fitting up an operating room. There is no surgical ward now or ward that the surgeons feel that they could use for putting patients under the influence of chloroform or ether and taking them from there to the operating room. There is no room in case of an epidemic. We now have measles around here; this morning there were eleven cases of measles. I think there ought to be an isolated building.



INFANTRY—BATTALION, PREPARED FOR INSPECTION.

Q. Isn't it better to have temporary structures that you can destroy, when the time comes, for those epidemics?

A. Our methods of disinfection are so good here that any structure put up can be disinfected. I should think a separate structure for isolated purposes would be best. As Colonel Marsh remarked last winter, when the subject of an operating room came up—Colonel Marsh said that while there have not been very many operations here in the past, you must be prepared for anything of that kind in the future. Now, since that statement was made there have been five vital operations performed here—very important operations.

Q. For the hospital you think there should be an expenditure whether the extension be made or not? The fact is, you think there should not be any increase in the number of cadets until these improvements in buildings had been built first?

A. I think it would not be well if any increase was made by law. The increase should be gradual; that is, each Senator should be given an appointment. The idea would be to give to each Congressman an appointment when he is elected. Now, frequently a Congressman goes out of office without appointing a cadet. But every two-year term he ought to have an appointment; and, say, Senators were given an appointment each one, that would add 90 cadets, while a Senator from each State would make an appointment this year and the other Senator would hold off until next year, so as not to send the 90 all at once, but send 45 this year and 45 the next year. Then it would be necessary to make an appropriation for changing the heating plant and getting that under way, and then take in the increased number of cadets. I think we ought to have an electric plant for the post, but I am not prepared to say whether electricity is better for the students.

Q. This suggestion of yours would string along the increase for several years before we arrived at any results.

A. Not over two years, if there is a change made. You make the appropriation and spend that appropriation, and in the meantime do the best you can with the new material that will come.

Q. In the matter of lights, have you made any efforts to introduce the Welsbach burner?

A. We have it here all through the buildings. There has been no complaint about it since I am here. Dr. Banister, the surgeon of the post, who is an expert in eye matters, has made no complaint about the light in his reports.

Q. In regard to the increase in the number of cadets suggested, is it probable that the maximum increase could be reached in about two years?

A. I think so.

Q. And the appropriation should come at once?

A. Yes; that is, the first year, and the money could be made available at once.

COMMITTEE ON FISCAL AFFAIRS, SUPPLIES, AND EXPENDITURES.

[Colonel MANN, *Chairman.*]

Q. Personally, I have no questions to ask, Colonel, but if you have anything to suggest we should be very glad to hear it.

A. There is one important matter. That is the subject of the pay of cadets and their expenses. Now, for some time after the war the cadets received \$500 a year and the pay for a ration, which was commuted at 30 cents a day. For some reason unknown to me that ration was taken away from the cadets and their pay was increased to \$540 a year; it was taken away from the military cadets, but the naval cadets still have it. The expenses of the cadets have increased, and with the utmost economy it is very difficult for them to get along. The only thing that they receive free is their actual tuition. They even pay for the policing of the barracks, for their lighting, and for everything, even for the little check book.

Q. Are these things charged up to the cadets; are they provided for by law or by regulation. The country understands that the cadets get their education here free and receive \$45 a month to pay for their clothing.

A. That is a wrong impression; they pay for every blessed thing; the only thing that they are furnished free is their tuition and their muskets.

Q. What I mean is whether this is required by law or fixed by regulation; if by regulation, the remedy, if one is necessary, can easily be obtained.

A. It is required by law, because all the provision that is made for supporting the cadets is simply their pay of \$540 a year; there is no provision made for policing the barracks nor for lighting the barracks, nor for laundry.

Q. All that may be and yet the law not require it. If the law is that the cadets were paid, the committee could not report an appropriation, because it would be a violation of the law.

A. But if the Secretary of War's regulation provided for that, to enforce that regulation Congress would have to appropriate the money.

Q. Will you please cite me the law that authorizes the deduction of \$45 a month which you mentioned a while ago from the pay of the cadets?

A. I will have to get that for you. As to the deprivation of the cadets of that ration—their expenses are so high that—take this class going on furlough—they have been here two years; 40 of those young fellows are in debt. They ought all to be out of debt, and ought to have money enough to take them back and give them a little recreation while away.

Q. What is the cost of their text-books?

A. The text-books of the first class cost about \$20; of the second

class, \$23; of the third class, \$24; and the text-books of the fourth class cost \$26—making an average of about \$23; that doesn't seem to be a very large sum when you consider it alone, but with all the other expenses it amounts to a good deal and makes a big hole in their pay in a year. There is their subscription to athletics; last year their subscription, voluntary, was \$375; their subscription to dialectic societies, where they hold lectures and make speeches and matters of that kind, is \$150; the Young Men's Christian Society for their room, there is an assessment of a couple of dollars, and the Lafayette Memorial Association—erecting a monument to Lafayette in Paris, a subscription of 25 cents apiece. There are also hops and entertainments amounting to \$7.50 or so during the year; also the expenses for policing the barracks.

Q. In 1892 it was \$5,832.23?

A. For policing barracks, yes, a little over \$2 to a cadet. Then there is the lighting at 75 cents a thousand. The gas fund now amounts to about \$2,300 or \$2,400. Everybody is charged alike. It cost to make gas—I know last December I figured it up; it was about 49 cents a thousand, but the charge of 75 cents has been made; in December there was a profit of \$28 from the gas plant. Out of the \$2,300 or \$2,400 they have to expend \$600 to build a tank to catch tar and \$100 for the foundation of this tank. Four dollars a month is retained for equipment fund, making \$196 when they graduate. That ought to be increased twice, because the large majority who graduate are in debt from \$200 to \$400.

Q. Is there any mileage allowance made to these cadets, who in the case of their second-year leave or at their graduation, to take them to their post or home?

A. Yes; at their graduation, but on their furlough they have to pay their own expenses.

Q. So that a cadet who lives in California has a burden cast upon him if he goes on a furlough?

A. Yes, sir.

Q. In the cases that you mentioned a while ago, where cadets were in debt to the treasurer at the end of their second year and were about to enter upon their furlough, is there any provision for advancing anything out of their future allowance of pay?

A. They are furnished with a suit of civilian clothes made of good material and by a good tailor, and that is paid for out of their extra pay; they are given their July pay and—

Q. So that if the cadets have not served out their time they are practically prevented from going home?

A. Yes, sir.

Q. What do they do during the two months?

A. They can come back here and go right on.

UNITED STATES MILITARY ACADEMY.
COMMITTEE ON MILITARY HYGIENE.

[Dr. WHITE, *Chairman.*]

Q. Colonel, have you any suggestions to make as to defective hygiene, in regard to either buildings or habits or customs in the Academy, in which we could help you? From what I have seen in previous reports it would seem as though the supply and drainage is satisfactory.

A. It will be when the present water system is completed; the additional appropriation is completed for 6,000 feet of pipe to run from the — into the receiving reservoir. We will then get a fine supply of water. That is all provided for. The drainage system of the post I think operates well. It is constantly examined and under scrutiny.

Q. In regard to the curriculum and the hours of study, and the time devoted to exercise—is that entirely satisfactory to you?

A. Yes, sir.

Q. Is the time devoted to the different forms of athletics and the supervision of such satisfactory to you?

A. Yes, sir.

Q. The most important thing I would ask you about is this question of the possible establishment of a professorship of military hygiene. I believe there is no difference of opinion between us as to the desirability of this, as it is recognized that a course of instruction to the first class in hygiene, such as could be covered by thirty lectures on the care of the individual soldier, in company or in regiment, and including all the questions that enter into the selecting of camp sites and sanitary care of them, that course would be desirable. What is your idea as to that?

A. I think it would be desirable, but I don't think the establishment of a chair would be necessary, because we have the necessary means without that. We have the post surgeon, and the establishment of a chair would entail considerable expense.

Q. How much expense, probably?

A. There would be an officer and professor; it would add one department to the Academy, and there would hardly be enough to occupy his time throughout the year.

Q. Could not the senior surgeon, with propriety, be made a professor?

A. Yes; I think so.

Q. That is the only difference in expense, or increase in expense, there would be—the difference in pay between the officer and lieutenant-colonel?

A. Yes; but as the course now stands I do not think such an addition would be practicable, to give twenty hours to it.

Q. But if the additional year proposed was added to the course, you would see, of course, how it could be done then?

A. Yes; but cadets get a good deal of that instruction from police duties and otherwise.

Q. They do not give a scientific basis, though?

A. No; but they know in a general way that it is a matter that must

be attended to, to promote health and efficiency among troops. In other camps they do all the policing themselves, but in the camp I propose this summer to have, the surgeon gives a series of lectures on first aid to the injured.

Q. My experience has taught me that when a man is responsible for impressing upon other men certain and specific acts, that unless he has included the reasons for those acts he is not impressive.

A. Undoubtedly the increase in course would give the necessary time for such instruction, and I think such instruction is absolutely necessary.

Q. (By Colonel MANN.) Speaking of hygiene, I understood the Colonel to say that filter beds were being made. Probably that will obviate what I observed. The first morning I was here I observed that the jug containing the water had a great amount of sediment in the bottom. It occurred to me that it was left there from other times, so I cleaned the pitcher, but the next morning I found it in the same condition. Has provision been made which when carried out will rid the water of that sediment?

A. These filter beds will correct all that. I believe that as far as we can be protected we will be protected by provisions already made.

The PRESIDENT. The board feel under great obligations to you, Colonel Mills, for the amount of information that they have received from you, for the concise manner in which you have stated it, and for your extreme patience answering their questions.

To the foregoing there is here added the following:

REPORT ON DISCIPLINE BY THE COMMANDANT OF CADETS, COLONEL HEIN.

DISCIPLINE.

The discipline of the corps of cadets was strictly enforced in accordance with the requirements of the Academic Regulations, United States Military Academy, and Standing Orders, United States Corps of Cadets (Blue Book), and showed marked improvement during the year, with the exception of a large number of breaches of the regulations forbidding hazing and one serious act of insubordination during the summer encampment. The latter resulted from the unwillingness of certain members of the first class (believed to have been acting under bad advice), who had been regularly detailed in turn according to roster to perform the duty of company commander, to comply with an order having partly for its object the more stringent enforcement of the regulations forbidding hazing, and to sign a report upon the completion of the duty (similarly as in case of inspectors of subdivisions) that they had performed the duty of company commander in compliance with said order.

It may be added that stricter repressive measures against hazing had become necessary, as a number of cases of brutal hazing had been perpetrated and those outrages had been believed to be on the increase. These measures consisted of a large augmentation of the guard and sentinels' posts in the company streets of the camp, on the flanks of the latter, over the sinks, etc., with strict orders to the sentinels to carefully observe and report every case of harassing or annoyance of new cadets; the placing of the tents of fourth-class men off limits for upper-class men, and those of the latter off limits for the former, and details of company commanders, who were given orders to "permit no annoyance of or interference with new cadets or fourth-class men, and to report all infractions of these orders," and to report in writing their performance of the duties of company commander in accordance with the orders given them.

The tactical officers were required to make frequent inspections of the camp, for the special purpose of breaking up the practice of hazing, and the instruction of new cadets, as before mentioned, was placed entirely in the hands of reliable instructors.

These measures resulted in the punishment of a large number of cadets and decrease of hazing, but did not succeed in stamping out the practice. In my opinion the only effectual way to suppress this evil is to make the punishment of those found guilty of it summary dismissal and to require all candidates for admission to the Academy to subscribe to an oath that they will abstain from the practice of any form of hazing while at the Academy.

The general improvement in discipline, with the above-mentioned exceptions, can be traced to the policy of intrusting a larger share of responsibility and command to the members of the first class while acting in the capacity of officers and assistant instructors in the performance of purely military duties; also to the wise policy inaugurated of combining stricter discipline with greatly increased privileges and to the revival of the wise regulation promulgated by General Thayer, who for so many years was the renowned Superintendent of the Military Academy and surnamed its father, which required all excuses of cadets for delinquencies to be in writing, and to be made in no other manner, which regulation constantly teaches cadets to be careful and accurate in their statements, subserves a juster administration, and is more in accordance with the customs and requirements of the service in the matter of explanations.

The important modifications of paragraphs 339 and 344, Regulations United States Military Academy, which make the action of the commandant of cadets final on the explanations of cadets for offenses, and which fix a definite period within which appeals for reconsideration of reports must be made to the Superintendent, have greatly strengthened the hands of the commandant—the officer immediately responsible for the discipline of the corps of cadets—in the enforcement of discipline.

The requirement of the cadets of the first class of each company to perform in turn the duties of company commander, the tours of duty beginning at retreat and ending at retreat on the following day, and to act as inspectors of subdivisions and commandants of tables in turn, has also had a salutary effect upon discipline, while serving at the same time to train the members of the first class in the exercise of command and responsibilities.

The unenlightened, generally obsolete, and vicious practice of hazing has not been suppressed, but it is believed to be on the wane in consequence of the more vigorous methods which have been taken to eradicate it, and it is hoped and believed that the growing opposition of cadets themselves to this unmanly and unsoldierly practice will finally result in its complete extinction.

MILITARY EFFICIENCY.

The project recommended by the commandant of cadets on November 30, 1898, for giving members of the first class credit by means of marks (similarly as in case of academic work) for their attention to duty and for their efficiency in the exercise of command and responsibilities devolving upon them as officer of the day and guard, inspector of subdivision, for efficiency as officer and assistant instructor at drills and tactical and minor tactical exercises, for horsemanship, target practice, and for soldierly deportment and discipline, went into operation tentatively, with the approval of the Superintendent, last December. After being subjected to a thorough trial for some months it was submitted to the Academic Board for its consideration, and upon their recommendation was adopted by the War Department on May 22, and as now authorized by the Academic Regulations gives a value of 150: Officer of the day, 15; officer of the guard, 10; inspector of subdivision, 10; commandant of table, 5; drill or exercise (officer or instructor), 30; minor or tactical exercises (officer or instructor), 30; horsemanship, 20; target practice, 10, and for soldierly deportment and discipline, 20. As adopted, the scheme went into operation on June 1.

The members of the first class have been detailed in turn, according to roster, as officer of the day and guard (averaging once in fifty-four days), as commandant of table, and inspector of subdivision (weekly tours), and were marked for their performance of these duties. At all drills and tactical and minor tactical exercises and practice marches they have performed the duties of captain and lieutenant in turn, under the superintendence of the officers of the department of tactics, and a record of marks was kept upon the efficiency shown. During the summer encampment the first-class men of each company have in turn exercised command of the company, the tour of duty beginning at retreat and ending at retreat on the following day, making its inspection, commanding it at parade, and in marching to and from the mess hall, superintending the police of its camp, and being held responsible for the preservation of good order, etc., in the company during his tour (averaging once in about fourteen days). Company commanders were also required to use their utmost endeavor to prevent all cases of hazing during their tour.

Marks on soldierly deportment and discipline, based upon the character and degree of soldierly qualities of each cadet of the first class, as determined by the personal estimate of the commandant of cadets and each of his assistants, and upon delinquencies affecting soldierly conduct, have been recorded. These marks were submitted periodically to the superintendent.

Thus it will be seen that each member of the first class has been marked and given credit for his efficiency in the performance of his military duties and for his display of those qualities that are essential parts of an officer's value.

I have pleasure in reporting that there has been a very marked improvement in the zeal and intelligence displayed by the members of the first class when acting as officers and in all positions of responsibility since the introduction of this system.

EXTRACT FROM REPORT OF A FORMER BOARD.

A valuable report made by a subcommittee of the Board of Visitors for 1891, of which Senator Pugh was the chairman, and which embraces some very important statements of fact as well as intelligent opinions, is herewith reprinted as being in line with the foregoing, and with the belief that it will materially aid in arriving at proper legislation.

ROOMS OF THE BOARD OF VISITORS,
West Point, N. Y., June 8, 1891.

To the Board of Visitors:

The committee on appointments and examinations have had these subjects under consideration, and find that the ability of the Academy to carry out its objects and insure its usefulness is far greater than the number of cadets now allowed by law to enter the Academy. It is a great waste of the power and capacity now employed in the institution to allow it to be expended upon the present number of cadets. It is the opinion of the able and efficient superintendent and faculty of the Academy that the present number of cadets can be increased to 500 without any considerable outlay in the expenditure of money, and without any considerable enlargement of the machinery and means of accommodation now belonging to the Academy. The committee are therefore unanimous in recommending that the number of cadets be at once increased to 500.

The most difficult problem for solution is where the power of selection and appointment shall reside and how it shall be exercised. The original and primary object of the creation of the institution was to qualify officers to command a standing army of the United States. History has demonstrated the eminent success and usefulness of the Academy, and the wisdom and patriotism that prompted its establishment and continued and enlarged its existence have been fully vindicated by experience.

On account of the exclusive military character and objects of the Academy the power of appointment was vested in the beginning in the President; but that official

soon learned by trial that it was impracticable and inexpedient for him to exercise the power efficiently, and for this reason he delegated the power of selection and nomination to the members of the lower house of Congress. It is manifest that the intention and policy of the Government have been and are now that the beneficiaries of the institution shall come from the people in each State and Territory without discrimination or partiality. And no doubt the purpose of the President in conferring upon members of the House the power of selection and nomination was to popularize the institution by extending and distributing its benefits generally and equally among the people of the States and Territories.

It is a fact that the candidates selected by the members of the House have not in very many cases been successful in standing the examinations and passing the tests of qualifications for admission into the Academy. As a rule it has been found that the maximum number of cadets allowed by law has not been kept up by at least one-third, thereby depriving the country of the benefits of its expenditure for one-third more cadets, and the cadets themselves of the invaluable instruction and training provided for them and wasted on account of their absence.

For reasons satisfactory to the members of the House it has been decided by them to improve the mode of selection and secure, if practicable, a better class of their constituents for nomination to the President, and the change made by the members is to delegate their delegated authority to a board of examiners, to call before them the several applicants and ascertain their fitness to stand the examination of the Academic Board at West Point and pass into the Academy. The competitive system thus established has proven to be a great improvement upon the old mode of direct appointment. It, however, continues to be a fact that the number of cadets is never up to the maximum by a large proportion, and this deficiency is an evil that should be corrected. Whether the trouble is in the power of selection or in the character of the examination there is much difference of opinion. The power of selection ought to be kept as near to the people of the several States as practicable, and so exercised as to secure an equal and fair distribution of the inestimable benefits of the institution among all the people.

In relation to the examination of the candidates for cadetships, the committee find that the practice of requiring the candidates to attend an examination at West Point to determine their physical and educational qualifications for admission into the Academy works great hardship to those who are found deficient. The plain remedy for this evil is the formulation of some plan for the examination in each State on the same day of all the candidates who may be designated by Members of the House in their several districts as now authorized, and should the number of cadets be increased as suggested, then the selection of those to be examined to be made by the Members of the House and by the Senators from each State and the President of the United States, or otherwise, as Congress may determine. It would be an easy matter to discover the physical defects that disqualify, and an army surgeon might be detailed to make the examination in each State for that purpose at the same time and place appointed for the educational examination.

It has been suggested by Colonel Wilson, the superintendent, that the questions now required to be answered by the Academic Board at West Point could be printed and sent by an army officer to each State some two months before the time for entering the Academy, who would call each candidate from the several districts on the same day at the capital of the State, or other convenient point, where the written questions would be delivered to each candidate, and without conference with each other or other person each candidate, without separating from the army officer, would be required to write out his answers to each question, and the answers delivered to the army officer, who would seal them up and forward them to the Academic Board at West Point. These answers would be examined and the right of the candidates passed upon by the board, and if found qualified the candidate to be notified and his appointment made at once without any further examination on his arrival at West

Point. If no one is found qualified in any district from the list of those who have answered, another examination shall be ordered, and so on until the maximum number is appointed.

Respectfully submitted.

JAMES L. PUGH.
FRANK O'BRIEN.
JOSEPH A. SCRANTON.

IEWS OF THE ACADEMIC BOARD.

In order to obtain the views of the Academic Board on the question of increasing the efficiency of the Academy, the secretary of the Board of Visitors was instructed to request that body to prepare a paper on this subject:

ROOMS OF THE BOARD OF VISITORS,
West Point, N. Y., June 6, 1891.

SIR: The Board of Visitors have instructed me to inform you that they would be pleased to have from the Academic Board a paper expressing the views of that board, either individually or collectively, in relation to the methods of appointment and examination of cadets; whether any changes can be made in these methods which, in their judgment, would tend to increase the number of candidates and thereby tend to increase the number of graduates; and, also, as to the advisability at this time of increasing the maximum strength of the corps to an aggregate equal to the number of Senators, Representatives, and Delegates in Congress, and ten appointments by the President of the United States. In connection with the question of increasing the present number of cadets, the board would be pleased to have the opinion of the academic authorities as to whether the proposed increase would involve any additions to present facilities of the Academy for the imparting of instruction, and if so, what the character and extent of such additions would be.

Very respectfully, your obedient servant,

JOHN M. CARSON, *Secretary.*

Col. JOHN M. WILSON,

Superintendent United States Military Academy.

To the foregoing letter the following reply was received by the secretary of the board from Colonel Wilson:

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., June 24, 1891.

MY DEAR SIR: I have the honor to acknowledge receipt of the letter of the 6th instant from the Board of Visitors, requesting the views of the Academic Board of the United States Military Academy relative to the existing methods of appointments and examinations of candidates, and asking whether any changes could be suggested which, in the judgment of the board, would tend to increase the number of graduates.

This letter was laid by me before the Academic Board at its meeting on the 9th instant, and it received most careful and thoughtful consideration.

Taking up the various subjects mentioned, in their regular order, the board requests me to state its views, as follows:

(1) The Academic Board feels satisfied that with the Academy as now constituted the number of cadets can be increased, but such increase should be very gradual. For the present the board can only recommend that the privilege of nominating ten cadets each year, instead of ten during four years, shall be restored to the President of the United States. This power was held by the President until its revocation by the act of Congress June 11, 1878.

(2) The board is in favor of some method of examining candidates at various places throughout the United States, as outlined in general terms by the superintendent of the United States Military Academy, but believes that it will require time and consideration to develop the best scheme in detail.

(3) The board respectfully states that at present it has no suggestions to make as to the method of appointment of candidates for admission.

In submitting the foregoing views, in reply to the communication from the Board of Visitors, I have been requested to state that a minority of the Academic Board is not in favor of any increase of the corps of cadets at this time.

Having expressed in the foregoing the views of the board, I shall take advantage of your request for individual opinions and present my own, as follows:

(1) I feel assured that the entrance examination can be conducted without difficulty previous to the arrival of the young gentlemen at West Point, and I would suggest that candidates should be required to report for physical examination to the nearest medical officer of the Army immediately after receiving their letters of appointment, and should they be pronounced physically disqualified for military duty, their appointments can at once be revoked, and they would be spared further expense and mortification; should they *be pronounced qualified they should be admitted without further physical examination.*

(2) Early in April of each year, upon some stated day, I would require all candidates throughout the United States who have letters of appointment and who have been pronounced physically qualified to appear for mental examination at certain geographical centers throughout the United States, such as Portland, Boston, New York, Philadelphia, Pittsburg, Washington, Richmond, Charleston, Atlanta, Mobile, New Orleans, San Antonio, Memphis, Louisville, St. Louis, St. Paul, Chicago, Omaha, Denver, Cheyenne, Helena, Salt Lake City, San Francisco, Portland, Seattle, and such other prominent places as the Secretary of War shall indicate.

These examinations should be held under the direction of the Academic Board of the United States Military Academy, and, if necessary, members of the board could be detailed to be present at the more important points.

The questions should be prepared here by the Academic Board, and the examination conducted under the immediate supervision of army officers acting simply as monitors. Each candidate should write his name upon a slip of paper and should receive a number corresponding thereto; upon his examination papers his number only should appear. The names with numbers would at once be sent under seal to the War Department, while the examination papers, with numbers only, should be sent direct to the Superintendent of the Military Academy for the action of the Academic Board.

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

The young gentlemen can then be notified, their original signatures sent to the Military Academy for comparison when they take the oath of allegiance, and the candidates will be prepared to go on duty upon their arrival at West Point.

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

(3) I am in favor of a moderate increase of the number of cadets at the Academy, believing that our plant is sufficient to turn out a larger number of graduates each year.

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

At present the maximum number of cadets authorized is 347; under the new appointment it will be 372; with the privilege accorded the President which existed prior to 1878, the maximum number will be 402.

The present plant is amply sufficient to care for 402 cadets, and all that will be required will be the detail of a few more officers as instructors and the erection of additional quarters for their accommodation.

Should the demands of the country still render a further increase necessary, I would suggest in the future, after the first increase has been thoroughly tested, that the privilege now accorded members of the House of Representatives of nominating candidates from Congressional districts be extended to the United States Senate,

by giving each State two cadets at large, to be nominated by the Senators to the Secretary of War.

This increase would necessitate a possible enlargement of the cadet barracks and chapel, an increase in the number of officers as instructors and quarters for their accommodation, and enlargement of the stables and more horses, and an increase in the lighting facilities of the post.

The new academic building, the cadet mess hall, with some minor changes, and the cadet hospital, would, in my opinion, need no enlargement so long as the maximum number of cadets allowed by law does not exceed 500.

Very respectfully, your obedient servant,

JOHN M. WILSON,
Colonel of Engineers, Superintendent.

Maj. JOHN M. CARSON,

*Secretary Board of Visitors to the United States Military Academy,
West Point, N. Y.*

The board does not agree with Colonel Wilson that an increase in the corps of cadets, fixing the number at 469, would require enlargement of the cadet barracks. The actual presence of 469 cadets would perhaps necessitate an extension, but it is not probable that, even with the adoption of the plan recommended for appointment and examination, the actual strength of the corps would exceed 400 at any one time. The total number of rooms in the cadet barracks is 208, which will furnish ample accommodation for 416 cadets. For the brief period that the strength of the corps might exceed that number three cadets could be assigned to some of the rooms without sacrifice of personal convenience or risk to health.

IEWS OF COL. SYLVANUS THAYER.

That the present methods of appointing and examining candidates for admission to the Academy has for many years been regarded as inefficient and faulty is shown by a paper prepared by Col. Sylvanus Thayer twenty-six years ago. Colonel Thayer was for many years Superintendent of the Military Academy. His administration was so marked by conspicuous ability as to gain for him the title of "Father of the Military Academy," and to secure a monument on the parade ground in the form of a life-size statue, erected by the graduates of the institution. The last visit made to the Military Academy by Gen. U. S. Grant was to attend the unveiling of the statue of Colonel Thayer. The board is indebted to Adjt. Gen. John C. Kelton for a copy of this paper of Colonel Thayer. General Kelton has given this general question much observation and study. No officer in the Army has had better opportunities for intelligent examination of the question, and no military officer has exhibited greater zeal in all that relates to the intellectual progress of the Army, the advancement of its morale, and promotion of its personal comfort than General Kelton. In a letter to the secretary of the Board of Visitors, directing attention to the paper of Colonel Thayer, Adjutant-General Kelton says:

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE,
Washington, June 9, 1891.

DEAR MAJOR CARSON: My observation and study of West Point have long ago convinced me that the method of appointing cadets is a failure.

The plan of Colonel Thayer, the father of the Military Academy, proposed in 1865, modified to suit present conditions, would probably be a success in securing the best representation for each Congressional district, and be the means of greatly increasing the number who could be graduated.

If, in addition to this method of securing the best candidates, the course of study at West Point should be divided at the end of the second year, giving all those members of a class who show marked proficiency in mathematical studies, and who have expectation for the engineers, ordnance, and artillery, the present four years' course of instruction, and those who in the first two develop no special aptitude for mathematics a different course of study, but one more helpful in preparing them for com-

missions in the infantry and cavalry, I believe many more candidates could be graduated.

I am induced to send Colonel Thayer's project and to make the foregoing remarks upon seeing newspaper reference to the efforts the Board of Visitors are making this year to improve the quality of the candidates and increase the number to be graduated.

After making such use of Colonel Thayer's "Propositions and suggestions for the improvement of the United States Military Academy" as you may deem proper, please restore the paper to the files of the Department.

Very truly, yours,

J. C. KELTON, *Adjutant-General.*

Maj. JOHN M. CARSON.

Colonel Thayer's paper is entitled "Propositions and Suggestions for the Improvement of the United States Military Academy." Some of the recommendations had more force and application twenty-five years ago than at the present time. While the board does not approve all the recommendations of Colonel Thayer, it contains so much that is of value at this time and in this connection that his paper is given entire. In this paper Colonel Thayer discusses the curriculum of the Academy, and advocates certain changes which will doubtless startle many of the older graduates. This portion of the paper properly belongs to the chapter of this report devoted to discipline and instruction. It is deemed best not to divide Colonel Thayer's paper, and it is therefore inserted entire in this place. The paper has laid in the files of the War Department for twenty-five years, its existence known to comparatively few persons. It is now printed for the first time. The paper is as follows:

PROPOSITIONS AND SUGGESTIONS FOR THE IMPROVEMENT OF THE UNITED STATES MILITARY ACADEMY.

First. The corps of cadets to be increased so that it shall consist of 400 members for the present, to be further increased whenever accommodations for a greater number shall be provided.

Second. The present mode of appointing cadets, viz, on nomination by members of Congress, be done away with.

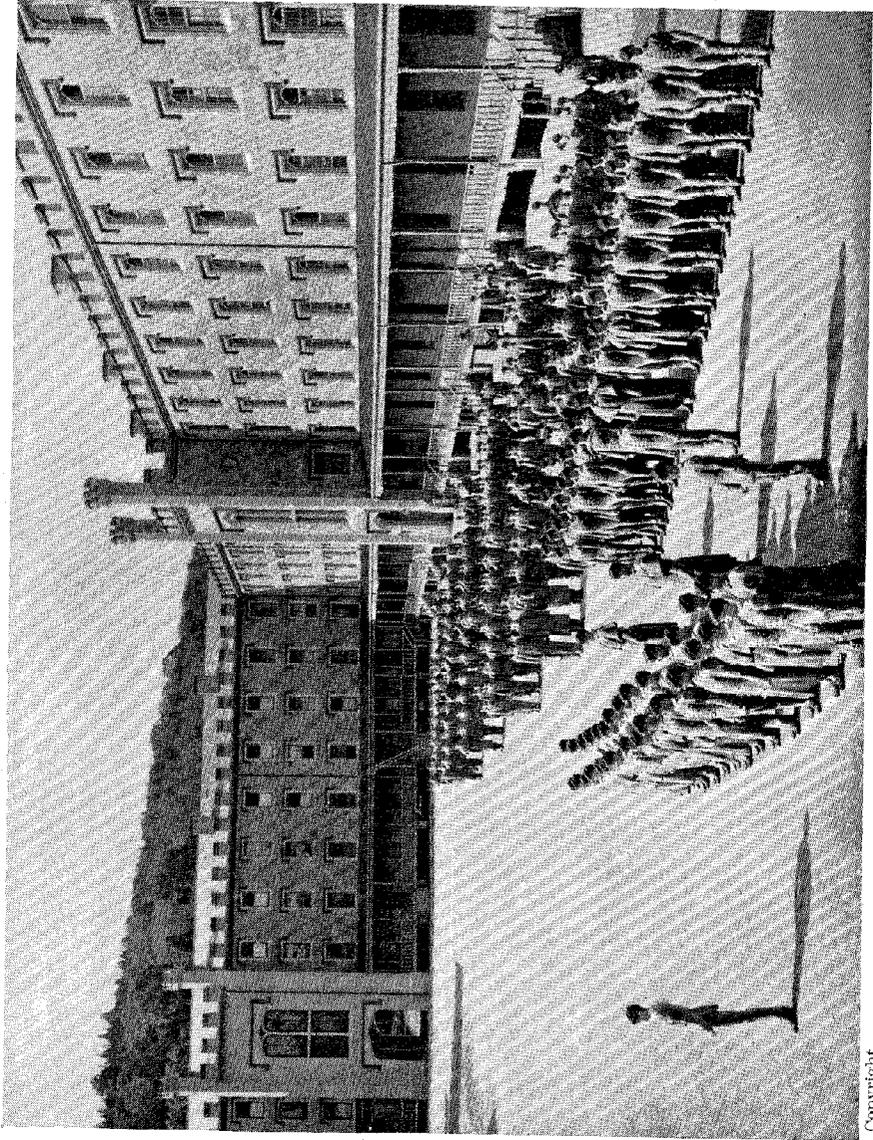
Third. The admission of cadets to be made dependent on the results of an open competitive examination, conducted with perfect fairness to all concerned.

Fourth. No candidate to compete who, at the time of joining the Academy, shall be under 17 or over 20 years of age, excepting candidates who shall have served not less than six months in the Army, who may be examined if not over 24; and no candidate shall be permitted to compete who does not produce satisfactory testimonials in regard to his moral habits and character, nor shall the name of any candidate be placed on the roll of those found qualified for admission unless, besides the requisite physical qualifications, he shall have passed a satisfactory examination in each and all of the subjects specified in the next following (fifth) proposition.

Fifth. The subjects of the competitive examination shall be:

- (1) Reading distinctly and understandingly.
- (2) Writing legibly and fairly.
- (3) Spelling correctly.
- (4) English grammar, so as to analyze and construe any ordinary English sentence.
- (5) Descriptive geography.
- (6) Arithmetic—ground rules, fractions (vulgar and decimal), ratios and proportions.
- (7) Algebra—ground rules, fractions, simple equations, discussion and solution of quadratic equations.
- (8) Geometry—theorems and problems of plane geometry.

Sixth. The board for the examination of the candidates to consist of three members, two of whom to be selected from military officers, graduates of the Academy; the third member to be a civilian, a professor in some college, or any other person



Copyright.

CADETS MARCHING TO DINNER.

Stoddard, Glens Falls, N. Y.

of well-known competency, who is a resident of the State in which the examination is held.

It shall be the duty of the board to examine the candidates belonging to each State, separately, at the time or times and at the place or places fixed therefor, in each and all the branches required for admission, and thereupon to make out a special merit roll for each branch, and from the special merit rolls a general merit roll, from the head of which will be taken in numerical order the number of cadet appointments to which the State may be entitled.

Seventh. Paragraph 18 of the Academy Regulations, edition of 1857, to be stricken out, and article 11 to be modified so as to conform to the foregoing propositions.

Eighth. Paragraph 23 to be modified so as to read as follows: "French grammar, reading French with a correct pronunciation, translating French into English readily and correctly."

Ninth. The Spanish language to be stricken from the regular course of studies and taught only as a voluntary study to such cadets as, in the opinion of the Academic Board, are capable from previous acquirements of pursuing the study without detriment to their progress in the obligatory studies.

Tenth. The subjects enumerated in paragraph 25 to be greatly abridged, and only so much of chemistry and its applications taught as are necessary or essentially useful to the military engineer or artillery officer.

Eleventh. Some of the branches named in paragraph 32 to be eliminated.

Twelfth. The present mode of examining cadets for advancement from class to class and for commissions in the Army, and also the present mode of forming the merit rolls, to be submitted to the board of improvement for revision.

Thirteenth. A military officer, selected from the graduates of the Academy, and known to possess a thorough knowledge of all the sciences and subjects taught at the Academy, to be appointed inspector of studies, whose duty it shall be, under the direction of the Superintendent, to exercise a general supervision and control over the studies and instruction. He will give daily attendance at the recitations and lectures, notice the manner in which the professors and instructors discharge their duties, respectively, and see that programmes and methods of instruction prescribed by authority are strictly and uniformly conformed to. In consultation with the professors and instructors, severally, he will arrange the studies and instruction with a view to the best adaptation to the capacity of the different sections, and will decide in cases of transfer from section to section. He will receive from the professors and instructors the weekly class reports, enter the merit marks in the register kept for that purpose, and make a monthly report to the Superintendent on the progress of the studies, accompanied by a consolidation of the weekly class reports. He will also make an annual report, to be submitted to the board of improvement.

Fourteenth. A board of improvement to be appointed, composed of the Superintendent, inspector of studies, and of not less than three or more than five other members, a majority of whom to be military officers, graduates of the Academy, but not connected therewith. The principal duty of the board shall be to revise the programmes and methods of instruction, to point out defects therein, and to propose the proper remedies and ameliorations. The board will be present at all general examinations, and immediately after each annual examination will make a report to the Secretary of War on the progress of the studies and on the condition and management of the institution, so far as relates to the studies and instruction, and recommend such changes therein as observation and experience may have shown to be expedient.

Fifteenth. The term of residence at the Academy during war to be two years.

Sixteenth. The term of residence at the Academy during peace to be four years.

Seventeenth. The board of improvement to be assembled in special session at West Point as soon as practicable, with instruction to take under consideration the entire system of studies and instruction at the Academy, and, in consultation with the

professors and instructors, to prepare programmes and tables for the distribution of the studies and employment of time adapted to the four years' term, and also for the proposed two years' term, the subjects of study and instruction in the programmes to be so detailed and defined that nothing shall be left to the discretion of the professors and instructors as to the matter to be taught or the amount of instruction to be given.

Eighteenth. The Superintendent, the inspector of studies, the commandant of cadets, with three of the senior professors, all of whom to be graduates of the Academy, shall constitute a board which shall be called the board of administration. It shall be the duty of the board to examine all text-books proposed by the head of each department of instruction before submitting them to the board of improvement for adoption by the Secretary of War; to recommend to the Secretary of War for purchase all such books, maps, models, and apparatus as may be required for the purposes of instruction, also such works as may be deemed most suitable for the yearly increase of the library; to recommend to the Secretary of War such changes in the regulations as experience may suggest, and to perform all other functions hitherto assigned to the Academic Board except those pertaining to the examination and graduation of the cadets.

Nineteenth. A board of discipline to be appointed, composed of the inspector of studies, the commandant of cadets, and three other members selected by the Secretary of War from military officers on duty at the Academy.

It shall be the duty of the board to inquire into and investigate the facts in all cases referred to it touching breaches of the regulations and other offenses reported to have been committed by a cadet or cadets, or by a person or persons unknown, and to report its proceedings in each case to the Superintendent, with its opinion, when required, as to the guilt or innocence of the party accused or implicated, and also as to the nature and degree of the punishment, if any, proper to be inflicted.

Twentieth. Paragraph 110 to be modified so that courts-martial for the trial of cadets may be dispensed with in all ordinary cases, and that punishment may be inflicted in the following manner, viz: Those of the second class, specified in paragraph 109, by the Superintendent, on recommendation of the board of discipline; those of the third class by the Secretary of War, on recommendation either of the board of discipline or Academic Board, approved by the Superintendent.

Twenty-first. The second and third paragraphs of the Academy Regulations, edition 1857, to be replaced by the corresponding paragraphs of the regulations in force from 1817 to 1839.

Remarks referring to corresponding numbers of the foregoing propositions:

First. In order that all the vacancies in the Regular Army on the peace establishment, not filled by promotion from the ranks, may be filled by graduates from the Military Academy, the strength of the corps of cadets must be largely increased. Five hundred or 600 would probably be necessary to that end, but as the existing buildings at West Point are not calculated to accommodate more than 400, that number is proposed as the proper limit for the present. But as the object of the Academy, in the minds of its founders, was not only "to supply vacancies in the Regular Army, but also to diffuse military instruction throughout the Union," the number of cadets should, as soon as practicable, be so increased that the Academy could turn out annually a large surplus of graduates over and above the number necessary to fill the vacancies in the Army. These supernumeraries should be regarded as retired officers without pay, waiting to be called into active service in time of war; meanwhile, as civil engineers, professors in colleges, teachers of scientific branches, and also—at least many of them—as militia officers, "diffusing military instruction throughout the Union," they would be rendering service to the country more than equivalent to the cost of their education at the Academy.

Assuming 400 to be the number of cadets at the Academy, and that the President may think proper to reserve a certain number of places, say twenty, to be given to

the sons of soldiers and officers of the Army and Navy, who, having no settled habit, can not be classed as residents of any particular State or Territory, the remainder, say 380, would be so distributed among the States and Territories that each would always have at the Academy a pro rata representation, based upon population or Congressional representation.

Second. The present mode of appointment was adopted at a time when the existence of the Academy was believed to be in jeopardy and to be saved only by conferring on members of Congress a coveted patronage; but now, when the Academy seems firmly established in public favor, it may, it is hoped, be safely left to stand on its own merits, independently of all questionable helps. Whether the appointment of cadets by members of Congress is not contrary to the spirit, if not to the letter, of the Constitution, and also whether it is not liable to abuse by unscrupulous members, are questions that may be worthy of serious consideration in proper time and place, but here I need only call attention to the undeniable fact that it fails to procure for the Academy proper subjects to be educated at the public expense.

The records of the Academy show that the number of cadets admitted, compared with the number graduated, stand as five to two—that is to say, three-fifths of the cadets admitted are found incapable of going through, being removed, some during the first six months, others only after a residence varying from one year to four or five years. Of the two-fifths who are graduated, many succeed only by dint of intense application and the great pains bestowed upon them by their teachers. Men of this stamp, although they make meritorious officers in subordinate positions, are rarely successful in independent and responsible commands. The remedy for the evil is, evidently, only to be found in some means by which the mental capacity of the candidate may be fairly tested and measured and his ability to master the course of studies at the Academy may be judged of with some degree of accuracy; and the only means to that end yet tried and found successful in other countries is a high standard of attainment, joined to open competitive examinations for admission, means that could not fail to procure for the Academy youths who are the élite of the nation. Objections, if any, to admission through competitive examinations can come only from the very few who profit by the patronage derived from the present mode of appointment; but the people, minus these few, can only desire that their armies may be supplied with the best officers the nation can furnish—officers who will know how to win victories.

Third. Open competition for entrance into her military schools was adopted by the French Republic seventy years ago, and has been maintained to the present day, and all the other European governments, including that of Great Britain, have been compelled, one after another, to follow her example. It is remarkable, and seems little creditable, that the great model Republic, of which we are justly so proud, should be the last to give up patronage, the policy of aristocratical and monarchical governments, and also the last to adopt the republican principle of open competition, which seeks out and rewards the most worthy, wherever to be found, without distinction of class or condition, race or color.

Fourth and fifth. The standard of attainment proposed is not by any means as high as desirable or, indeed, as is necessary as a test of the candidate's capacity and of his ability to master the course of studies at the Academy. It is lower than at Woolwich, far lower than that of St. Cyr, Wiener-Neustadt, or any similar institution in other countries, but it is hoped that it may be raised gradually, *pari passu*, with the improvement of the common schools.

In view of the importance of French and drawing to progress after admission, and of Latin to the acquisition of French, I would recommend that the candidate, at his option, be admitted to an examination in all or either of these branches, and that some weight be given to them in forming the general merit roll of those who are found qualified for admission.

Sixth. It may be expedient, perhaps, to constitute a separate board for the examination of candidates belonging to States on the Pacific.

The place or places designated for the examinations should be central in regard to population, or as nearly so as practicable; one place only in the smaller States, two or more in the larger; for instance, in New Jersey, Princeton or Brunswick; in the State of New York, New York City, Albany or Schenectady, Geneva or Rochester; in Massachusetts, Boston and Springfield or Amherst.

The regulations requiring the candidate to repair to West Point to be examined for admission, he paying his own expenses to that place, and if rejected back to his home again, is not only unequal and often oppressive in its operation, but also in effect excludes many of the poorer class from the benefits of an institution that should be equally open to all.

Seventh. An open competitive examination and a high standard of attainment for admission would accomplish the object in view better than the probation exacted by paragraph 18; besides, the cadet should consider himself on probation during the whole period of his residence at the Academy, and liable to be removed at any time for want of capacity, or for want of application, as well as for deficiency in moral or military conduct.

Eighth. All books not in English the reading or study of which can be useful to an officer of the U. S. Army are either by French authors or are translated into French; hence French is justly regarded as the "key of military science;" but no more time should be bestowed upon it at West Point than would enable the pupil to read French with facility without the help of a dictionary. The additional time that would be necessary to speak French or to translate English into French (which no officer of our Army would probably ever be called upon to do in the line of his profession) would be more usefully applied to other subjects a knowledge of which is indispensable to the military officer.

Ninth. The reasons above given for teaching French as an obligatory study do not apply in the least to Spanish. The only pretext there can be for teaching it at West Point is to enable the pupil to carry on a conversation in Spanish, in the very doubtful case of his ever having occasion to speak it in the line of his profession before he forgets it from want of practice. But here it is pertinent to inquire whether any class, or any individual not previously grounded in the language, ever made at West Point such proficiency as would enable them, or him, to carry on a conversation in Spanish. But whether that degree of proficiency has been attained or not, I am clearly of opinion that Spanish should be eliminated, giving place to more important subjects which its introduction crowded out or unduly contracted.

Tenth. "Bleaching," "dyeing," "tanning," "gilding," "distilling," and much other extraneous matter may well be excluded from the programme. The subjects of this course should be taught mostly by lectures, and limited as proposed need occupy less time than is now allotted to them.

Eleventh. The numerous subjects comprised in paragraph 32 occupy more time than is due to their relative importance and yet not enough for teaching them as they should be taught to be useful. "English grammar and descriptive geography" are among the proposed requisites for admission. "Physical geography," if retained, might be transferred to the department of natural philosophy or taught in connection with geology. "Political geography" and the "history of literature" may well be excluded, and also civil history, except a few lectures to teach how history should be studied, the time thereby saved to be applied partly, if deemed necessary, to the more important subjects of the course, viz, moral philosophy and law, constitutional and national, and the remainder distributed in due proportions between military engineering and French, both of which have been encroached upon by the undue expansion of the department of ethics. The branches proposed to be eliminated or restricted crept in at a time when the notion seemed widely prevalent that the object of the Academy was or should be to educate young men for the bar and the pulpit rather than for the army.

Twelfth. The manner of conducting the annual examination and also that of forming the merit roll, as prescribed in paragraphs 62, 65, and 67 of the regulations, edi-

tion of 1857, are believed to be susceptible of material improvement. The examining committee should be so composed that every member of each committee shall be capable, by a thorough and familiar knowledge of the subjects, of forming an intelligent judgment of the performance of the examinee, and the number of committees should be such that by their simultaneous action the annual examination may be confined within the narrowest limits of time compatible with a thorough and searching examination of the pupils. These desiderata may, it is believed, be secured by means of seven committees, composed as follows: (1) For mathematics, the professor, the principal assistant professor, the instructor of the section under examination, together with not less than two other members not connected with the Academy, selected from experienced and successful teachers of mathematics. (2) For natural philosophy and for chemistry, mineralogy, and geology, a single committee, consisting of the two professors and their principal assistants and the instructor of the section under examination, together with not less than two members of known competency not connected with the Academy. (3) For engineering, the professor, the principal assistant professor, the instructor of the section under examination, together with not less than two officers of the Corps of Engineers not under the grade of captain and not connected with the Academy. (4) For artillery, cavalry, and infantry tactics, and for ordnance and gunnery, a single committee, consisting of the instructors of those branches, together with at least three officers, graduates of the Academy, not under the grade of a field officer, selected from the artillery, cavalry, and infantry, to represent those arms, respectively. (5, 6, and 7) For ethics, French, and drawing, the committee for each to consist of the professor, the principal assistant professor, the instructor of the section under examination, together with two or three members appointed by the Superintendent from members of the Academic Board not on other committees, or from the Board of Visitors, or from acting assistant professors or other officers on duty at the Academy.

The inspector of studies and the Superintendent to be ex officio members of any of the committees, and when present to preside therein.

The duration of the annual examination will necessarily be determined by the time it takes to examine the pupils in mathematics, that time being more than is required by any other committee to finish its task. If, owing to the increase of the corps of cadets or any other cause, the examination in mathematics can not be brought within the limits of 18 working days, it may be expedient to constitute two committees for that subject.

The numbers representing the value or weight given to the different subjects are not apportioned according to their relative importance or to the time allotted to them, respectively, nor apparently according to any just principle. In forming the general merit rolls of the three lower classes (second, third, and fourth) too much weight is allowed to conduct. If allowed any weight at all it should be merely enough to turn the scale when merit in scholarship is equally balanced. To give it more weight is simply to weaken the incentives to study, which was the sole object of the merit-roll system. The arm of discipline, if skillfully wielded, is strong enough of itself, needing not to be aided in a way that is injurious to progress.

Thirteenth. The office of inspector of studies in the Royal Military Academy at Woolwich was created in 1772, and still exists. It is filled by a lieutenant-colonel of engineers or artillery, whose salary is \$1,500, in addition to his regimental pay and allowances, amounting in the whole to \$3,500. The officer performing the same functions in the military schools on the Continent is styled (more appropriately) director of studies.

From the year 1817, when the present system of studies and instructions at the Academy was established, to 1834 or later, the Superintendent was charged with the duty of directing the studies, a duty he discharged to the best of his ability, as far as it was consistent with his other indispensable duties, but the duty is such as to require for its proper performance the entire and continuous attention of an officer. By a change in the regulations first promulgated in 1839 it ceased to be the duty of

the Superintendent to direct the studies, and ever since each professor has been the supreme director of studies in his own department. The evils experienced from there being no officer at the Academy charged with the general control of the studies are such as to demand a speedy remedy.

The inspector of studies should be second in command, and supply the place of the Superintendent when absent.

The importance and utility of a properly constituted body to point out defects and suggest ameliorations in the system of studies and instruction at the Academy seem too obvious to need demonstration or argument. Such a body, styled (counsel de perfectionment) board of improvement, has been found necessary to the proper working of the machinery of instruction in all the best European military schools. Some of the evils experienced at West Point for the want of such a board will be noticed in connection with proposition 17.

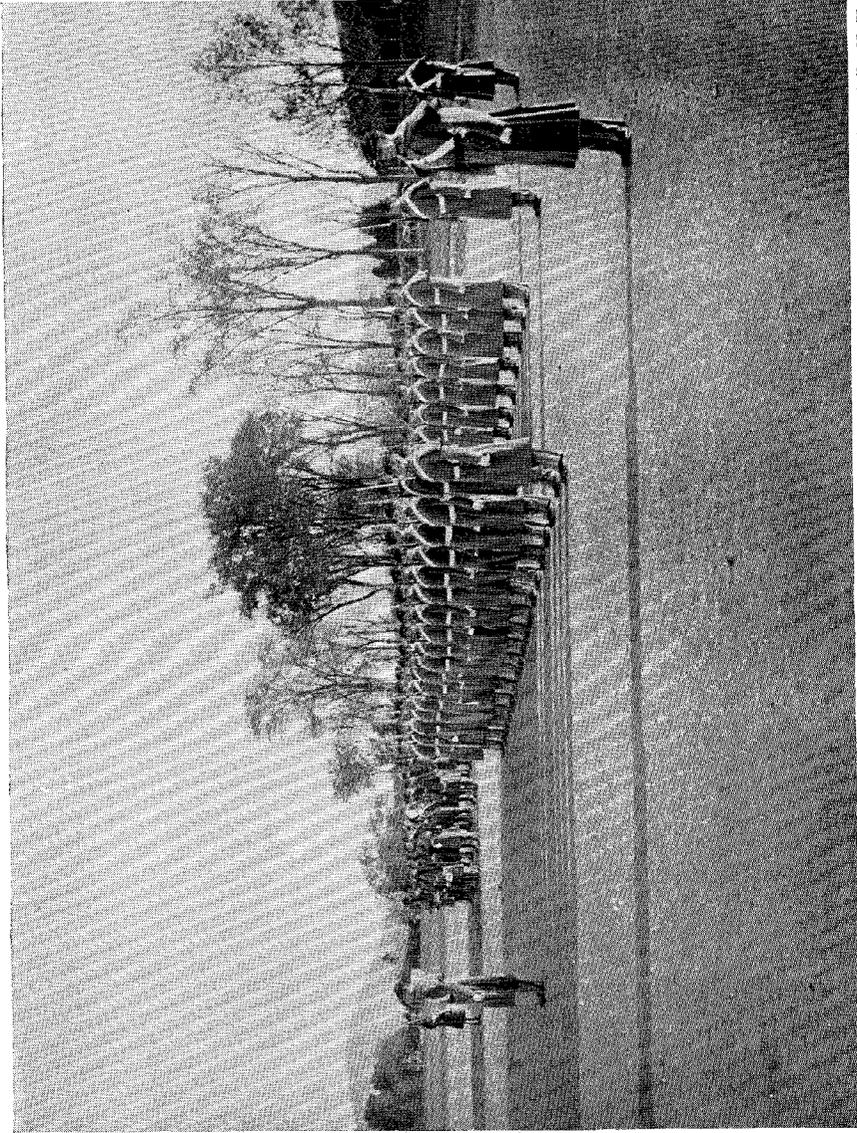
The board should be of a permanent character in order that the Academy may have the benefit of its accumulated experience and be the more secure against rash experiments and innovations made to cure imaginary evils, or to effect chimerical improvements. A system found to have worked well for many years should not be tampered with or be subject to other changes than such as enlightened experience indicates to be safe and expedient.

Fifteenth and sixteenth. The duration of residence of military schools is determined mainly, *cæteris paribus*, by the standard of attainment for admission; the higher the standard the shorter the time, and vice versa, the limits being two and four years. The term at Addiscombe, Sandhurst, and St. Cyr is two years; at Woolwich, two years for the theoretical course and six months more for the practical course. The term at Wiener Neustadt, Austria, is four years, although the standard is higher than at either of the other above-mentioned schools, excepting St. Cyr. With the standard raised as herein proposed, four years is ample for the course at West Point; provided, however, that Spanish is eliminated, and the other subjects not intimately connected with the knowledge absolutely necessary to the military officer shall be properly restricted. With the same standard, a course of studies and instruction comprising all that is absolutely necessary for practical purposes may, in my opinion, be completed in two years. The outlines of such a course will, if requested, be submitted for a rigid scrutiny to the board of improvement.

Assuming the term in time of war to be two years and the number of cadets at the Academy to be 400, constituting a battalion of eight companies, it would seem to me best to divide the cadets into four semiannual classes, a class to be admitted and a class to be graduated every half year. With the standard of capacity raised, as it would be by the means proposed, it may be safely calculated that nine-tenths of the cadets admitted would go through, and that the cost of each graduate would be reduced to about one-third of the present cost.

Seventeenth. That there is something wrong, either in the arrangement of the studies or in the methods of instruction, is acknowledged by the professors themselves, although everyone may not see that all is not right in his own department. The following statement, incidentally made by one of the professors, gives a glimpse of the nature of the evil in question: "Few, except the highest members of the class, seem to have retained anything of the higher analysis, and the grossest blunders are frequently made, even in the elements of algebra and geometry, either through forgetfulness or negligence. Many who graduate would seem to have been very little benefited by their past studies, so far as the retention of what they had once learned is concerned."

The evil is by no means confined to a single class or department, nor can it fairly be imputed to the professors and instructors, who are unsurpassed in the art of teaching. Traced to its sources it is found, mainly, in the third article of the regulations, which, by prescribing merely a syllabus or outline of the studies in each department, leaves the filling in to the professor, and thereby makes him, in fact, the constructor of his own programme. The natural consequence is that the pupil



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GUARD MOUNTING.

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is overtaken, "crammed;" more mental food is given him than the mind is capable of digesting. There is too much abstract theory; not enough of the practical application to impress the theory on the memory, so as to make it durable and practically useful.

The nature of the evils being known, and its cause also, the remedy is plain. First, there must be well-devised programmes prescribed by authority, describing in the most minute detail the instruction, both in kind and amount, to be given in each department for ethics, French, drawing, and for chemistry, mineralogy, and geology, one programme each; for mathematics, natural philosophy, and engineering, two programmes each, a maximum and minimum, the former adapted to the capacity of the first or highest section, the latter comprising only those subjects in which every pupil must pass a satisfactory examination before he can be advanced to a higher section, or be recommended for a commission; the maximum programme to be modified for the intermediate section or sections between the highest and lowest, by excluding therefrom more or less of the more difficult subjects and investigations (in the discretion of the inspector of studies), so that the studies and instructions shall be duly proportioned to the capacity of the said section or sections. Second, it must be made the duty of the inspector of studies to see that the programmes are strictly adhered to, and that the lessons given out by the instructors are duly proportional to the time set apart for their study or preparation.

The preliminary steps necessary to be taken for obtaining these programmes are, first, to require each professor to prepare a detailed programme of the instruction given in his department (in the last academical year), divided into lessons, with an estimate of the time, in hours, a pupil of fair abilities with proper diligence will require to master each subject and lesson, stating separately the time necessary for preparation and that for attendance at recitations and lectures. Second, the programmes so prepared to be referred for revision to the board of improvement at the earliest period practicable. And it is recommended that the board, in drawing up the general programme of studies and instruction proper to be included in the year's course, be instructed to consider the expediency of the following distribution of the subjects: (1) The studies and instruction of the first class (fourth year) to be confined to military subjects exclusively, viz, fortification, field and permanent, with attack and defense, and all other subjects proper to be included in the course of military engineering, theoretical and practical; ordnance and the science of gunnery, the organization and movement of armies, field service, principles of strategy, military administration, military law and Army Regulations, and all other subjects comprised in the terms "military science and art." (2) The instruction given by the professor of drawing to be confined to the first and second years (third and fourth classes), and the studies and instruction of the third and fourth classes to be confined to mathematics, French, and drawing exclusively. (3) Natural philosophy and chemistry, mineralogy and geology, and all other subjects proper to be included in the four years' course of studies and instruction (exclusive of those specified under Nos. 1 and 2), to be confined to the third year (second class). (4) Ten hours daily (average time) from September 1 to the annual examination in June to be given to the above-mentioned subjects. (5) So much of the theory of tactics (artillery, cavalry, and infantry) as shall not be included in the fourth year's course, to be taught during encampment only.

The reasons for the distribution of studies above proposed will, if requested, be submitted to the board of improvement when the subject is taken up for consideration.

Eighteenth. The proposition to be submitted for paragraph 10 of the Academy Regulations, edition 1857. The change is suggested by my own experience while superintending the Academy.

Nineteenth and twentieth. At Woolwich Academy, in an early period of its existence, cadets were brought before a court-martial in order to their dismissal, but the practice having been found to work badly was soon discontinued. At no other foreign military school, if I am correctly informed, has a pupil at any time been brought before a court-martial. At West Point, from 1803, when the Academy was founded,

up to about 1820, no cadet was brought before a court-martial. The power of dismissal rested in the Superintendent and his action in every case was final, and at no time since has there been a sounder state of discipline and morals at the Academy than during that period generally.

The principal objections to trial of cadets by court-martial are: (1) Its demoralizing tendency, the cadet witnesses being under a strong temptation to conceal or withhold their knowledge of facts when the punishment of a beloved comrade is in question. (2) The immunity it affords to the most criminal of the offenders, those who plan, instigate, and pull the wires, but in such manner that no legal evidence can be produced against them when arraigned. Nevertheless, these invisible contrivers and leaders of mischief are well known to the authorities, and unless they may be removed without the formality of a trial a sound and satisfactory state of morals and discipline at the Academy is out of the question. If indeed there be any law which by a fair construction prohibits the dismissal of a cadet unless by sentence of court-martial, the law should be repealed and the President empowered to establish such rules and regulations for the government of the Academy as shall seem to him necessary and proper. The idea of governing boys at school, albeit a military school, by the laws and rules made for the government of an army is manifestly absurd.

Twenty-first. The paragraphs proposed to be restored (see Academy Regulations, edition of 1832, or any previous editions published after 1817) are as follows:

"Paragraph 2. A permanent superintendent of the Academy, appointed from the Corps of Engineers, will have the immediate government of the institution and be held responsible for its correct management. He will direct the studies, field exercises, and all other academic duties; and all professors, teachers, academic officers, and cadets shall be under his command. He will render all returns, estimates, and communications concerning the institution to the inspector.

"Paragraph 3. No officer of the Army of any rank whatever shall exercise command in the Academy unless subordinate to the Superintendent."

By comparing the foregoing with the corresponding paragraphs now in force, which were first published in the 1839 edition of the regulations, it will be seen that the words underscored in the second paragraph were stricken out without other change, and that in the place of the words underscored in the third paragraph, the following words were inserted, "Except the commandant of the Corps of Engineers." These changes, which could not have been made without design, changed completely the office and position of the Superintendent. He was no longer a permanent superintendent, but filled the office, as it were, by routine. It ceased to be his duty to "direct the studies." He was no longer held responsible for "the correct management of the institution," nor indeed could be, as power and responsibility are correlative terms. In proportion as the former is restricted the latter is diminished, and there remained only a common or a divided responsibility subsisting between the chief engineer and the Superintendent, which, as it seems to me, is little better than no responsibility at all. Whether these changes have inured to the benefit of the Academy may be best answered by the three senior professors, who have been members of the institution from forty to forty-four years.

The office of permanent superintendent was created by President Madison in 1816, on full consideration, after consulting with Mr. Monroe, President-elect, and with the Secretary of War, and from a conviction of its necessity, in view of the previous history of the institution. The person whom he designated for the office continued to fill it for the full period of sixteen years, terminating in 1833. Since then there have been eight changes in the office, each change bringing with it naturally some changes either for the better or for the worse in the management of the institution. There are few persons, probably, in the military service of our own or of any other country who possess the peculiar qualifications fitting them in all respects to govern a grand military school like that at West Point, and when the person selected for the position is found, on trial, to be the "right man in the right place," an overruling necessity only would justify his removal.

S. THAYER, *Colonel of Engineers.*

COMPETITIVE AND DIRECT APPOINTMENTS.

The relative merits of appointing candidates direct and by competition has been discussed in previous reports, by the newspaper press, and in Congress. This board was divided in sentiment as to the merits of the two systems, and concluded to merely present figures covering a number of years and showing the results obtained under each system. The table given below covers all the classes which have left the Academy from 1873 to 1891, inclusive. It shows the total number of candidates appointed for each year during that period, the number appointed by competition, and the number graduating who were appointed under each system. It will be noticed that under the competitive system 60 per cent graduated and 40 per cent failed to graduate; while of those appointed direct only 42 per cent graduated and 58 per cent failed. It will also be noticed that for the fifteen years covered by the table the number admitted was 1,588, of whom only 789, or one-half, graduated.

Number of cadets admitted to the United States Military Academy from 1873 to 1894, inclusive, showing number appointed by competitive examination and directly, with number graduated and casualties under each mode of appointment.

Year of entering.	Total number admitted.	Appointed by competition.						Appointed directly.					
		Graduated.	Resigned.	Discharged.	Dismissed.	Died.	Total.	Graduated.	Resigned.	Discharged.	Dismissed.	Died.	Total.
1873	118	34	3	10			47	42	10	19			71
1874	89	13	4	10	1		28	27	10	22		2	61
1875	121	30	8	6	2		46	34	18	22	1		75
1876	98	23	4	16		2	45	24	11	16	1	1	53
1877	96	36	4	11			51	20	8	13	4		45
1878	102	22	7	13	1		43	17	23	19			59
1879	88	29	4	14			47	13	14	14			41
1880	73	23	3	5	1		32	14	12	15			41
1881	85	19	6	8			33	24	10	18			52
1882	129	40	7	12		1	60	35	11	23			69
1883	141	37	10	20	2	1	70	30	16	23	1	1	71
1884	98	24	2	14		2	42	18	7	30		1	56
1885	95	21	9	9	1		40	24	8	23			55
1886	128	44	8	22			74	18	6	29			54
1887	127	43	5	19		2	69	22	12	24		1	58
1888	101	27	4	11			42	30	10	19			59
1889	94	29	4	7			40	27	5	22			54
1890	81	28	3	7			38	23	6	14			43
1891	97	28	5	9	1		43	24	9	19		2	54
1892	114	37	4	10			51	33	11	18			63
1893	106	29		8			37	36	7	26		1	69
1894	101	29	11	1		1	42	33	10	16			59
Total	2,282	645	115	242	9	9	1,020	568	234	444	10	6	1,262

Competitive:	Per cent.
Graduated	66.2
Failed to graduate	36.8
Direct:	
Graduated	45
Failed to graduate	55

The annexed table shows the number of candidates admitted and the number found deficient under the direct and competitive system, respectively, for the nineteen years ending with August, 1891. As in the preceding table, the result is decidedly favorable to the competitive system.

Number of candidates admitted and found not duly qualified at preliminary examinations for admission to the Military Academy from 1873 to 1891, inclusive, by appointment under the competitive and direct methods.

Years.	Competitive.		Direct.		Years.	Competitive.		Direct.	
	Admitted.	Not duly qualified.	Admitted.	Not duly qualified.		Admitted.	Not duly qualified.	Admitted.	Not duly qualified.
1873	57	16	61	58	1884	40	12	58	30
1874	26	10	63	56	1885	41	7	54	26
1875	49	20	75	47	1886	74	25	54	20
1876	38	11	60	42	1887	70	20	57	36
1877	46	27	50	60	1888	42	18	59	38
1878	40	6	62	39	1889	34	14	62	54
1879	46	13	42	21	1890	39	12	43	41
1880	32	10	41	24	1891	43	14	54	26
1881	33	18	52	42	Total	878	277	1,086	743
1882	62	12	67	39	Per cent....	76+	24+	59+	41+
1883	69	12	72	44					

REPRESENTATIVE CHARACTER OF THE CADET CORPS.

It is sometimes contended in discussing the merits and usefulness of the Military Academy that its students are selected from special classes, and frequently through favoritism. This allegation was effectually refuted by the Board of Visitors for 1887 in a table showing the occupation of the parents of cadets admitted for the period embraced from 1842 to 1887. In presenting the table the board very justly said that "the corps of cadets is a typical representative body of the American people. The lower House of Congress is not more representative in this respect than the corps of cadets." An examination of the table shows that cadets are drawn from all ranks and classes of the people. We have supplemented the table in the report for 1887 by another which covers the intervening years, including the present year, thus preserving the statistics on this subject from 1842 to 1891, a period of fifty years.

The following table shows the occupations of the parents of candidates for admission to the Academy for 1887, 1888, 1889, 1890, and 1891:

Occupations.	Number.	Occupations.	Number.
Agents	15	Musician (band leader)	1
Architects	1	Marble dealer	1
Artists	2	No occupation	7
Bankers	2	Officers of the Army	43
Bank officers (6 of them bankers)	12	Officers of the Navy	4
Barber	1	Oil producer	1
Brewer	1	Physicians	50
Brokers	6	Pilot	1
Builders	3	Policemen	2
Clergymen	11	Politician	1
Clerks	17	Presidents of insurance company	3
Collectors	2	Printers	6
Commercial travelers	4	Professors	2
Contractors	8	Publisher	1
County officers	5	Ranchmen	2
Dentist	1	Real estate	7
Editors	9	Railroad officers	8
Engineers, civil	6	Salesman	1
Engineers, mechanical	6	School-teachers	6
Farmers and planters	145	State officers	4
General business	5	Stock dealers (cattle)	4
Hotel keepers	8	Superintendent of gas works	2
Insurance business	5	Steamboating	1
Laborers	5	Unknown	2
Lawyers and judges	80	United States civil officers	6
Liveryman	1	Druggists	3
Lumbermen	3	Dairyman	1
Manufacturers	19	Bookkeepers	5
Mechanics	38	Librarian	1
Members of Congress	5	Postmasters	3
Merchants	92	President of steam-heating company	1
Millers	2	Fishing master	1
Mining	4		

The following table shows the occupations of the parents of cadets *admitted* to the Academy in 1892, 1893, 1894, 1895, 1896, 1897, 1898, and 1899:

Occupations.	Number.	Occupations.	Number.
Accountants.....	3	Letter carrier.....	1
Agents.....	5	Lithographer.....	1
Auditor shipbuilding company.....	1	Liverymen.....	2
Baggage master.....	1	Lumbermen.....	13
Bankers.....	13	Manager of engines and boilers.....	1
Bank officers.....	5	Manager of brewery.....	1
Bookkeepers.....	13	Manager of land company.....	1
Brewer.....	1	Manager of factory.....	1
Brokers.....	4	Manufacturers.....	37
Builder.....	1	Mechanics.....	32
Butcher.....	1	Member of city board.....	1
Capitalists.....	2	Members of Congress.....	3
City marshal.....	1	Member of State legislature.....	1
Clergymen.....	14	Merchants.....	115
Clerks.....	11	Merchant tailor.....	1
Clerks of court.....	8	Millers.....	5
Clerk United States House of Representatives.....	1	Mining.....	10
Collector.....	1	Newspaper correspondent.....	1
Commercial travelers.....	9	No occupation.....	2
Commissioner Honduras National Lottery.....	1	Nurseryman.....	1
Conductor.....	1	Officers of the Army.....	65
Contractors.....	6	Officers of the Navy.....	2
Cotton buyer.....	1	Officers of Volunteers.....	2
County officers.....	5	Oil business.....	1
Credit man.....	1	Photographers.....	3
Detective.....	1	Physicians.....	39
Dentists.....	6	Policemen.....	2
Dock master.....	1	Police justice.....	2
Dock commissioner.....	1	Postmasters.....	2
Draftsman.....	1	President of wire mills.....	1
Druggists.....	10	President of manufacturing company.....	1
Editors.....	13	President of university.....	1
Electroplater.....	1	Printers.....	4
Engineer.....	1	Professors.....	3
Engineers:		Proprietor of elevator company.....	1
Civil.....	7	Publishers.....	2
Mechanical.....	4	Railroad employees.....	3
Locomotive.....	3	Railroad officers.....	5
Stationary.....	1	Real estate.....	19
Engraver.....	1	Restaurateur.....	1
Express business.....	1	Salesmen.....	5
Farmers and planters.....	149	School teachers.....	8
Foreman.....	3	Secretaries.....	6
Hatter.....	1	Ship captains.....	3
Hotel keepers.....	5	Speculators.....	2
Ice business.....	1	Steamboating.....	1
Importer.....	1	Stock business.....	1
Inspectors of factories.....	2	Stock raisers.....	6
Inspector of buildings.....	1	Superintendent of factory.....	1
Inspector of police.....	1	Superintendent of coal and iron company.....	1
Inspector of water meters.....	1	Superintendent of railroad.....	3
Insurance business.....	20	Superintendent of mine.....	1
Inventor.....	1	Superintendent of iron work.....	2
Jewelers.....	3	Surveyor.....	1
Journalists.....	5	Teacher of music.....	1
Justice of peace.....	1	Teacher of garment cutting.....	1
Laborers.....	5	Teamster.....	1
Lawyers and judges.....	100	Undertaker.....	1
		Unknown.....	2
		United States civil officers.....	8

SELECTION AND EXAMINATION OF CANDIDATES.

The present method of selecting candidates, and the time and manner of conducting their preliminary examination, were also made the occasion of special inquiry and discussion by the board. We believe that an immediate change in both these particulars should be made. In the matter of selecting candidates the fact that so many of those nominated by members of the House of Representatives fail to pass the preliminary examinations, and the additional fact that many Representatives fail to nominate at all, or hold vacancies open for a year or more in order to nominate a particular person, show that some action should be taken to correct this abuse.

The report of the committee on appointments and examinations discusses this question, and the special attention of the proper authority is earnestly directed to it. Previous boards of visitors have discussed this general question, and all have recommended such action as would compel Representatives to make nominations of cadets at the proper time, and that such regulations should be made as will insure a larger number of admissions to the Academy.

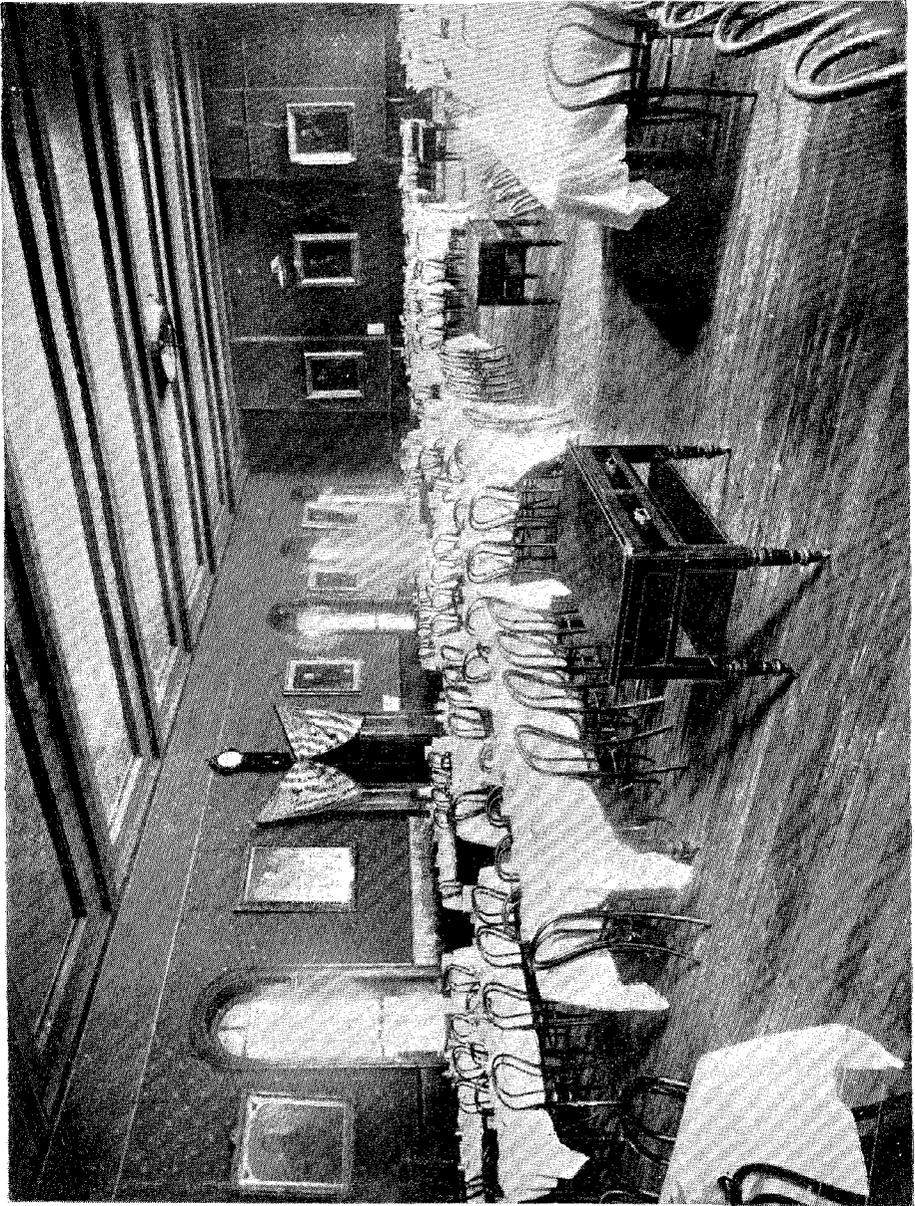
The Board of Visitors for 1887, of which Mr. George W. Childs, of Philadelphia, was president, in discussing the method of selecting candidates, directed the attention of the military authorities and the country to the prevailing abuse with a force and directness that should have commanded prompt action on the part of the President and the War Department. This is a matter within the province of the President and Secretary of War to regulate and correct. Members of Congress should be required, at the proper time, to nominate candidates to fill vacancies at the Academy, and failing to do this, appointment should be promptly made by the President from the list of eligible candidates filed at the War Department. The belief is general that members of the House of Representatives possess the right to appoint candidates for admission to the Military Academy. That such right does not exist under authority of the statutes is shown by the report of the Board of Visitors for 1887, which says on this subject:

The opinion has obtained that members of the House of Representatives have the *right* to appoint candidates for admission to the United States Military Academy. This is an error. The *courtesy* has been extended by the President to Representatives of permitting them to nominate candidates, but they have no more right to make an appointment than they have to appoint a postmaster or a collector of customs. The law authorizing and regulating appointments to the Military Academy is found in chapter 4 of the Revised Statutes, and the attention of members of the House of Representatives is specially invited to it. It provides:

"SEC. 1315. The corps of cadets shall consist of one from each Congressional district, one from each Territory, one from the District of Columbia, and ten from the United States at large. *They shall be appointed by the President*, and shall, with the exception of the ten cadets appointed at large, be actual residents of the Congressional or Territorial districts or of the District of Columbia, respectively, from which they purport to be appointed.

"SEC. 1317. Cadets *shall be appointed one year in advance of the time of their admission to the Academy*, except in cases when, by means of death or other cause, a vacancy occurs which can not be provided for by such an appointment in advance." * * *

There can be no difference of opinion as to the construction of the law above quoted. The right to appoint is not only lodged in the President alone, but the obligation to appoint is imposed. The recommendation of the Representative is in no sense binding on the President, and gives the candidate so recommended by him no legal right to priority in the consideration of the President. The practice of appointing the person recommended by the Representative of the district in which a vacancy exists has been found, as a rule, to work satisfactorily; but the matter of appointment to the Military Academy has been so completely assumed as a right by the Representatives that it has come to be considered as a personal prerogative, to be given and withheld at pleasure. The result of this abuse—for it is an abuse—of the privilege extended by the President has been, and continues to be, detrimental to the public interests and expensive to the public Treasury. The board would not be understood as recommending a withdrawal of the privilege of nominating candidates so long enjoyed by Representatives, and direct public attention to the matter simply to correct a popular error and in the hope that it will result in the adoption of a regulation by the President that will *require* Representatives to promptly recommend candidates for appointment to the Academy, with the alternative of a selection being made directly by the President. The importance and necessity for the immediate adoption of such a regulation is shown by the fact that a large number of districts are constantly unrepresented at the Academy, by reason



GRANT HALL—CADET DINING ROOM.

of the indifference and neglect of members of the House of Representatives, and sometimes of the deliberate design of a Representative to keep the place vacant for a year or two in order to accomplish the appointment of a particular candidate in furtherance of his own political preferment.

DERELICTION IN NAMING CANDIDATES.

In this connection it may be urged that the custom of permitting Representatives to absolutely determine the disposition of appointments of cadets to the Military Academy has been of such long standing as to have all the binding force of law. If this power was exercised by the Representatives in the direction of the public interest and in accordance with the spirit of the law, the plea of long-continued custom might be treated with respect. But when exercised at the whim of the Representative or to advance his individual interests, the authority which is alone vested in the President should be resumed by him and exercised to promote and maintain those interests which have been persistently neglected by the Representative. The board earnestly directs the attention of the President and Secretary of War to this matter. We suggest that notification be given members of Congress that hereafter nominations for appointment to the Military Academy must be made for vacancies that are to occur the year next following on or before January 1, and that in all cases when nomination are not so made the President will exercise his authority to appoint.

The annual examinations take place in June. The law requires that "cadets shall be appointed one year in advance of the time of their admission to the Academy," except in cases where the vacancy is the result of casualty other than graduation. Public notice could be given through the newspapers of the prospective vacancies, and young men residing in the districts in which vacancies are to occur possessing the prescribed qualifications invited to forward to the War Department applications and recommendations. In this way the President would be enabled to select a young man for appointment in every district in which the Representative was derelict. The fact that the President proposed to exercise his authority in the premises would in itself be sufficient to correct the abuse complained of.

PRESENT METHOD OF EXAMINATION DEFECTIVE.

Judged by its results the present method of examination of candidates for admission to the Academy is defective, and this opinion is sustained by members of the Academic Board and others who have inquired into it. The large percentage of failures may primarily be chargeable to a lack of proper training of candidates, but whatever the cause it should be remedied in order that the largest possible amount of raw material might be secured for the successful manipulation of the institution. That only 50 per cent of all those admitted to the Academy has been graduated for many years may be regarded as a reflection upon the preparatory schools and academies of the country, but can not truthfully be said to be a correct estimate of the real character of their worth and efficiency. The board believes that this great deficiency is attributable to the lack of proper care in selecting candidates and not to an absence of efficiency in the public and private schools of the country. Candidates are frequently sent to West Point whose lack of qualification would have been apparent before leaving their homes had they been subjected to examination. In many cases the failure of candidates is due to the absence of any training rather than to the insufficiency or inefficiency of any particular school or system. This would be remedied by holding the examinations at stated times in the several States, in the manner recommended by Colonel Wilson when conferring with the board and outlined in the paper prepared by him and made part of this report.

NEW METHOD OF APPOINTMENT RECOMMENDED.

The board approves in the main the plan of examination recommended by Colonel Wilson, and commends it to the attention of the honorable Secretary of War. If

adopted, with some change in details, it would undoubtedly be attended with good results. We recommend:

(1) That hereafter Representatives be required to nominate candidates not later than January 1, and in all cases of failure to nominate that the President designate young men for all districts that may be delinquent on that date.

(2) That examinations, physical and mental, be held at certain convenient points, to be designated by the Secretary of War not later than March 10, and that these examinations be conducted in the same manner as examinations are now conducted at the Military Academy, and under the direction and supervision of the Academic Board, the examinations to be held throughout the country upon the same days.

(3) That the examination questions be prepared by the Academic Board, each set of questions to be inclosed and sealed and sent to the Adjutant-General of the Army for transmission to the several officers appointed to conduct the examinations.

(4) That officers of the Army, not to exceed two at each point, be detailed to be present at the examinations, to whom the examination questions shall be sent by the Adjutant-General in the exact condition in which they were received by him from the Military Academy, and by whom alone the seals on the respective packages shall be broken on the day and in the place appointed for the examinations, and in the presence of the candidates there assembled, to whom the questions shall be delivered, one set of questions to each candidate in the order in which the subjects shall be taken up.

(5) That these officers be restricted to the conduct of the examination; that their duty be simply to be present at all times during the progress of the examinations; to see that each candidate performs his work without assistance, and to receive and forward the papers when completed to the Superintendent of the Military Academy under such regulations as may be prescribed by the Secretary of War.

(6) That when the papers are received at the Military Academy the Academic Board be required to proceed at once to examine and pass upon them, the results of this examination to be reported by the Superintendent as soon as practicable to the Adjutant-General of the Army.

(7) That Representatives be notified immediately by the Adjutant-General in case of failure of their candidates and requested to name other candidates not later than May 1, such candidates to be examined in the manner heretofore described, provided that can be done prior to June 20, otherwise the candidates to report to the adjutant of the Military Academy not later than July 1 for examination at the Academy.

(8) That candidates who successfully pass the examinations held in their respective localities shall be admitted to the Academy without further examination.

(9) That no person who has failed to pass shall be again nominated for examination during the year for which such person failed.

In order to preclude favoritism in the examination of candidates and in passing upon their papers, the system now practiced at the Academy of assigning a number to each candidate, by which alone his papers are known to the Academic Board, should be followed. The numbers are assigned by the adjutant of the Academy, and he is the only person who knows the names of candidates corresponding with the numbers. This information is held inviolate by the adjutant until the final action of the Academic Board, when it becomes necessary to associate the names with the examination papers.

The plan of examinations recommended does not involve any change in their scope or character as now conducted at the Military Academy, nor does it in any degree lessen the authority of the Academic Board over them. It simply brings the place of examination nearer the home of candidates and saves them the expense of traveling to and from West Point in case of failure to pass. Many young men who might be designated for appointment as cadets are not able to assume the expense of a journey to West Point with the contingency of similar expense for the return trip in case of failure, and nominations have been frequently declined on this account. This is particularly true of boys living at points remote from West Point whose

parents are unable to assume the expense of traveling. Under the proposed plan of conducting the preliminary examinations those who pass would know upon leaving their homes that they are to enter the corps of cadets and remain at the Academy at least for the period of six months, or until the regular semiannual examination of the classes is made.

REPORT UPON PLANS FOR INCREASING THE SCOPE OF THE ACADEMY, TOGETHER WITH ESTIMATES OF COST.

The Superintendent was requested to cause to be prepared an exhaustive report upon the present resources of the Academy; the condition of the buildings now in use; for what purpose occupied, and their capacity. Also such plans for the improvement and enlargement of these buildings as will be required in order to place the institution in condition suitable to an increase of the corps of cadets to a minimum of 500. Such a report was prepared under instructions of the Superintendent by Col. and Prof. C. W. Larned, accompanied by detailed drawings and estimates. All of which are herewith submitted.

REPORT OF PROF. CHARLES W. LARNED, UNITED STATES MILITARY ACADEMY, ON THE ENLARGEMENT OF THE MILITARY ACADEMY, WEST POINT, AUGUST, 1899.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., July 19, 1899.

SIR: The Superintendent requests that you take into consideration the subject of the necessary modifications, enlargement, and increase of the public buildings of the Military Academy involved in an increase of the corps of cadets to a force not exceeding 600, and also such changes and improvements in the existing establishment as may be suggested by a study of the subject. He desires that the results of your investigation shall take the form of a written report, accompanied by such maps, drawings, and estimates as may be necessary to enable him to make a full and explicit presentation of the subject as a basis for the action of Congress.

Very respectfully,

SAMUEL C. HAZZARD,
First Lieutenant, First Artillery, Adjutant.

Prof. C. W. LARNED,
United States Military Academy, Present.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., August 10, 1899.

SIR: In conformity with your communication of July 19, I have the honor to submit the following report:

The corps of cadets on July 19, 1899, numbered 329, exclusive of 3 foreigners present for instructions by act of Congress. The maximum strength allowed by law is 381, and there were, therefore, at that date 52 vacancies, or between 13 and 14 per cent of the legal allowance.

The average strength of the different classes at the close of the academic year for the last ten years is as follows:

First class	59.4
Second class	64.7
Third class	69
Fourth class	92.2

or an average strength for the entire corps of 285.3. The strength as given above for July 19 represents the period of nearly maximum size after the entrance of the new class, and the average for the past ten years is for the period of minimum strength after the annual examination.

The average strength of the corps for the past ten years at the period of maximum strength, i. e., after the entrance of September candidates (excluding those for 1899), is 323.9. This figure is approximate, owing to the difficulty of determining exactly the period of maximum strength, but is sufficiently accurate for purposes of comparison. The difference between these averages of maximum and minimum strength is 38.6, or an average yearly loss of nearly 12 per cent.

The legal maximum of the corps of cadets for nearly all of this period being 381 and the average maximum being 323.9, the average loss to the corps through failure of appointment or deficiency in studies is 15 per cent, or, in other words, the strength of the corps of cadets at the period of its maximum strength is 85 per cent of its legal strength, and at the close of the academic year its strength (minimum period) is 74.9 per cent of its legal strength.

Should the maximum legal strength of the corps be increased by Congress to 600 men, it would follow from the above that, under existing conditions, its maximum actual strength would be 510 and its minimum 449. As the average size of the graduating class for the same period is 59.4, it follows that with the increase proposed a graduating class of about 93 men may be looked for. The size, therefore, of the four classes would be as follows at the minimum period:

First class	93
Second class	102
Third class	109
Fourth class	145

As the losses of the first two classes are small these figures would very nearly represent the size at the maximum period in the beginning of the academic year. The third class, however, would be about 20 per cent larger at that time, or in the neighborhood of 125 men; and the fourth class about 30 per cent, or 185 men. From the foregoing it appears that under the proposed increase quarters for at least 510 men must be provided, with a margin of 20 for possible excess, or 530 in all, and that the classes will have an approximate strength as follows:

First class	95
Second class	105
Third class	125
Fourth class	185

It is pertinent in regarding this increase of size of the graduating class of the United States Military Academy to observe that this is now, or will be in the very near future, equivalent to one graduate for every million inhabitants, and also to recall the fact that in the greatest

war of modern times, after four years' conflict had sifted thoroughly the military talent of the land, the commanders-in-chief of the opposing armies and the commanders of every separate army in the field were graduates of this academy; that during this war it gave the country 20 Federal army commanders, 36 corps and 54 division commanders, all of the rank of major-general, in addition to a large number of brigade and regimental commanders; that the chiefs of the active corps of the general staff in Washington who organized the great armies of the war were also West Pointers, and that on the opposing side a very large majority of the officers in chief command, as well as the President of the Confederate States, were all educated at the Academy. This condition of affairs was not the result of an initial advantage of position, but the fruit of experience on the battlefields of a long and terrible struggle. The advisability of increase of the number of graduates of the Academy is independent of the question of increase in the Regular Army, and tends directly to minimize the necessity for such increase, for the reason that as more men of military education are at the service of the nation in the emergency of war, the more efficiently and promptly can large bodies of volunteers be organized and trained, and were the nation to possess three or four such schools their provision of educated soldiers would be the most economical military establishment it could create. As a matter of fact, a graduating class of the size estimated would not provide the yearly supply required for an army of 60,000 men.

PERSONNEL.

The personnel of the Military Academy consisted, in January of the current year, of a superintendent with a military staff of 6 officers, and an academic staff of 10 departments with heads and assistants as follows:

Department of tactics.—Lieutenant-colonel, senior instructors, assistant instructors, 7 assistants.

Department of engineering.—1 professor, 1 assistant professor, 3 instructors, 4 assistants.

Department of natural and experimental philosophy.—1 professor, 1 assistant professor, 2 instructors, 1 assistant in charge of observatory, 4 assistants.

Department of mathematics.—1 professor, 1 associate professor, 1 assistant professor, 7 instructors, 8 assistants.

Department of chemistry, mineralogy, and geology.—1 professor, 1 assistant professor, 3 instructors, 4 assistants.

Department of drawing.—1 professor, 1 assistant professor, 3 instructors, 4 assistants.

Department of modern languages.—1 professor, 2 assistant professors, 5 instructors, 7 assistants.

Department of law and history.—1 professor, 1 assistant professor, 3 instructors, 4 assistants.

Department of practical military engineering, military signaling, and telegraphy.—1 instructor, 2 assistant instructors, 2 assistants.

Department of ordnance and gunnery.—1 instructor, 1 senior instructor, 1 assistant instructor, 2 assistants.

1 chaplain, 1 master of the sword, 1 teacher of music.

A grand total of 67, of whom six heads of departments occupy permanent chairs; all others, excepting associate professor, being subject to detail or removal. This staff of officers is adequate to the proper instruction and care of a force of 350 cadets as a maximum. An increase above that number would necessitate a certain increase in the number of each department, the amount of which in the different departments would be a nearly regular proportion to the enlargement of the corps. This proportion would be quite regular in the academic departments, and is a function of the number of sections into which the class under instruction is to be divided.

It may be stated in general terms that the vital principle of the system of instruction at the United States Military Academy is, "Every man, every day." In other words, every cadet is expected to recite upon every day of attendance in every subject in which he is under instruction. Although this does not actually occur in every case, the practice is kept so near the theory that no cadet can safely count upon immunity at any time, and is therefore obliged to keep himself constantly prepared. It is this principle of daily examination that makes the average attainment at this institution so high, the results of its instructions so thorough and remarkable in effect upon the individual, and its name justly famous among the educational institutions of the world. This is a touchstone from which none may escape; a test that renders favoritism impossible; an ordeal that makes the diploma of the Military Academy a testimonial to work actually accomplished, and a guaranty of ability to which a parallel can be offered by very few institutions of learning in the world. Any departure from this would be a very serious injury to the institution, and for this reason no increase in the number of cadets should be made unless this principle of instruction is to be preserved.

In order that it may be operative the division of classes into relatively small sections becomes necessary, and the amount of time available for any given subject regulates the size of sections into which the class can be profitably be divided. For the subjects to which one and a half hours are assigned for recitation, 12 men is about the limit; for those of one-hour recitations, 8 or 9, and in some cases 11 or even 12 is the attendance. As every subject has two periods of recitation each day the number of instructors required will in general be one-half the number of sections into which the class is divided. Applying this rule to the personnel of the different departments and allowing a slight margin one way or the other for the relative difficulty of the subjects, the following would result as the schedule of instructors upon a basis of a maximum of 95, 105, 125, 185, respectively, for the four classes:

Assistants.

Engineering	5
Natural and experimental philosophy	6
Mathematics	13
Chemistry, mineralogy, and geology	5

Drawing	6
Modern languages	13
Practical military engineering	3
Law	5
Tactics	9
Ordnance	4
General staff	8
<hr/>	
Total	77
Standard at present	51
<hr/>	
Increase	26

In the event of adding a light battery of artillery to the permanent command of the Academy, two more must be added to the total, or an aggregate increase of 28 officers. Of these probably 12 would be bachelor and 16 married. To recapitulate, it appears that with a legal maximum of 600 there will be a probable actual maximum of 510 cadets; a probable actual minimum of 449; that it will be necessary to provide for a possible actual maximum of 530, and in view of the need of vacant rooms for contingent purposes, 550 should be taken as the maximum figure; that at the maximum period of the year the average graduating class will be about 95; the average 2d class, about 105; the average 3d class, about 125; the average 4th class, about 185; that the total increase in academic personnel will be 28 officers in the proportion of about 16 married to 12 unmarried.

The following shows the enlisted strength of the post at date:

	Band.	Field music.	Post noncom- missioned staff.	Hospital corps.	Company E, engi- neers.	Ordnance detach- ment.	Cavalry detach- ment.	Army service men, Quartermaster's Department.	Total.
Authorized strength	24	15	3	23	134	15	75	141	430
Number of men in company or detachment ..	24	12	3	23	106	14	70	139	391
Vacancies	0	3	0	0	28	1	5	2	39
Married men in company or detachment ..	21	2	3	3	19	6	15	72	141
Married men living on the post	19	2	3	0	14	5	5	53	101
Married men living off the post	2	0	0	3	5	1	10	19	40

The number of horses now employed for cadet instruction is 100. There would be required an increase of 160.

The cavalry detachment authorized at present is 75 men. It would require an increase to 160 men, as the present detachment is entirely inadequate to its duties, and an allowance of one man to each horse is required for proper service.

The detachment of army service men should, by the estimates of the quartermaster of the Military Academy, be increased by 25 men.

The company of engineers would require no increase.

Ordnance detachment, no increase.

The hospital attendants, no increase.

Academic building attendants, 2 additional.

Barrack police, 4 additional.

Steam and electric plant, an increase of 1 assistant engineer and 4 firemen.

The clerical force of the adjutant's office would require 1 additional clerk and 1 messenger, and in the printing office 1 binder and 1 assistant.

The quartermaster would require an increase of 2 clerks.

As the change contemplated could not, even with proper accommodation, be undertaken at once, owing to the congestion in the academic course by the sudden intrusion of a very large class, I recommend that the change be made gradually operative over a period of three years, which would have the effect of adding about 66 additional men to the incoming fourth class each year of that period.

To bring the total legal representation up to a maximum of 600 would require 219 additional appointments. The distribution of these might be effected in various ways. The following method would, in my judgment, greatly strengthen the Academy:

The President of the United States to be entitled to 40 representatives at the Academy, or 30 in addition to present quota; the Vice-President, 5; each Senator, 1; the governor of each State, 2; the governors of the Territories, 1 each; Puerto Rico, 1; the Philippines, 1. This would give 220 additional appointments, or, with present representation, 601. I am of the opinion that it would be greatly to the advantage of the Academy to be brought into closer touch with the State administration and National Guard, and that the privilege of two appointments bestowed upon the governors would tend to create an interest in and sympathy with the Academy and its uses not at present generally felt.

By adding the Senatorial, Territorial, and insular, with 10 additional Presidential appointments the first year, 1 gubernatorial and 10 additional Presidential the second year, the remaining gubernatorial and 10 additional Presidential the third year, the increase could be quite evenly distributed over the three years.

BUILDINGS.

Exclusive of outbuildings, reservoirs, and batteries, the Military Academy and post of West Point consists at present of 163 structures, classed under the following heads:

Barracks (1 cadet, 1 band, 1 engineer, 1 army service, 1 cavalry, 1 drum corps) ..	6
Academic building	1
Headquarters building	1
Mess hall	1
Gymnasium	1
Chapels (1 cadet, 1 general)	2
Library	1
Hospitals (1 cadet, 1 enlisted man)	2
Store (cadet quartermaster)	1

Riding hall	1
Memorial hall	1
Ordnance laboratory	4
Observatory	1
Hotel	1
Quartermaster's, carpenter, and blacksmith shops	1
Quartermaster's store	1
Equipment shed and commissary store	1
Post exchange	1
Fire-engine house	1
Electric-power house	1
Gas houses	2
Gas tanks	3
Government stables	2
Livery stable	1
Butcher (contract)	1
Bakery	1
Telephone exchange and photograph gallery	1
Filter houses	2
Water house	1
Officers' quarters (double sets, 7; single sets, 19; triple set, 1; set for eight bachelors, 1; set for eight bachelors or four married, 1)	29
Detached enlisted men (single sets, 6; double sets, 25; quadruple sets, 5)	36
Employees and master of sword (single sets, 3; double sets, 2; triple set, 1, including master of sword; Kinsley house, 1)	7
Schoolmistress	1
Band leader	1
Guardhouses (south gate, general cadet)	3
Bath houses (cadet, soldier)	2
Boiler house (for heating buildings near cadet area)	1
Coal storage (1 of these at present used for storehouse and temporary stable)	3
Waiters' quarters (at mess hall)	1
Laundries (cadet and hotel)	2
Post-office	1
Magazine	1
Schoolhouses (1 soldiers' children, 1 officers' children)	2
Store	1
Boathouses and pontoon house	4
Storehouses on north and south dock	2
Firing house, magazine, 2 shot houses (at water battery)	4
Ice houses	3
Miscellaneous purposes	15

These structures have been erected at various periods and irregular intervals from 1816 to the present day. This sporadic building, brought about partly by the adverse conditions under which the Academy developed at its formative period, has prevented the adoption of any systematic plan in the arrangement or coherent type in the architecture of the public edifices, although the topographic requirements of the site have controlled developments along certain lines, and the so-called Elizabethan style of the cadet barracks and library have, to a certain extent, determined the character of some of their more important neighbors. In the main, the buildings of the Military

Academy are dignified and fairly satisfactory, and have well served for a certain period the purpose for which they were built. The development of the school and advance in building methods have, nevertheless, made them, one after another, obsolete and inadequate, and of late years the liberality of Congress has replaced some of the main buildings by new ones of the best type, and this policy should continue until the entire institution is renovated.

There have been three important periods of construction in the history of the Academy. The first, from 1836 to 1841, included the chapel, the academic building recently torn down, ordnance laboratory, and the library. This latter, a castellated and buttressed building with a dome, determined the style of the barracks erected later. The second, from 1851 to 1858, comprises the cadet barracks, mess hall, riding hall, a soldiers' hospital, and two sets of barracks. The third, begun in 1890, sees completed the new academic building, gymnasium, a memorial hall, a renovated library, a new water supply, some few officers' quarters, a soldiers' hospital, barracks, and quarters, and a battle monument, with other minor changes. Although in this last period much has been done, there remain many of the buildings of the first and second period in an inadequate and obsolete condition, irrespective of any increase in the functions of the institution. Any proposition looking to a considerable enlargement of the Academy involves at once a review of the whole establishment, and invites at the same time a consideration of the scheme of arrangement throughout with a view to its systematic renewal.

THE CADET BARRACKS.

The greater portion of this building was erected in 1851, an addition to the wing of two subdivisions and a second sally port having been completed in 1882.

It is constructed of the local granitic gneiss quarried on the post. The ground plan forms an L, the body of which, 341 feet long, faces almost exactly due north—a very grievous error of orientation, which violates the first principle of sound planning of structures used for barracks, and which can not be remedied. As a consequence 60 rooms are without a ray of sunlight during the entire year, and the basement areas and exterior walls of the north façade are green with mold. It is of four stories on a basement throughout, and is flanked by two octagonal towers; with tower bays on either side a central sally port. The architecture is of the castellated and buttressed type commonly known as Elizabethan, or in this case more properly Tudor, with heavy table drip stones over the openings, and presents a very satisfactory and military appearance.

As it now stands the barracks provide 200 rooms above the basement, 8 of which are windowless and fit only for storage. Of these, 128 belong to the main front and 72 to the wing. The two divisions at the west end of the main front are now used for officers' quarters and

other purposes and the partitions have been changed to suit these uses. Normally arranged, however, the rooms make up the figures as given above. Each room can properly accommodate but 2 cadets, which renders the extreme capacity of the present barracks 384. Transverse halls divide the building into sets of 4 rooms on each floor, or 16 to a division of barracks, an arrangement much superior to the longitudinal hall for a barracks.

The light in each room is now adequate, but the ventilation is poor. The system of heating is direct radiation from a central plant by steam coils of various patterns of obsolete type. This system of heating without artificial ventilation is most pernicious, and with many individuals produces constant headache. The whole system should be changed to a direct-indirect, with coils in window openings and noiseless returns.

The hallways are floored with wood and need constant renewing, besides being noisy. First floors should be of concrete or composition, and upper floors of tiles, preferably rubber. There should be provision for water supply and slop sinks on each floor, inclosed under stairway.

The basement is now a damp and unwholesome space, divided into waste rooms used for rubbish and storage. The bathrooms and sinks are combined in a separate building erected of late years in the area. This plan is inconvenient and objectionable. Besides giving excuse for frequent leaving of barracks, the sinks become a sort of social gathering place for cadets and afford opportunities for hazing. Those who may be sick or partially invalided are compelled in inclement weather to go through snow and rain, a serious hardship at night time. Modern sanitary plumbing renders it perfectly safe to place the sinks and baths in the basement of barracks, a change which will be rendered necessary by the erection of the contemplated addition to barracks and the removal of all outbuildings from the area of barracks.

The present grade of the area is very irregular, and since the erection of the new wing and Academic building interferes with their levels. This must be remedied in the event of an addition to barracks, and should be in any event. The whole area should be paved with asphalt. A great desideratum for the social uses of the cadets is a class room where each class can assemble and discuss questions of interest pertaining to its organization. These meetings are frequent in the corps and are generally held in the small quarters of individuals. In an enlarged plan the rooms over the present sally ports, now used for the quarters of the Dialectic Society and the Young Men's Christian Association, can be divided by floors into four rooms of the same floor space and sufficient height. The Dialectic and Young Men's Christian Association halls will be provided for on the third and fourth floors of the Corps Headquarters building.

Estimates for the foregoing changes and improvements accompany this report; also a sketch plan showing arrangement of baths, sinks, and spray rooms in basement.

ADDITION TO CADET BARRACKS.

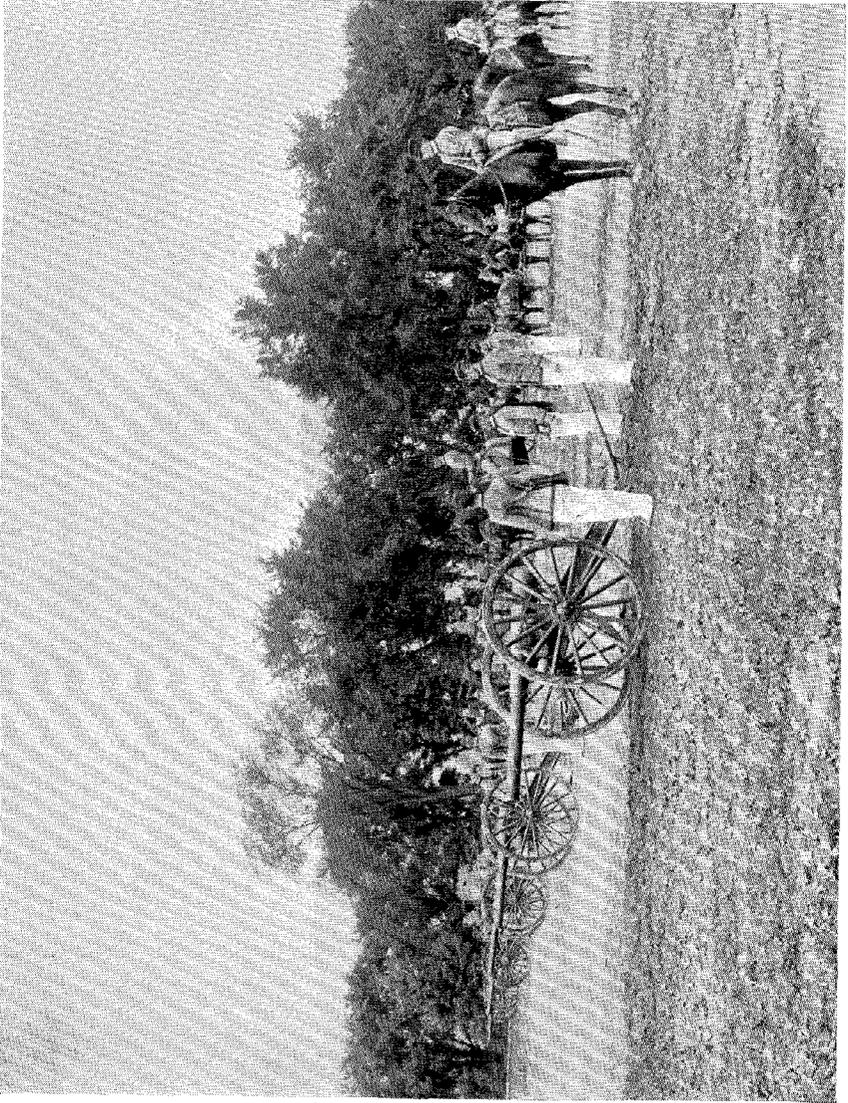
It having been determined to give additional barrack room by completing the quadrangle formed by the existing barrack and Academic building, the most convenient and commodious arrangement is a duplication of the north front in general plan, introducing in place of the sally port a corps headquarters and administration building. An arrangement at the southwest exactly similar to that in the northwest angle would add a half division to the wing, which, with the new extension, would give a total addition of 120 rooms, 8 of which are dark, leaving an available increase of 112 rooms. The aggregate available rooms in the entire building would be 304. The headquarters and administration building will occupy the portion devoted to a sally port plus a half division on each side. It projects 30 feet beyond the main wall and is flanked by towers. In height it should stand somewhat above the main building to allow sufficient rise to the Dialectic and Young Men's Christian Association halls on the upper floor.

The superficial area of each floor will be approximately 81 by 55 feet = 4,455 square feet.

On the first floor will be a guard room for officer of the day, orderly room, and storerooms. On the second floor, in the salient, will be the commandant's office and library and office for officer in charge, with bedroom; in rear two offices for clerks, and orderly room and toilet and closets. In the side halls of first and second floor, adjacent to the headquarters building and communicating with it, the eight rooms on the first two floors will be required as offices for the six tactical officers in command of companies and for storage and record. The third floor of the headquarters building proper will afford ample space for two halls for the accommodation of the Dialectic Society and the Young Men's Christian Association, the approaches to which will be from the halls of the two adjacent divisions of barracks. Provision should be made for an orderly room for each company, which, together with the 8 added to headquarters, will withdraw 14 from the available total, leaving 290 for assignment to cadets.

RIDING HALL.

The present riding hall, erected in 1855, is a stone structure with wooden trussed roof, 218 by 78 feet. It is badly warmed and lighted, and will be inadequate in floor area in the event of an increase in the riding classes. The lack of proper heating causes the tan bark to freeze and cake in winter and the bad light interferes with instruction. A new hall can be located on the plateau east of the mess hall 300 by 100 feet. A ramp leading to entrance on east front would give ready and convenient access from the stables. This structure should have an iron trussed roof with skylights, and should provide ample gallery accommodation, which the present building lacks. Its architecture should be similar to that of the Academic building, with which it masses from the river.



ARTILLERY—IN BATTERY, PREPARED FOR ACTION.

The old riding hall can be converted with little difficulty into an excellent stable on the ground floor, and a floor thrown across on iron piers below the sills of the windows will provide an admirable drill shed, which, by a light viaduct thrown across to the terrace at the west end, will be very accessible in winter.

THE CHAPEL.

The chapel is inadequate to the present needs of the institution. With the proposed increase its capacity should be more than doubled. The associations connected with this building make it highly desirable that any increase in the capacity of the building should leave the present structure as nearly intact as possible. The interior is now basilican in form. To double its capacity and preserve this form would unduly lengthen the building and make its proportions very attenuated. The addition of a transept would change its style, but by the addition of a small dome over the intersection of nave and transept the style can be changed to Romanesque and all of the existing structure preserved intact. The apse as it now stands would retire south of the transept, and in order that the rostrum and screen retain their present size and appearance the space on the east and west to the main wall could be used for organ and choir, respectively. I append estimates based upon this modification.

CADET MESS HALL.

The building now used as a cadet mess includes under its roof, in addition, an officers' mess and a set of quarters. There are various out-buildings attached and detached, used for kitchens, storerooms, servants' quarters, and for the meeting of the Military Service Institution and social purposes. By remodeling the entire group a fine mess hall 150 feet long by 46 feet wide in the clear, besides bays, can be provided, together with convenient increase in kitchen, storeroom, and servants' accommodation. Drawing showing plan as modified is appended. It will be observed that this increase is obtained by a very small addition of masonry wall. The floor of Schofield Hall will have to be lowered to the general line; tiling of main hall to be carried throughout the extension; kitchen to be carried up through two stories and floor to be tiled.

THE CADET HOSPITAL.

The hospital as it now stands is unfortunate in plan and design. As planned the ward accommodation is absurdly inadequate and out of proportion to the original cost of the building. Much space in the main structure cut up for minor uses should have been devoted to wards, and as a matter of fact had to be used for that purpose. Any epidemic, however mild, immediately congests the hospital, and if of a malignant type can not be treated in this building with safety. Had the present outbreak of scarlet fever occurred in winter it is difficult to

see how it could have been met. An additional wing is imperatively needed for the care of ordinary sporadic diseases and an added building for contagious diseases.

The addition for sporadic diseases will take the form of a new wing, which, of necessity, duplicates the north wing. The addition for contagious diseases finds convenient site in rear and parallel to the main hospital. Upon the recommendation of the post surgeon, provision is made for two wards of 25 beds each—one for the infected and the other for suspected patients. It provides also a dining room and kitchen, and at least two rooms for individual isolation. The building will be of brick, two stories in height, 125 by 25 by 40 feet, interior measurement; all rooms to be of glazed tiles on floor and walls and Keene cement on ceilings. The formation of the ground will provide sufficient basement for piping and plumbing without the necessity of much excavation.

THE GYMNASIUM.

By removing the end (south) wall and inserting two new bays the gymnasium will be lengthened 36 feet. On the main floor the gymnastic hall will have a length of 126 feet and a breadth of 72 feet, or a floor area of 9,072 square feet, sufficient for the increased classes. The swimming tank below will be correspondingly enlarged, and in rear of the bowling alleys a room for the athletic association will be provided.

THE BUILDING OF THE QUARTERMASTER OF CADETS.

An extension 50 feet to the west of the north division of the present building is provided, for giving much needed and well ventilated and lighted tailor and repair shops, together with a covered approach to basement and elevators to the upper stories and additional storage.

THE BACHELOR OFFICERS' MESS AND QUARTERS.

The absorption of the present officers' mess by the cadet mess renders necessary the provision of a separate building for their use. The general officers' mess building is also the home of the West Point army mess, an organization whose functions include the entertainment of foreign officers and official guests of the Military Academy, as well as those of our own service who may be ordered on temporary duty, and also distinguished civil functionaries, national or foreign, whom duty or inclination brings to the Academy. In connection with the Memorial Hall, just erected, the mess building is also charged with the provision of board for graduates of the Academy attending the annual reunion of the alumni. All of these various and important uses demand that the building devoted to them shall be adequate and dignified and shall also occupy a central and convenient location. Such a site is found adjacent to the Memorial Hall—commanding a view of the plain on one side and of the river on the other—accessible to the important buildings and remote from cadet barracks.

Estimates, also plans and drawing showing three stories and principal façade, accompany this report. The building is 122 by 54 feet and consists of a main structure one story in height, of dressed granite, upon a basement and subbasement of rubble masonry rising from the terrace below the level of the plain. This building should not exceed one story above the plain, forming as it does a group with Memorial Hall. Its architecture of Renaissance type is designed to harmonize with the lines of the Memorial Hall without copying them, preserving sufficient individuality to indicate its military character. At some future time a building on the other flank would complete the pyramidal composition of the whole mass.

This building provides, in addition to the large public rooms of the first floor, suites of living rooms for resident or visiting officers or the guests of the Academy; from the east porch will be seen one of the finest river views in the world.

THE HOTEL.

This building, erected in 1829 upon the finest site on West Point, has been added to from time to time in an irregular way until the present inconvenient and unsightly combination has resulted. The main building is of stone stuccoed; the main east wing of brick stuccoed. To this has been built another low wooden addition for rooms and one for water-closets. To the north an extension to the dining room has also been added. The result of these accretions is still inconvenient and inadequate.

The original and main purpose of this hotel was to afford comfortable accommodations at reasonable terms for the officers of the Army, civil officials of the Government, foreign visitors, and the relatives and friends of the cadets. It is safe to say that it does not fulfill these conditions and has so far departed from them that officers of the Army and the greater proportion of the families and friends of cadets find the expense far beyond their means, to say nothing of the inadequacy of the accommodation afforded by this hostelry. This is due partly to the nature of the plan (the fewness of the rooms and the great discomfort of the majority of them), partly to the inadequate heating of the building (which renders three-quarters of it unavailable in cold weather), and partly to other causes.

It is greatly to be regretted that the hotel occupies this prominent site, which should belong to the general parade and be devoted to public structures or monuments. The wisest procedure, in my judgment, would be to raze it and erect another, better to fulfill its functions, on the site now occupied by the former Kinsley mansion. This site has a fine view of the river, is conveniently near, and at the same time desirably remote from the immediate neighborhood of camp and barracks.

If this course is not feasible, the present building certainly should be enlarged and heated so as to enable the proprietor to offer proper attractions to visitors, and render the hotel on one hand profitable and

on the other satisfactory to the official public most interested in its use. To this end I recommend the destruction of all wood additions, the building of a considerable west wing, the addition of two stories on the dining-room extension, the further extension of this member and its rebuilding in brick, and the introduction of steam heat throughout. The porches, which are the main feature of a hotel such as this, should be rebuilt and enlarged.

OFFICERS' QUARTERS.

The buildings occupied by the officers of the Military Academy as quarters are of every variety of type, construction, and material, and of all ages, from the earliest days of the Academy to the present date. The most substantial are those occupied by the Superintendent and heads of departments. Part of these are of stone and the rest of brick. They are all old structures, some of them dating from 1816. The remaining houses are of brick or wood and have been variously altered and added to. Upon the older buildings very much money has been expended in repairs, and as the appropriations for repairs cover the entire plant of the institution it is impossible to make thorough renovations. As a consequence repairing by driblets goes on from year to year at a very large aggregate cost and with only temporary results. It would be a wise policy gradually to tear down and replace some of the smaller wood quarters by modern brick dwellings, and in the case of the old masonry buildings to renovate them thoroughly throughout, two or three at a time by special appropriations from year to year.

QUARTERS FOR MARRIED OFFICERS.

The addition of the wing to the hospital renders necessary the removal of the small block of three sets of quarters. The removal of the old hospital building decreases by two more the number of married quarters. The old wooden building at the north end, containing three sets of quarters occupied by the master of the sword and civilian employees, should be torn down and the site used for new sets for officers. To supply the places of these above enumerated and the needed increase 17 new brick sets are recommended, the sites selected and located on the map and estimates given. The plan adopted for quarters recently erected is an excellent one, and has been made the basis of estimate for the new sets.

QUARTERS FOR UNMARRIED OFFICERS.

The building already erected for this purpose is very badly located, placed as it is in the rear of the old hospital building and facing the back yards of officers' quarters. It is completely shut off from air and view on every side, and has the general surroundings of an outbuilding. The old hospital, which abuts so closely on the road as to allow only a very narrow sidewalk, shuts it off completely from the river.

The old building, abandoned as a hospital and very ill adapted for officers' quarters, stands squarely in the way of the main road which is generally narrowed at this point. By its removal the highway can be straightened and made of full width, and a large addition, facing the river, can be made to the set of quarters of unmarried officers, the whole forming a single and effective building capable of accommodating altogether 28 officers.

QUARTERS FOR ENLISTED MEN.

In my judgment these should not be increased but rather diminished. The multiplication of these is inimical to the best interests of the Academy and an economic administration of its affairs. The reasons for this are various. First, the sources of infectious diseases are greatly multiplied, and the necessity of a larger medical staff increased. Virulent diseases threatening the health of the corps of cadets have frequently been and are generally prevalent in these quarters and among the large number of children living in them. Secondly, the appropriations for the Military Academy are largely increased thereby, both directly and indirectly, for not only do repairs and modifications absorb money and labor, but the general systems of drainage, water, light, and heat are largely extended by their needs. Thirdly, they occupy ground better used for general purposes. Fourthly, the erection of quarters for enlisted men encourages marriage among them much beyond the limit authorized in the Army, injuriously affects general discipline, and beyond a certain limit subserves no good purpose whatever.

There should be a limited number of such quarters, well built and convenient, but this number should be restricted to the uses of men of a certain grade of rank or merit. Skilled laborers and mechanics should be encouraged to remain in the service of the Academy by the offer of separate quarters, but beyond this limit the burden of the Academy is increased without commensurate return.

ADDITIONS TO ENGINEER, CAVALRY, AND ARMY SERVICE BARRACKS.

The engineer quarters are already very much cramped and lacking in proper conveniences for the men. A wing or extension to the north of 75 feet is recommended by the commanding officer, and is included in the estimates.

An addition to the army service quarters of 50 feet is made necessary by increase in the detachment.

The same may be said regarding the new cavalry barracks, which, as a wing of the old barracks 107 feet in length, should occupy a portion of the site now used for stables, and which will become available upon the conversion of the old riding hall to that purpose.

NEW ARTILLERY BARRACKS, GUN SHED, AND STABLES.

It has long been thought that the permanent establishment of a battery of light artillery at the Academy would be of great advantage to

instruction in that branch, and a much-needed relief to the overworked cavalry horses and detachment of men enlisted for their care, who are now compelled to do double duty as artillery and cavalry with a very different result in both rôles. The functions of the cavalry and artillery horse are entirely distinct and even opposed. A horse broken to the requirements of a light battery is ruined as a cavalry horse, and conversely. For this reason the cadets are never properly mounted for cavalry exercises and drills, and knowing nothing of a properly trained cavalry mount. This is very much to be deplored. In the same way the light battery equipment is inferior, and they see nothing of the personnel and mount of a highly trained artillery organization. These important branches of the Army should be seen at their best and not at their worst at the Military Academy. Again, since for the varied uses of cadets in cavalry exercises the horses should be highly trained and groomed and their equipments kept in best order, there should be not less than one enlisted man for each horse. At present all these points are necessarily neglected.

The barracks and buildings for the proposed battery of artillery are located on the new Kinsley addition near Highland Falls. The barracks overhang the river, giving a convenient basement, and the gun shed forms an angle with the stable whose reentrant gives a convenient stable yard and picket line.

SCHOOL HOUSES.

The school for children of enlisted men has become overcrowded, and is not in other respects in a condition that does credit to modern educational methods. This school has a large attendance of both sexes, and should be well equipped with all necessary appliances for instruction. In addition, the rooms should be well ventilated and lighted, well painted and floored, so that they can be kept bright, clean, and attractive, and proper privies, well plumbed and conveniently arranged, should be under cover. As the Military Academy is one of the model schools of the world, it is not creditable to the institution that it should provide for its enlisted men a school lacking in any of the essentials for fair common-school instruction. This building is without a cellar, and is damp and unhealthy in consequence, being not infrequently flooded in heavy weather. The heating has been insufficient, and during the past season difficulty was experienced in keeping the temperature anywhere near comfort. One hundred and sixty children are huddled into four bare, cheerless rooms, without proper desks, blackboards, maps, or apparatus. There is no plumbing, the privies being outside and in a condition to match the surroundings.

The building should be wholly renovated; a story should be added and a cellar built. A new equipment of 200 desks and seats, together with benches, blackboards, globes, maps, and other apparatus should be provided. Wainscoting, painting, plumbing, and ventilators are required for comfort, appearance, and health.

The school for officers' children is a small structure, consisting of one room and a cellar. It requires another room and proper plumbing.

ADDITION TO QUARTERMASTER'S SHOPS.

The care and repair of the existing plant and the erection of many minor constructions falls upon the quartermaster of the Academy, and is already a large and responsible work, demanding experience and ability in the officer having it in charge. It is economical to the Government to have as much as possible of this work done in its own shops, and the necessity for a competent plant is imperative. The proposed enlargement of the Academy would increase this work, and a corresponding increase in the plant is demanded. There is provided in the estimates an extension of the carpenter shop, repair shops, and stables, a lumber storehouse, paint shop, and wagon sheds. These are based upon a careful consideration of present and future needs.

NEW COMMISSARY BUILDING.

The old equipment shed, now in part used as a commissary building, is remote, inconvenient, and unsuited to the purpose. A new building, conveniently located, is recommended, as shown on the map and in estimates.

NORTH GUARDHOUSE.

The north guardhouse is old and inadequate and its location inconvenient. I recommend the erection of a brick structure, to cost about \$10,000, at the intersection of the Fort Putnam and main road, as indicated on the map. The two guardhouses would thus command all the approaches to the post, and be within easy reach of each other and the sentinels' posts.

THE PRINTING OFFICE.

The report of the adjutant of the Military Academy upon the work and cost of the printing office shows a large balance in favor of the Government sufficient to warrant any increase of its functions. The natural growth of the Academy in scope and method, irrespective of an increase in size, warrants the presumption that the amount of printing will increase. An increase of the Academy makes this doubly certain. The binding of the post library and of the different departments, as well as of the various text books and pamphlets issued from time to time, would make the addition of a bindery a very economic and useful feature of the office.

ENLARGEMENT OF SUMMER ENCAMPMENT.

The present site of the summer encampment is open to two objections: The gradual growth in size of the corps has made it cramped, and the proximity of Fort Clinton on the north interrupts the free circulation of air. Only a portion of this work has any historic interest, i. e., the northeast bastion and masonry casemate. By the removal of the latter earthwork a fine additional sight for camp would become available, and

a free sweep of air from north to south would result. At the same time a beautiful view of the river, now cut off by the fort, would be open to camp and plain. This is a matter of minor expense, and could be accomplished partly by post labor.

NEW ICE HOUSE.

A new ice house in the neighborhood of Lusk Reservoir is greatly needed. The most convenient site would appear to be below the dam, where the ice can be conveniently conveyed and packed by gravity.

NEW LIVERY STABLE.

The old stable is in a very bad state and unfit for its uses, besides occupying a position which is unsightly and inconvenient. All the group of buildings of which it is a part, together with the old gas works, should be removed. A new site for the stables is recommended, as shown on the flats near equipment shed. This stable is needed to provide stabling for horses of officers stationed at the Academy, in addition to its public functions.

STEAM HEATING AND ELECTRIC-LIGHT PLANT.

The installation of a steam-heating plant capable of warming the entire post would greatly simplify the problem of properly heating the public buildings, present and future, would be of the greatest comfort and convenience to all concerned, and would result in a great economy of fuel both to the Government and to the officers of the Academy. In the matter of care and repairs also, the economy of time and money would be very great.

Separate installations have been made in most of the public buildings and in some of the officers' quarters. These could readily be connected to a central system.

The enlargement of barracks necessitates the removal of the largest existing plant which has its power in a battery of boilers located in the area of barracks. As this system heats the main public buildings, its installation elsewhere might better be enlarged to supply the entire post. To this end a site should be selected central in position, giving a gravity return so far as possible, and convenient to coal supply by rail or river. Such a position is to be had on the north flat near the army service barracks. As the system of necessity contemplates a subway, this main artery should follow the highway and have subordinate offshoots to minor groups of buildings. A careful study of the conditions has resulted in the line shown on the map, and the estimates are based upon a subway at least 3 feet in the clear. As a summit level occurs near the old hospital, a pumping station would be required at this point for return.

The power house is most conveniently and economically arranged so as to permit the Hunt system for the storage of coal above the boilers, as in the case of the Havemeyer plant in Philadelphia, thus minimizing the labor and number of men required for feeding and firing.

ELECTRIC-LIGHT PLANT.

The estimates for this have been prepared by Professor Tillman and are added here in order to give the final aggregate of cost. The sight should be the same as that for the steam plant, and the power derived from a common battery of boilers, both for convenience and economy.

WATER AND SEWERAGE.

The completion of the Lusk reservoir and its supply system, although fully doubling the storage capacity of the water supply, does not solve the water problem of the post, which has been one of increasing difficulty as the consumption steadily grows greater. A large amount of available watershed runs to waste during the rainy season, and in the near future the question of the best method of impounding this supply will have to be again taken up. For the present, under normal conditions of weather, with reasonable economy the existing plant can be relied on to supply all absolute needs.

The sewer system is divided into three general drainways. The first starts from the assembly of buildings about the soldiers' hospital, follows the main road to the neighborhood of engineer barracks, passes down the slope through the buildings associated with it and on to the made ground of the West Shore Railroad, and thence to the river near the tunnel. The second takes in the row of professors' quarters facing the river, and as far as the second set south of the Superintendent's quarters, passing in rear of the first and in front of the parade group down the road to the north dock, and thence into the river at a point some 200 yards to the east. The third begins at the termination of the second in rear of officers' quarters, passes in front of barracks and down the Highland Falls road as far as the old south gate. Its outlet passes by the riding hall and empties on to the slack-water flats below the cavalry stables. This last outlet is in every way highly objectionable and dangerous to health. These mud flats are becoming each year more exposed at low tide, and already the effluvia from exposed sewage are at times very perceptible and offensive. Instead of emptying at this point the sewer should be carried down the main road past the south dock to tide water. A fourth drainway would comprehend the new quarters below the old south gate to include the artillery barracks as proposed.

THE CADET LAUNDRY.

An addition to the cadet laundry of 50 feet, with additional machinery, will be required.

THE ESTIMATES.

The estimates appended for the foregoing have been carefully considered and are based upon current prices and conditions. In many cases, notably for the steam plant and power station and supply, and

for the ironwork involved in the new riding hall and gymnasium addition, special expert estimates have been sought in addition to those made under my supervision. In the case of additions to existing buildings the record of first cost has enabled the calculations under present conditions to be made without difficulty, and with confidence in their accuracy. In the case of new married quarters the estimates are those of sets already constructed, with an allowance for changed conditions in the supply and labor market. In all other cases the estimates are based upon cubic contents and general nature of finish, or upon direct calculations of masonry walls and ironwork. Interior details and fixtures, together with plumbing and flooring, in all cases where practicable have been calculated in detail. I have sought to have the figures given represent a fair, economical, and accurate estimate of the probable cost. Some of the conditions, especially those involving excavation, are problematical and depend upon what is developed in actual work, but the estimate given is based upon past experience.

As it is impracticable as well as undesirable that the entire work of enlargement should be undertaken at once, it becomes a question of importance to decide the order of precedence of construction. The conditions of enlargement regulate this to some extent, and the interdependence of the buildings to a still greater degree. Should the enlargement of the corps cover a period of three years the first addition of one-third could with some inconvenience be accommodated in the present barracks, giving the entire year to the enlargement of barracks. As the addition to the barracks involves the removal of the present heating plant, the installation of the new of whatever character must be undertaken immediately. This, with the addition to barracks, enlargement of mess hall, building of new officers' mess, enlargement of hospital, gymnasium, laundry, and quartermaster of cadets' building, are all immediate and essential. A portion of the quarters for married officers, addition to quarters for unmarried officers, and the enlargement of camp, should also be begun the first year. The remainder of officers' quarters, the riding hall, new artillery barracks, additions to chapel, quartermaster's shops, and enlisted barracks, could await the second year. The other changes concern the general welfare of the post and should be undertaken as soon as possible.

In concluding this report I desire to express my high appreciation of the intelligence, zeal, and active cooperation of Mr. William Goding, of the Quartermaster's Department, without whose most valuable assistance the preparation of this exacting work within the limit of time imposed would have been very difficult. His practical familiarity with the details of the past construction at the Academy has been of especial value.

Very respectfully, your obedient servant,

CHARLES W. LARNED,

Professor of Drawing, United States Military Academy.

The ADJUTANT, UNITED STATES MILITARY ACADEMY.

ESTIMATES.

Alterations and repairs to present cadet barracks:

New heating apparatus	\$22,000.00
Granolithic paving and tiling for halls.....	23,000.00
Granolithic paving for basements	4,000.00
Granolithic paving for areas and draining	2,700.00
Rebuilding area walls and porch foundations.....	2,800.00
Interior repairs to walls and woodwork, including wainseoting of Keene's cement	20,000.00
Renewing floors in rooms in part.....	2,500.00
Alterations in angle divisions	1,500.00
Class rooms over sally ports.....	14,000.00
Iron stairs to basement of each division	3,200.00
	<hr/>
	95,700.00
	<hr/>

Area of cadet barracks:

Grading in earth and rock	3,000.00
8,000 square yards asphalt paving, at \$2.50	20,000.00
Water mains and sewers	2,500.00
Raising area walls at Academy.....	2,500.00
	<hr/>
	28,000.00
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Plumbing for present barracks and modifications of basement
for same, as follows:

Tiling walls, replastering ceilings, stall partitions, one divi- sion, \$2,500; same, 12½ divisions.....	31,250.00
Plumbing (one division)—	
4 bath tubs and piping, at \$75.....	\$300.00
8 shower baths and piping, at \$200	1,600.00
8 water-closets and piping, at \$60	480.00
6 urinals and stalls and piping, at \$45	270.00
Basins	75.00
4 sinks and piping (on main floors).....	215.00
Sewer and water connections.....	150.00
	<hr/>
	3,090.00

12½ divisions, \$3,090×12½ =	38,625.00
	<hr/>
	69,875.00
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Extension of cadet barracks, including corps headquarters and adminis-
tration building:

1,360,644 cubic feet, contents, at 28 cents	380,980.32
Plumbing, sewer and water connections.....	23,450.00
10,000 cubic yards rock excavation on south side of building, at \$3..	30,000.00
	<hr/>
	434,430.32
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New riding hall, 100 by 300 feet:

Preparing of site and rubble foundations.....	6,000.00
Outside stone, broken ashlar, and cut stone.....	50,000.00
Brickwork.....	14,280.00
Iron roof, with skylights and ventilators	22,000.00
Ironwork of galleries	2,500.00
Carpenter work.....	4,000.00
Painting.....	500.00
	<hr/>
1,560,000 cubic feet, at .0634+.....	99,280.00
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Chapel:

Extension 83½ feet in length, with transepts on sides 25 feet in length.. \$50,000.00

Cavalry stable and infantry drill hall, to be remodeled from present riding hall:

Removing present interior.....	350.00
New windows and doors and all cutting in masonry.....	1,900.00
Floor and joist for drill hall.....	4,968.00
Iron supporting girders and foundations.....	6,000.00
Brick paving for stable.....	4,250.00
Iron gutters and drains, mangers, and feed boxes for stalls.....	3,800.00
New tin roof.....	2,400.00
Woodwork for stalls.....	2,000.00
Painting.....	400.00
	<u>26,068.00</u>
10 per cent for contingencies.....	2,606.80
	<u>28,674.80</u>

Remodeling mess hall:

Removing and changing present windows and doors and walls of masonry.....	3,895.00
Removing partitions and floors of wood.....	400.00
New masonry and excavation.....	4,125.00
Tile flooring and wainscoting for main dining hall.....	3,700.00
Enameled brick wainscoting for kitchen.....	860.00
Iron girder supports, replacing walls removed.....	4,000.00
Carpenter work, partitions, floors, ceilings, window and door frames, new roofs, and general repairs.....	5,520.00
Plastering, including Keene's cement for kitchen.....	1,120.00
Metal ceiling in main dining room and kitchen.....	825.00
Granolithic floor for kitchen and scullery.....	1,000.00
Painting.....	800.00
Cooking apparatus and furniture.....	3,000.00
Plumbing, kitchen and scullery.....	2,500.00
	<u>31,745.00</u>
10 per cent for contingencies.....	3,174.50
	<u>34,919.50</u>

Cadet hospital:

New south wing, 73,355 cubic feet, at 35 cents.....	25,674.25
Annex in rear of above, with plumbing, 26,975 cubic feet, at 30 cents.....	8,092.50
Tile floors and walls and ceiling of Keene's cement in two wards of south wing.....	8,000.00
Tile floors, etc., as above, in one ward of the present hospital.....	4,000.00
New isolation ward in rear of the present hospital, 28 by 128 feet, 147,840 cubic feet, at 25 cents.....	36,960.00
Tilings for wards, etc., in above building.....	10,000.00
	<u>92,726.75</u>

Gymnasium:

Removing end wall of building and swimming tank and excavating.....	700.00
Concrete filling and footings for walls and swimming tank.....	1,600.00
Stone walls and cut stone.....	6,700.00
Brick walls, piers, floor arches.....	2,390.00

Gymnasium—Continued.

Enameled brick for swimming tank	\$1,425.00
Floor of asphalt, wood, and bluestone.....	760.00
Carpenter work.....	2,650.00
Ironwork of girders, floor beams, roof trusses and roof, and gallery.....	6,200.00
Steam heating and piping for tank.....	456.00
Painting.....	600.00
	<hr/>
	23,475.00
10 per cent for contingencies	2,347.50
	<hr/>
	25,822.50

Cadet quartermaster's store:

Addition, 50 by 46 feet, 103,500 cubic feet, at 20 cents.....	20,700.00
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Officers' mess:

54 by 122 feet, 263,300 cubic feet, at 30 cents.....	78,990.00
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Hotel:

Addition of wing on west end, 40 by 62 feet, 120,000 cubic feet, at 30 cents	37,200.00
Reconstruction of plumbing, annex with plumbing.....	7,000.00
Reconstruction and enlargement of north wing, 70,000 cubic feet, at 30 cents.....	21,000.00
Interior reconstruction of present building, and steam heating	25,000.00
	<hr/>
	90,200.00

Married officers' quarters:

17 sets of quarters, \$10,000 each.....	170,000.00
Grading sites in rock and earth, sewerage and pipe lines above quarters	15,000.00
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	185,000.00

Unmarried officers' quarters:

Extension of present building.....	50,000.00
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Engineer barracks, addition 33 by 75 feet:

118,800 cubic feet, at 20 cents.....	23,760.00
New plumbing and rearrangement.....	2,200.00
Alterations in present barracks.....	2,800.00
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	28,760.00

Army service barracks, addition 50 by 29 feet:

60,900 cubic feet, at 18 cents	10,962.00
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Cavalry barracks:

Addition, 54 by 107 feet, 208,000 cubic feet, at 18 cents	37,440.00
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New artillery barracks:

211,200 cubic feet, at 18 cents.....	38,016.00
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Artillery stable:

40 by — feet, 350,000 cubic feet, at 10 cents.....	35,000.00
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Artillery gun shed:

33 by 220 feet, 217,800 cubic feet, at 8 cents.....	17,424.00
Grading sites in rock and earth, sewerage and pipe lines for artillery buildings.....	5,000.00

Schoolhouse for enlisted men's children :

Excavating, concreting, and draining cellars, underpiping walls.....	\$2,870.00
Desks and seats, blackboards, and school apparatus	3,000.00
Addition of second story	6,000.00
Heating apparatus and ventilation.....	700.00
Latrine building and plumbing	1,800.00
	<u>14,370.00</u>

Schoolhouse for officers' children :

Addition	2,500.00
Latrine building, plumbing, and sewer connections.....	1,800.00
	<u>4,300.00</u>

Quartermaster's workshop :

Extension, 30 by 90 feet, 83,700 cubic feet, at 15 cents.....	12,555.00
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Quartermaster's wagon shed and storehouse :

45 by 120 feet, 145,800 cubic feet, at 10 cents.....	14,580.00
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Paint shop and lime shed :

40 by 90 feet, 54,000 cubic feet, at 10 cents	5,400.00
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Quartermaster's stables :

Extension, 50 by 40 feet.....	6,000.00
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Commissary storehouse :

40 by 120 feet, 144,000 cubic feet, at 15 cents	21,600.00
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North guardhouse :

Estimate	10,000.00
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Ice house :

Estimate	5,000.00
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Livery stable :

46 by 165 feet, 118,800 cubic feet, at 10 cents	11,880.00
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Carriage sheds, 25 by 140 feet, 70,000 cubic feet, at 8 cents	5,600.00
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17,480.00

Cadet laundry :

Addition, 50 feet in length	3,200.00
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Machinery	1,800.00
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5,000.00

For central steam-heating plant, conduits, and pipe lines for heating 120 buildings :

Central boiler house.....	35,000.00
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Chimney 200 feet high, 16 inches diameter flue	25,000.00
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Excavation in rock and earth for drain and branch pipe conduits, 23,000 feet in length	65,000.00
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Main conduit, 24 by 36 inches inside with manholes, for main supply and return pipes, 16,000 feet in length	63,000.00
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Branch conduits to buildings, 7,000 feet in length.....	12,000.00
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Five water-tube boilers, 500 horsepower, each with setting, \$10,000...	50,000.00
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Coal hoist, conveyors, and storage bins for automatic handling of coal and ashes	25,000.00
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Steam piping in boiler house, connecting to outside mains and engines, exhaust pipes, feed-water heaters, and fuel economizers, feed pumps, and connections	10,000.00
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Steam supply and return piping in conduits and branches	54,000.00
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Piping and radiators for buildings without steam-heating apparatus..	20,000.00
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For central steam-heating plant, conduits, etc.—Continued.

Expansion joints on mains, reducing and shut-off valves, traps for each building with connections \$20,000.00

379,000.00

10 per cent for contingencies 37,900.00

416,900.00

Electric-light plant (estimate by Prof. S. E. Tillman):

For brick central station, complete, to contain engine and boiler rooms, coal shed, storerooms, etc 12,000.00

Five 100-horsepower boilers 3,250.00

Two 160-horsepower engines 4,000.00

Three 75-horsepower engines 3,500.00

Three 50-kilowatt alternating current generators, complete, with exciters and switchboard 4,500.00

Two 125-kilowatt alternating current generators, complete, with exciters and switchboard 4,000.00

Setting boilers, foundations for engines, machines and pumps, feed-water apparatus, exhaust connections 6,000.00

Interior wiring, incandescent lamps, shades, and fixtures 45,000.00

Outside leading wires for all circuits 10,250.00

Vitrified clay conduit for laying leads under ground 10,000.00

Necessary transformers and motors 6,000.00

108,500.00

Extension of sewer:

Length, 1,650 feet, at \$2 3,300.00

Outlet pier 200.00

RECAPITULATION.

Cadet barracks (new and old) \$628,005.32

Cadet riding hall (new and old) 127,954.80

Cadet chapel 50,000.00

Cadet mess hall 34,919.50

Cadet hospital 92,726.75

Cadet gymnasium 25,822.50

Cadet quartermaster's store 20,700.00

980,128.87

Officers' mess 78,990.00

Hotel 90,200.00

Married officers' quarters 185,000.00

Unmarried officers' quarters 50,000.00

235,000.00

Engineer barracks 28,760.00

Army service barracks 10,962.00

Cavalry barracks 37,440.00

New artillery barracks and buildings 95,440.00

172,602.00

Schoolhouse for enlisted men's children 14,370.00

Schoolhouse for officers' children 4,300.00

18,670.00

Quartermaster's buildings 38,535.00

Commissary storehouse 21,600.00

60,135.00

Cadet laundry 5,000.00

North guardhouse 10,000.00

Ice house 5,000.00

Livery stable 17,480.00

37,480.00

Enlargement of camp.....	\$10,000.00	
Extension of sewer.....	3,500.00	
		\$13,500.00
Steam heating plant and connections.....	416,900.00	
Electric plant and connections.....	108,500.00	
		525,400.00
Grand total.....		2,212,105.87

CONCLUSIONS AND RECOMMENDATIONS.

As the result of their investigations and observations, and from the very full information the board has obtained, the following conclusions and recommendations have been arrived at:

First. The Military Academy has facilities for education and military training in excess of the present quota of cadets.

Second. The number of cadets should at once be increased to a minimum of five hundred. In order to accomplish this there should be an increase of appointments in excess of that number, to provide for unavoidable vacancies.

Third. The standard of admission and graduation should be maintained at the highest possible maximum, in order that the service should obtain the most competent officers.

Fourth. A probationary class should be added to the corps, to secure the admission of those candidates who, while possessing the necessary aptitude, lack the early training essential to success.

Fifth. The extension and completion of the quadrangle of the cadet barracks.

Sixth. The extension of the soldiers' quarters to provide for the number now stationed at West Point.

Seventh. The rearrangement of the cadet mess hall, so that the entire building shall be devoted to that purpose.

Eighth. The construction of quarters for unmarried officers and an officers' mess, to take the place of the space thus added to the cadets' mess.

Ninth. The remodeling of the hotel building in order to provide the necessary sanitary improvements and the construction of a more substantial building in the place of the temporary extension now in use.

Tenth. The improvement of the light in the cadet barracks and the substitution of one more steady, and, therefore, less trying to the eyesight, and having a better illuminating power.

Eleventh. The cadet hospital should be completed in accordance with the original plan, including the isolation ward, and the soldiers' hospital be placed in repair in accordance with the recommendation of the committee on hygiene; also, a course of lectures on military hygiene should be added to the curriculum, under charge of the senior surgeon at the post.

Twelfth. All the buildings, some of them mere temporary expedients, now used for the minor purposes of the Academy, should be made to

conform to the modern system of sanitation and other essential conveniences, and, where necessary, should be enlarged to suitable dimensions or replaced by more substantial structures.

Finally, the Board of Visitors recognize the fact that within a recent period there has been inaugurated a system of academic extension under which has been established at certain Government stations post-graduate schools for practical and higher instruction in engineering, artillery, cavalry, and infantry, notably at Willets Point, Fort Monroe, and Fort Leavenworth. While not within the province of this Board, they are nevertheless the essential outcome of the course of instruction this board is called upon to review. Therefore the Board in expressing its highest commendation of this academic extension feel it quite within the purview of their examination of the Military Academy that there shall also be established as an additional feature of this academic extension, within the recently acquired addition to the scholastic area of the Academy, a "War College" for practical instruction of graduates of the Academy in staff duties and strategic operations on a large scale. It is at such a college that the information and experiences of the military attachés to foreign courts may be made of lasting benefit through oral instruction and object lessons. The Board does not feel it necessary to enlarge upon the details of this recommendation, but its importance can not be overestimated. Those officers who possess qualifications for attaining the highest excellence in the profession of arms should be selected for attendance at the "War College."

EGBERT L. VIELE, *President,*

W. D. MANN,

FELIX AGNUS,

THOMAS W. BRADLEY,

FRANCIS G. CAFFEY,

J. SUMNER ROGERS,

J. WILLIAM WHITE,

BENJAMIN F. MARSH,

JACOB H. BROMWELL,

THOMAS M. JETT, *Secretary,*

Board of Visitors.

REPORT OF THE COMMITTEE ON HYGIENE, ATHLETICS, AND LIGHTS.

The following is the report of the committee on hygiene, athletics, and lights, submitted by Dr. White, the chairman of the committee:

WEST POINT, *June 8, 1899.*

To the Board of Visitors of the United States Military Academy.

GENTLEMEN: Your committee on hygiene, athletics, and lights have endeavored to take a comprehensive view of their duties, and have included in their investigations the general condition of health throughout the post, all the circumstances which could influence it

favorably or otherwise, and such academic questions as seem to have a bearing on the preservation of good health by the officers after graduation and the avoidance of disease among the men who will constitute their commands.

The general sanitary conditions are undoubtedly good. No cases of typhoid, of diphtheria, or of any disease favored by defective sanitation have occurred during the last year. The records of the post as to tuberculosis, which the committee have had compiled for the years 1890 to 1898, inclusive, also show a remarkably small percentage of cases developing at the Academy. These facts seem to demonstrate that as regards the essentials the general hygiene of the post is already well cared for.

The conditions of the two hospitals in particular was especially investigated, and as a result the committee begs to offer the following recommendations:

ADDITIONS AND REPAIRS NEEDED AT THE CADET HOSPITAL.

1. The completion of the hospital by the construction of the south wing originally contemplated, which will make the building symmetrical and give much-needed room. The building as planned consisted of a central portion, devoted to administrative functions, with a north and south wing containing two wards each. The north ward only was built. The upper ward of the new wing should be made into an aseptic ward for the care of cases after operation, together with a room for the administration of anæsthetics. There is now no place for properly caring for such cases. In evidence of the necessity for such increased accommodations it may be mentioned that since December 5, 1898, Major Bannister, surgeon U. S. A., surgeon of the Academy, has performed the following operations in the cadet hospital, viz:

Four operations for the radical cure of hernia (or rupture), serious abdominal operations; two operations for the radical cure of varicocele by the aseptic high open method; one operation for the radical cure of hydrocele by Volkmann's method; and seven ophthalmic operations. Every operation has proved a success, and the young men operated upon have been preserved for the military service, this being especially true in the cases of hernia, of varicocele, and of hydrocele. Although success followed these operations, yet it must be admitted that they were treated at a great disadvantage, and aseptic results were secured in very improper surroundings. An aseptic surgical ward is essential for such practice, and can only be secured by building the south wing. To construct this two-story wing (similar to the north wing) of stone, with brick addition in the rear for water-closets and bathrooms, will cost about \$75,000.

2. Another absolute necessity at this hospital is an isolation ward for the treatment of infectious diseases. At present there is no room for this purpose, and the need of one is evident. If an epidemic of diphtheria, scarlet fever, measles, or other serious contagious disease should

invade the corps of cadets disastrous results might follow. Measles is now epidemic in this vicinity, and there are about sixteen or seventeen cases at West Point, the disease being confined so far to the families of enlisted men. Every effort has been made by the Superintendent of the Academy and the surgeon to protect the corps of cadets, and so far it has escaped. The disease may, however, attack the cadets any day, and the surgeon will be placed at the serious disadvantage of having to place these cases in the general wards. If the new wing is constructed the upper ward in the north wing might, as a makeshift, be converted into an isolation ward. It would be far better, however, to build in the rear of the cadet hospital a separate building for such cases as those mentioned, for which purpose about \$10,000 would be required.

3. Metal ceilings are needed in the steward's room, steward's office, and in the three wards of the hospital; also in the nurses' dormitory.

ADDITIONS AND REPAIRS NEEDED AT THE SOLDIERS' HOSPITAL.

1. A new floor, constructed of tiling and cement, is needed in the operating room in this hospital. The present floor is composed of planking, and should be replaced by the tiled floor. Since the arrival of the present surgeon (October 27, 1898) the following operations have been performed at the soldiers' hospital, viz:

Four operations for the radical cure of hernia, making, in addition to the four operations performed at the cadet hospital, eight successful hernia operations performed at West Point since December 5 last; one amputation of the leg just below the knee for senile gangrene of the foot; one operation for excision of the inguinal lymphatic glands, and one operation for the radical cure of varicocele by the aseptic high open method. All of these operations were successful. It has recently become the custom for the authorities to order persons in the military service to West Point for surgical treatment at the hands of the senior surgeon, and hence it is evident that proper facilities should be furnished him.

2. Metal ceilings should be provided in the two wards at this hospital and in the surgeon's office and dispensary. The plastering in the wards needs frequent patching, and is unsightly in consequence.

3. The north ward at the soldiers' hospital should be heated by steam. At present it is heated by a large unsightly stove. The south ward is heated by steam at present. It will require \$350 for this purpose.

4. A porcelain sink with modern plumbing is needed in the hall near the operating room, where the surgeons are required to wash their hands preparatory to operating.

The question of the establishment of a systematic and sufficient course of instruction in military hygiene has received the special attention of the committee. It is not, of course, a new line of thought. For many years army surgeons have been obliged by regulations to instruct the enlisted men in the elementary principles of first aid to and transportation of the sick and injured. But it is of obviously greater importance

that those who command should be familiar with the laws of health as applied both to the individual and to bodies of troops under the varying conditions of military service.

Some of the most important arguments in favor of this view are contained in the subjoined extracts from official documents:

EXTRACTS FROM COMMUNICATIONS, RECOMMENDING THAT MILITARY HYGIENE BE TAUGHT AT THE UNITED STATES MILITARY ACADEMY.

SURGEON-GENERAL'S OFFICE,
Washington, May 23, 1891.

The SECRETARY OF WAR:

The teaching of physiology at the Military Academy at West Point is of the most elementary character, and it would seem that the act of Congress approved May 20, 1886, warrants its extension to include physical training, now recognized by all the great universities and colleges of this country as an important branch of that science; I can not learn that the study of hygiene, provided for in that act, is taught at the Academy.

In order that instruction in these important branches may be properly given, I respectfully suggest that steps be taken to obtain the necessary authority from Congress for the appointment of a professor of physiology, hygiene, and physical training at the Military Academy at West Point. This was done in connection with the department of law by a proviso in the Military Academy bill approved June 1, 1880, "that the Secretary of War may, in his discretion, assign any officer of the Army as professor of law."

CHAS. R. GREENLEAF,
Lieutenant-Colonel and Assistant Medical Purveyor, U. S. A.

SURGEON-GENERAL'S OFFICE,
Washington, January 27, 1892.

The SECRETARY OF WAR:

Referring to correspondence with the honorable Secretary of War of May 23, 1891, on the subject of instruction of army officers in military hygiene, and to his action thereon, I have the honor to recommend that the matter be submitted to the Speaker of the House of Representatives, with a view of such action by Congress as may be considered necessary in securing systematic instruction in this essential department to the cadets of the United States Military Academy, West Point, N. Y.

The subject has received the official sanction of the Hon. Mr. Proctor, late Secretary of War, and by his order military hygiene is taught now in the post-graduate schools of Fort Leavenworth, Kans., and Fort Monroe, Va., by a medical officer who is a member of the academic staff at these institutions. It is likewise taught at the Naval Academy at Annapolis, Md., by medical officers of the Navy, the senior officer being a member of the academic board, and as such the head of the "Department of physiology and hygiene."

C. SUTHERLAND,
Surgeon-General U. S. A.

Forwarded to United States Senate January 30, 1892, with the following remark:

I beg to commend to favorable legislation the suggestion made by the Surgeon-General.

S. B. ELKINS, *Secretary of War.*

SURGEON-GENERAL'S OFFICE,
Washington, February 17, 1893.

Hon. SHELBY M. CULLOM, *Washington* :

The Medical Department of the Army has also among its stores or can purchase from its own appropriations the necessary books, charts, and appliances for the use of the professor in his instruction, thus rendering unnecessary any expense for this purpose in the Military Academy appropriation.

The hospital department at the Military Academy affords the necessary personnel in the way of enlisted men who may possibly be required, making unnecessary any expense in that direction. In fact, I can state positively that beyond a few hundred dollars that might be required, and even this is doubtful, as above stated, the adoption of the proviso in question will not involve a particle of expense to the Government. * * * The teaching of military hygiene in military schools has passed the experimental stage, a similar professorship having been for several years established at the Naval Academy at Annapolis, and for the last two years at the schools at Fort Leavenworth, Kans., and Fort Monroe, Va., with results that have been eminently satisfactory to the naval and military authorities. * * * It has received the official sanction, on two occasions, of the Secretary of War. * * *

C. SUTHERLAND,
Surgeon-General U. S. A.

[Extract from a letter of the Surgeon-General to the Chairman of the Senate Committee on Military Affairs, under date of January 27, 1892.]

Military hygiene represents, comprehensively, the subjects of shelter, including heating and ventilation, water supply, disposal of sewage, food, clothing, and physical training, as they relate to the welfare of troops, both in peace and war, and is not, as is sometimes misconceived, merely the professional oversight of the Army; it is a breach of the general art of war, second only in importance to the special art of war itself, and therefore should be taught, and taught thoroughly, at the principal military school of the land; its importance in military life depends upon the fact that every detail of that life is so carefully regulated that all soldiers, and most officers, have no free will under the conditions in which they live, and errors are not only disastrous to the individuals involved but costly to the public; it is equal in value to any other one subject, and intrinsically it deserves as much consideration; it should have an independent position, be admitted as a necessary and important part of the curriculum, and be taught by a selected officer capable of presenting it in an attractive and impressive form, a knowledge of the subject being made an obligatory for graduation, as that of any other branch of military science.

In a communication sent to Senator Proctor on January 30, 1892, Mr. S. B. Elkins, Secretary of War, commended to favorable legislation the suggestion made by the Surgeon-General in the foregoing letter.

In 1894 Major Harvey, United States Army, then surgeon at this post, summarized as follows some of the arguments in favor of the establishment of such a course of instruction as we are discussing:

Military hygiene is not a new science. Its beginnings are to be found in the dawn of medicine; but notwithstanding its established importance in the promotion of military efficiency, the combatant officer of our Army has never been taught to regard it as a necessary part of his military education. He is instructed in law, chemistry, mineralogy, geology, philosophy, French, Spanish, drawing, astronomy, and other sciences, more or less opposite to the profession of arms, but there has never been any serious attempt to teach him the practical principles of sanitary science even in their elementary form, so that he will understand what is necessary to do to preserve the health of his command and keep it at its highest state of effectiveness. He is taught

the duties of every other staff corps of the Army, but remains ignorant, unless self-taught, of the art of fighting the most deadly enemy of armies—disease.

One who commands should know the rationale upon which opinions and actions are based in all departments of his command. Ignorance in any particular endangers proportionally his ability to exercise an intelligent supervision over all.

If it is acknowledged that this instruction is a necessary part of the education of an army officer, the proper time to instill it is during the academic course, when one instructor will suffice. If postponed for a post-graduate course there would have to be four instructors at least, one each at the infantry, cavalry, artillery, and engineer schools.

Disease has always claimed three to ten times more victims in war than the shot and shell of the enemy. * * *

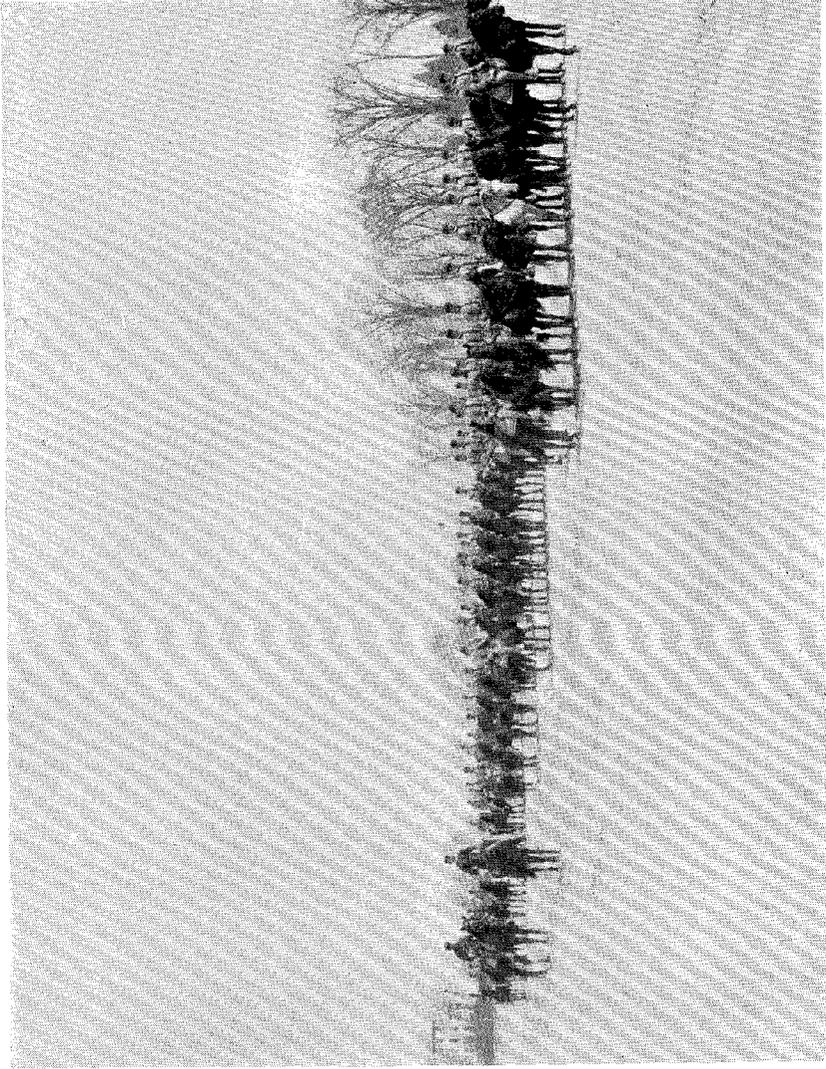
Although medical officers have struggled valiantly with the problem of sanitation, they need the intelligent assistance of their nonmedical brethren of the line to attain the perfect results they so ardently desire.

At the Naval Academy a chair of hygiene and first aid was established some years ago, Surgeon Byer holding this chair and supervising also the physical training of the cadets. The instruction has been productive of the most satisfactory results. Throughout the civilized world the importance of this instruction is being recognized, and its benefits in every direction can not be overestimated.

The Board of Visitors of that year fully indorsed the views of Major Harvey and argued further in support of the establishment of such a chair, to the effect that the mere rudiments of hygiene in relation only to personal health can not be acquired by the cadets in so short a course as was then, and is now, given at the Academy (ten hours altogether of lectures and recitations); and when, in addition, the important questions of the proper or improper feeding, clothing, housing, and physical training of the soldiers in peace, and during the exigencies of war the prevalence and prevention of disease, which makes far greater inroads upon the effective sanitary strength of an army than do the shot and shell of the enemy, and the complicated problems of the effective yet practicable sanitation of barracks and camps are considered, thorough instruction in this department is seen to be not only desirable but urgent, and, in fact, necessary. The report of the committee of that year proceeded:

Though some instruction is given in sanitation at posts of instruction after graduation, yet so far as the committee can learn there is no complete course given at any of these posts, nor is it given at each of such post-graduate schools, nor are all of the cadets invariably after graduation sent to one of these. Here is the only place at which all of them can acquire any knowledge of this subject of vital importance to the Army, especially when in actual service.

The sanitation of armies during war is not merely a medical question. However desirable the medical requirements may be, military necessities may make it needful to disregard them, even at a serious risk to the health of the Army. But in probably the majority of cases this is not true, and when not so, the importance of the proper location and sanitation of camps and barracks, and of those medical precautions which may be highly conducive to the health and therefore to the success of an army, should be fully understood by the officers of the staff and line, so that they may appreciate their stringent necessity and act in accordance with them, instead of inviting disaster by their violation. This violation will be none the less injurious or even fatal to the military success of an army because it is committed unintentionally and purely from ignorance of the laws of health, for these laws require obedience and enforce their own penalties as rigidly as the laws governing military operations themselves. * * *



CAVALRY—COLUMN OF PLATOONS.

Instruction in hygiene is technical, and in the opinion of the committee should be given by the senior medical officer of the post, as the surgeons are the only officers who are fully fitted for these duties. In the Naval Academy such a chair has been established and is filled by a surgeon, and the Army should not be behind the Navy in this important practical as well as scientific study.

The American Medical Association, representing the profession of the entire country, has recently (June 7, 1899) unanimously recommended "that a professor of military hygiene be appointed at West Point to instruct the cadets in the principles of sanitation," and resolved that a committee be appointed to wait upon and present this and other resolutions to the President of the United States for his favorable consideration.

In the opinion of your committee no further argument is needed to make clear the great desirability of the establishment of such a course of instruction, but it may serve to give more definiteness to what has gone before if we submit an outline of a course on hygiene so as to indicate both the ground which should be covered and the necessity for placing the subject in the hands of an army medical officer, rather than as at present having the little that is taught tacked on to the excellent and valuable course of the professor of chemistry, geology, etc.

SYNOPSIS OF A PROPOSED COURSE OF LECTURES ON MILITARY HYGIENE.

Lecture I.—Explanation of the practical importance of preventive sanitation as applied to the individual or to military bodies—in itself a concise definition of military hygiene.

Lecture II.—The individual. The selection of the recruit; giving the reasons for a standard and the common causes of rejection.

Lecture III.—Posts or garrisons. The precautions to be taken in the selection of sites for permanent posts. Points to be considered: Neighborhood of marshes; prevailing winds; extremes of temperature; rainfall; soil; air; water; kind and quality of water supply; disposal of waste; water carriage; dry-air treatment of dejecta; cremation of garbage.

Lecture IV.—Barracks and quarters. Material; arrangement; division of space; air allowance and renewal; heating; lighting; plumbing.

Lecture V.—Camps. Arrangement of temporary and semipermanent camps; area to be occupied per 1,000 of population; selection of site in relation to soil; trees; exposure; water supply and disposal of waste; necessity of constant and intelligent supervision; latrines; disposition of garbage.

Lecture VI.—Illustration of good and bad sites. Good and faulty management, and the results of neglect or ignorance. (The lessons easily gathered from the records of the late Hispano-American war are much to the point at present.)

Lecture VII.—Marches. Special precautions to secure and maintain endurance; temperance; food; drink; clothing; shoes; socks; care of feet.

Lecture VIII.—Rations. Food values and the kind of food suited to different climates and to different kinds of work; the emergency ration; cooking.

Lecture IX.—Water. Ready means for estimating the palatability of water; kinds of impurity; means of correction; boiling; filtration.

Lecture X.—Clothing. Reasons for selection of different materials; importance of comfort in; cleanliness of; shoes and necessity for ease, pliability, and waterproofing.

Lecture XI.—Athletic exercises. Value and limitation of; necessity of trained supervision; special danger of; temperance in.

Lecture XII.—General diseases of soldiers. Diseases due to improper food and cooking; to unwholesome water; to contaminated air.

Lecture XIII.—Special diseases of soldiers. The diseases to be guarded against in camps of raw levies; unseasoned men, such as our recent volunteer regiments; precautions to begin with the recruit, to follow through the organization in State or temporary camps, in transportation, in the camps of instruction, and in the field; vaccination; contagious diseases common to war camps.

Lecture XIV.—A nontechnical discussion of the disease statistics of the late war as emphasizing the necessity for these precautions and for preventive sanitation.

Lecture XV.—An account of the more important diseases met with in the Tropics—yellow fever, dysentery, leprosy, bubonic plague.

Lecture XVI.—Reassert the great and essential importance of an elementary knowledge of hygiene as applied to military bodies, and illustrate from history the destruction of large and small forces, and the constant impairment of all military strength from diseases which can and should be prevented.

Some of these lectures may prove too long for the complete understanding of the subject, so that it is prudent to allow at least 18 lectures of an hour each for the proper presentation of military hygiene.

Should the subject of elementary first aid and swift transport of the sick and wounded by litter or bearer be added to this course (which we advocate), 8 more lectures or demonstrations will be needed, which will make a total of 26 in all. The instruction should, in our opinion, be given to the first class only, and field trials in first aid and litter service should be given at least twice in the year; the last may advantageously be combined with the exhibition of attack and defense.

We believe that to insure effectiveness in all this it would be best to establish a chair of military hygiene, and to direct that it be filled by the senior surgeon on duty at the United States Military Academy, who should then be given the temporary rank and pay of lieutenant-colonel.

The question of lighting engaged the serious attention of the committee. The gas in the barracks seemed to be of inferior quality, the pressure irregular and unequal, and the burners now in use antiquated. That the natural results of such a state of affairs are following, the subjoined communication from Major Bannister would seem to demonstrate:

UNITED STATES MILITARY ACADEMY,
SURGEON'S OFFICE, CADET HOSPITAL,
West Point, N. Y., June 4, 1899.

To the Chairman of the Committee on Hygiene, etc., of the Board of Visitors to the United States Military Academy.

SIR: Referring to your request for information relative to the existence of asthenopia, or eye strain, among the members of the corps of cadets, I have the honor to state that since my arrival at West Point, in October, 1898, I have been called upon to treat 58 cadets for this ocular condition. In these 58 cases the following refractive conditions were found to exist:

	Cases.
Hypermetropia	7
Myopia (near sight).....	5
Simple hypermetropic astigmatism	9
Compound hypermetropic astigmatism	11
Compound myopic astigmatism.....	6
Mixed astigmatism.....	2
Hypermetropia in one eye, compound hypermetropic astigmatism in the other...	2

	Cases.
Hypermetropia in one eye, simple hypermetropic astigmatism in the other	1
Myopia in one eye, compound myopic astigmatism in the other.....	3
Compound myopic astigmatism in one eye, simple myopic astigmatism in the other	1
Simple hypermetropic astigmatism in one eye, compound hypermetropic astigmatism in the other.....	2
Mixed astigmatism in one eye, compound myopic astigmatism in the other.....	1
Emmetropia in one eye, simple myopic astigmatism in the other.....	1
Emmetropia in one eye, compound hypermetropic astigmatism in the other.....	1
Mixed astigmatism in one eye, compound hypermetropic astigmatism in the other	1
Asthenopia without error of refraction.....	5
Total	58

In short, about 18 per cent of the cadets present have suffered from eye strain during the past seven months. The cadets suffering from the consequences of uncorrected refractive error have been provided with glasses corrective of such errors, and with three exceptions have, with such assistance, been able to study in comfort. Three of these refractive cases suffered at the same time from hyperæsthesia of the retina, which necessitated the giving up of study, and these cadets were granted leave of absence on this account, and are still absent.

It is a self-evident proposition that none of the cadets affected with hypermetropia, or hypermetropic astigmatism, acquired said defects at the Military Academy. These refractive errors were without doubt congenital. The cases of myopia (near sight) and myopic astigmatism may have been increased in degree from the exacting use of the eyes after a longer or shorter stay at the Academy.

Close and exacting use of the eyes in the case of young persons, especially when coupled with faulty illumination, is responsible for the occurrence of myopia or near sight. I attribute the large proportion of cases of eye strain in the corps of cadets to the following causes, viz:

1. Exacting use of the eyes in study, with the result that these organs become tired out from excessive exercise of function, even when there may be no refractive error of consequence.
2. Such use with an existing uncorrected error of refraction, which latter condition throws an additional burden upon the flagging accommodative powers.
3. Improper illumination in many cases.

Cases falling under the first head (that is, ocular fatigue resulting from excessive use without error of refraction) can not well be avoided. They are few in number, however, there having been only five cases of this type occurring here in the past seven months.

Cases properly included under the second head, or under the second and third heads combined, constitute the immense majority of all cases of eye strain. These cases can be successfully treated by properly correcting the refraction with the required lenses and by improving the lighting of the rooms in cadet barracks. In my opinion, the present overhead illumination should be dispensed with, and a standing droplight with Welsbach burners and green porcelain shades substituted. One such burner will be sufficient for each room, and will give a light far superior to that afforded by the present method, while using one-fourth of the amount of gas expended by the system in vogue. Moreover, much less carbon dioxide gas will be generated by the Welsbach burner to vitiate the atmosphere of the room than will be the case with the present number of ordinary burners.

Very respectfully,

J. M. BANNISTER,
Major and Surgeon, U. S. A., Surgeon.

The committee believe that when the subject of ventilation is taken into account with that of lighting, the advantage of an electric plant for the barracks and as many of the other buildings as possible will be found to be unmistakable. But if there is any great delay about obtaining this, the substitution of Welsbach burners for those now in use would work a great improvement. It must be remembered that eye strain means brain strain, and that it is quite possible that a not inconsiderable proportion of the men now found deficient and discharged from the Academy may owe their failure to the conditions (as to light) under which they were compelled to study.

The athletics of the Academy, including the purely military athletics, the gymnastics, and the competitive sports, are in a most satisfactory and gratifying condition. They are sufficient without being excessive, are well graded so as to develop the cadet in proper and necessary directions, are obviously productive of health as well as of strength, and—best of all, perhaps—are of a character that conduces to mental quickness, alertness, and decision, as well as to fortitude, obedience, and good discipline.

In this relation the committee takes occasion to express its gratification at the resumption of the friendly games of football between this institution and the Naval Academy, brought about on the initiative of its chairman and already unanimously approved by the Board of Visitors.

The register of cadets shows that the academic standing of the football players is somewhat above the average of their fellows, and there seems no reason to doubt that in other respects they are greatly the gainers by participation in this manly sport.

Governor Roosevelt, during his recent visit here, assured the chairman of this committee that he had had in the recent war most unmistakable evidence of the increased efficiency given to the soldier by previous participation in that and in kindred sports. They should certainly be warmly supported and encouraged here, and there is every likelihood that they will be, as the officers of the post are, almost without exception, enthusiastic believers in both their physical and their educational value. Mr. Koehler, the instructor in gymnastics, who has served the institution so faithfully for so many years, should, in the opinion of the committee, be given the rank of first lieutenant. He commands the cadets and he should do so, as do all others who command them, with the authority of the President and Congress back of him. A trial of fifteen years has demonstrated not only his capacity and his industry, but has shown also that he has the personal qualities which make him a desirable addition to the list of officers of our Army.

The superintendents of this post have repeatedly made this recommendation, and we believe that it can only be through oversight that it has not been favorably acted on earlier.

WILLIAM WHITE, M. D.,
Chairman.

REPORT OF THE COMMITTEE ON FISCAL AFFAIRS.

[Col. W. D. MANN, *Chairman*.]

The committee on fiscal affairs, supplies, and expenditures respectfully submit the following:

In view of the fact that the officer responsible for the finances, supplies, and expenditures of cadets, Maj. Charles B. Hall, Second United States Infantry, treasurer of the Military Academy, quartermaster and commissary of cadets, was serving his first year of this detail, and that he had succeeded an able officer who had been for many years in this position, the committee felt that it would be of interest to make more than ordinary, careful, thorough, and complete investigation of all matters pertaining to the highly important duties of this office. The committee devoted a good part of the time of the visit of the board to the Academy to this duty. Throughout it received the most hearty assistance from Major Hall, and every facility was afforded it through his own exertions and the aid of his clerks and assistants to the end that every detail should be made clear. The various money accounts, and the system of keeping the same, were examined minutely and found to be accurate and in perfect order. The duties of this office practically involve banking and the keeping of a general store. The treasurer receives and is responsible for the original deposit of \$100 required from each cadet on entering the Academy, and the monthly pay of the cadets. He is also custodian of the funds accumulated as a result of the operations of the store and supply department. These funds were found to be all intact, and either in bank in the subtreasury at New York or invested in Government bonds. The treasurer's books balanced, and every dollar was properly accounted for.

It was noted that at previous periods since the establishment of this supply department there had accumulated apparent profits from the storekeeping to such an amount that the board of control had deemed it wise to invest \$20,000 in Government securities and to designate it as a trust fund. As this was clearly the result of savings and the profits in the handling of cadet supplies, it was in no sense a trust fund, but simply a reserve and surplus capital for use at any time when necessary in the conduct of the business of the store. The possession of capital of the store department, in gross amount some \$40,000, enables the officer in charge to purchase his supplies in more ample quantities and to pay for them in spot cash, thus securing the advantage of the lowest prices and all possible discounts. The fund is believed to be no larger than is necessary for this purpose, and the only suggestion made by the committee was that on the books of the treasurer the fund known as "trust fund" should be carried in future as "reserve fund." Briefly, the financial affairs of this department of the Academy were found in perfect order, the books of account systematically and neatly kept, and the chief accountant, Mr. J. E. Wilson, an old employee, an efficient and reliable man. In view of the long service,

the very important duties devolving upon this employee, and his recognized efficiency, the board finds that his salary is quite inadequate and should be materially augmented.

In the matter of supplies, a careful examination of every article, food and commissary supplies, clothing and other quartermaster supplies, was made and found to be of excellent quality, and well suited to the wants of the cadets. The prices paid, as compared with prices paid in private trade, were found to be exceedingly reasonable. The storehouse, which seems ample in capacity and arrangements, was in neat order, the storekeeper an efficient man, the supplies properly guarded and conserved, the inventories, stock ledger, and accounts generally, correct. The committee noticed a considerable quantity of text-books on hand which, upon inquiry, it was learned had become obsolete. It was found that the purchase of these text-books has been charged to the supply account, and in consequence the loss from the books being no longer used falls upon the store, and ultimately upon the cadets. It seems plain to the committee that text-books and instruments for the use of cadets in the prosecution of their studies, and which, from their very nature are expensive, should be supplied from an appropriation rather than charged to the cadets, and this is earnestly recommended. It may, perhaps, be proper herewith to make note of sundry charges which fall upon the cadets that, in the opinion of the committee, should be covered by the appropriation. Theoretically, and as generally understood by the public, a cadet at West Point receives his education free and gets the pay of \$45 per month and quarters. He is popularly supposed from this sum to be called upon simply to provide his clothing and his board, which are furnished at cost price. If this were true, the condition of the cadet would not be intolerable. Close inquiry shows that there are a number of petty charges, necessary under the regulations, but which, in the opinion of the committee, should be provided for in the general appropriation—notably, the charge for lighting; the charge for cleaning, scrubbing, and care of the barracks; charge for hospital; charges for furniture for the cadet's room, and the charges for text-books, ink, pens, pencils, and instruments. When a cadet arrives at the Academy he is assigned an account book, and the first charge that is made against him is 60 cents for this book, in which the Government keeps his account. It may be interesting to enumerate the items found on the first page of one of these books, charged to a cadet on the day of his entry to the Academy:

Account book	\$0.60	Belts (12)	\$4.32
Blankets	3.42	Two clothes bags .....	.80
Chair	1.63	Envelopes and paper	1.05
Two comfortables	4.96	Indelible ink .....	.15
Mattress	8.06	Writing ink .....	.24
Pillow	2.03	Letter paper .....	.10
Four pillowcases .....	.44	Mug .....	.07
Four sheets	1.20	Soap	12

Soap dish	\$0.08	Four coat hangers	\$0.28
Tumbler .....	.03	Bottle mueilage .....	.10
Penholder .....	.07	Clock .....	.95
Pens .....	.04	Two buckets .....	.96
Inkstand .....	.27	Broom .....	.20
Dipper .....	.20		

We then find a little farther along, at the end of the first month, that he is charged for—

Policing (cleaning) barracks and baths	\$2.67
Gas fund .....	.70
Hospital	1.36
Athletic association	1.25
Oath .....	.25

(This is the oath to serve his country loyally and faithfully that the cadet is required to take on entering the Academy.)

The committee beg to submit that every one of the above items should be, and by the public are supposed to be, furnished the cadets by the Government. While the charges for furniture will generally occur but once during the term at the Academy, the charges for hospital, policing barracks, athletic association (this is for physical training, which is as necessary a part of the education of a soldier as books or tactics), lighting (gas fund), occur every month throughout the four years of cadetship. Previous committees have called attention to the item of \$4 per month which is set aside and retained by the treasurer of the Academy until the end of the cadet's term, to be then turned over to the graduate for his first outfit as an officer. It is possible that half a century ago, when prices were very different from what they now are, this sum was barely sufficient to procure the most necessary and immediate outfit of a young officer, uniform, etc.; to-day it is lamentably inadequate. It amounts to less than \$200. In common decency, to enable a graduate to procure the necessary clothing, full uniform, sword, citizen's suit, trunk, and such articles as are required in casting off his cadet outfit, with a reasonable sum of money to take himself to his station or to his home pending his usual leave and before he can draw any pay as an officer, at least double this amount is needed. It would be well if \$10 per month throughout the cadet's term could be retained for this purpose. This is impossible with the present pay of cadets subject to the many charges under the regulations. The committee beg to strongly recommend that, as a partial alleviation, there should be allowed to each cadet one ration, to be either drawn in kind by the commissary of cadets or commuted at travel rate as in his judgment would best serve the interest of the cadet.

This ration is allowed to naval cadets and should be to those of the Army. If this be done and the various petty charges above alluded to are relieved by being met from an appropriation, it will be possible for \$10 per month to be retained from the cadet's pay to meet his expenses following graduation.

The committee made a careful inspection of the laundry and its system of working and charges. Owing to the character of dress of the cadet "laundering" is an important item in his expenses. The building and machinery were found to be fairly modern and economical in working, the detail, management, and discipline good, the work turned out in good condition, and the cost to the cadet as moderate as is probably possible. The arrangements for feeding cadets—kitchens, refrigerators, store closets, etc.—are well appointed, and conducted cleanly and efficiently. The food seems fairly varied, and examinations, as well as tests of eating, made by the committee in dining, breakfasting, and supping at cadets' tables, prove that the cooking and service are good. The dining hall is not large enough, and immediate steps should be taken to enlarge it by removing the officers' mess from one end of the building and the officers' quarters from the other. In the opinion of the committee the duty devolving upon the commissary and quartermaster of cadets is one of the most difficult and arduous that ever falls to an Army officer. The remarkable record of great efficiency and success made by the long incumbent of this post, Capt. and Maj. William F. Spurgin, while placing the department under system and good order for his successor, still made it the more difficult for that successor to so perform his work that there should be no invidious comparison.

The committee deems it but proper to say that in Maj. Charles B. Hall the Academy has a most satisfactory and able detail to this duty.

W. D. MANN,
THOS. W. BRADLEY,
FELIX AGNUS,

Committee.

INFORMATION RELATIVE TO THE APPOINTMENT AND ADMISSION OF CADETS TO THE UNITED STATES MILITARY ACADEMY.

APPOINTMENTS.

How made.—Each Congressional district and Territory—also the District of Columbia—is entitled to have one cadet at the Academy. Twenty are also appointed at large. The appointments (except those at large) are made by the Secretary of War at the request of the Representative or Delegate in Congress from the district or Territory; and the person appointed must be an actual resident of the district or Territory from which the appointment is made. The appointments at large are specially conferred by the President of the United States.

Manner of making applications.—Applications can be made at any time, by letter to the Secretary of War, to have the name of applicant placed upon the register so that it may be furnished to the proper Representative or Delegate, when a vacancy occurs. The applications must exhibit the full name, date of birth, and permanent abode of the applicant, with the number of the Congressional district in which his residence is situated.

Date of appointments.—Appointments are required by law to be made one year in advance of the date of admission, except in cases where, by reason of death or other cause, a vacancy occurs which can not be provided for by such appointment in advance. These vacancies are filled in time for the next annual examination.

Alternates.—The Representative or Delegate in Congress may nominate a legally qualified second candidate, to be designated the alternate. The alternate will

receive from the War Department a letter of appointment, and will be examined at the same time as the regular appointee, and if duly qualified will be admitted to the Academy in the event of the failure of the principal to pass the prescribed preliminary examinations. The alternate will not be allowed to defer his reporting at West Point for examination until the result of the examination of the regular appointee is known, but must report at the time designated in his letter of appointment. The alternate, like the nominee, should be designated as nearly one year in advance of date of admission as possible.

ADMISSION OF CADETS.

Candidates selected by the War Department shall be instructed to appear for mental and physical examination before boards of army officers to be convened at such places as the War Department may select, on the 1st day of March annually (except when that day comes on Sunday, in which case the examination will commence on the following Tuesday). The candidates who pass successfully will be admitted to the Academy in the following June.

Candidates selected to fill the vacancies unprovided for at the examinations held in March will be instructed to report at West Point for mental and physical examination early in June. No candidate will be examined at any other time, unless prevented from presenting himself by sickness or some other unavoidable cause, in which case he will be examined during the last week in August.

Immediately after reporting to the Superintendent for admission, and before receiving his warrant of appointment, the candidate is required to sign an engagement for service in the following form, in the presence of the Superintendent or of some officer deputed by him:

"I, _____, of the State (or Territory) of _____, aged _____ years _____ months, do hereby engage (with the consent of my parent or guardian) that from the date of my admission as a cadet of the United States Military Academy I will serve in the Army of the United States for eight years, unless sooner discharged by competent authority."

In the presence of— _____.

The candidate is then required to take and subscribe an oath or affirmation in the following form:

"I, _____, do solemnly swear that I will support the Constitution of the United States, and bear true allegiance to the National Government; that I will maintain and defend the sovereignty of the United States paramount to any and all allegiance, sovereignty, or fealty I may owe to any State or country whatsoever; and that I will at all times obey the legal orders of my superior officers and the rules and articles governing the armies of the United States.

Sworn and subscribed at _____, this _____ day of _____, eighteen hundred and _____, before me.

Qualifications.—No candidate will be admitted who is under 17 or over 22 years of age, or who is deformed or afflicted with any disease or infirmity which would render him unfit for the military service, or who has, at the time of presenting himself, any disorder of an infectious or immoral character. Accepted candidates, if between 17 and 18 years of age, should not fall below 5 feet 3 inches in height and 100 pounds in weight. Candidates must be unmarried. Candidates must be well versed in reading, in writing, including orthography, and in arithmetic, and must have a knowledge of the elements of English grammar, of descriptive geography (particularly of our own country), and of the history of the United States.

CHARACTER OF EXAMINATIONS.

PHYSICAL EXAMINATION.

Every candidate is subjected to a rigid physical examination, and if there is found to exist in him any of the following causes of disqualification to such a degree as would immediately or at no very distant period impair his efficiency, he is rejected:

1. Feeble constitution, unsound health from whatever cause, indications of former disease, glandular swellings, or other symptoms of scrofula.
2. Chronic cutaneous affections, especially of the scalp.
3. Severe injuries of the bones of the head; convulsions.
4. Impaired vision, from whatever cause; inflammatory affections of the eyelids, immobility or irregularity of the iris, fistula lachrymalis, etc.
5. Deafness; copious discharge from the ears.
6. Loss of many teeth, or the teeth generally unsound.
7. Impediment of speech.
8. Want of due capacity of the chest, and any other indication of a liability to a pulmonic disease.
9. Impaired or inadequate efficiency of one or both of the superior extremities on account of fractures, especially of the clavicle, contraction of a joint, deformity, etc.
10. An unusual excurvature or incurvature of the spine.
11. Hernia.
12. A varicose state of the veins of the scrotum or spermatic cord (when large), hydrocele, hemorrhoids, fistulas.
13. Impaired or inadequate efficiency of one or both of the inferior extremities on account of varicose veins, fractures, malformation (flat feet, etc.), lameness, contraction, unequal length, bunions, overlying or supernumerary toes, etc.
14. Ulcers, or unsound cicatrices of ulcers likely to break out afresh.

NOTE.—Candidates are eligible for admission from the day they are 17 until the day they become 22 years of age, on which latter day they are not eligible.

There being no provision whatever for the payment of the traveling expenses of either accepted or rejected candidates for admission, no candidate should fail to provide himself in advance with the means of returning to his home in case of his rejection before either of the examining boards, as he may otherwise be put to considerable trouble, inconvenience, and even suffering on account of his destitute condition. After defraying their expenses while here all balances due to candidates who fail to pass the entrance examinations are promptly refunded. If admitted, the money brought by him to meet such a contingency can be deposited with the treasurer on account of his equipment as a cadet or returned to his friends.

It is suggested to all candidates for admission to the Military Academy that before leaving their place of residence for West Point they should cause themselves to be thoroughly examined by a competent physician and by a teacher or instructor in good standing. By such an examination any serious physical disqualification or deficiency in mental preparation would be revealed and the candidate probably spared the expense and trouble of a useless journey and the mortification of rejection.

It should be understood that the informal examination herein recommended is solely for the convenience and benefit of the candidate himself, and can in no manner affect the decision of the academic and medical examining boards at West Point.

ACADEMICAL EXAMINATION.

Reading.—In reading candidates must be able to read understandingly, with proper accent and emphasis.

Writing and orthography.—In writing and orthography they must be able, from dictation, to write sentences from standard pieces of English literature, both prose and poetry, sufficient in number to test their qualifications both in handwriting and orthography. They must also be able to write and spell correctly, from dictation, a certain number of standard test words.

Arithmetic.—In arithmetic they must be able—

First. To explain, accurately and clearly, its objects and the manner of writing and reading numbers entire—fractional, compound, or denominate.

Second. To perform with facility and accuracy the various operations of addition, subtraction, multiplication, and division of whole numbers, abstract and compound or denominate, giving the rule for each operation, with its reasons, and also for the different methods of proving the accuracy of the work.

Third. To explain the meaning of reduction, its different kinds, its application to denominate numbers in reducing them from a higher to a lower denomination and the reverse, and to equivalent decimals; to give the rule for each case, with its reasons, and to apply readily these rules to practical examples of each kind.

Fourth. To explain the nature of prime numbers and factors of a number, of a common divisor of two or more numbers, particularly of their greatest divisor, with its use, and to give the rule, with its reasons for obtaining it, also the meaning of a common multiple of several numbers, particularly of their least common multiple and its use, and to give the rule, with its reasons, for obtaining it, and to apply each of these rules to examples.

Fifth. To explain the nature of fractions, common or vulgar, and decimal; to define the various kinds of fractions, with the distinguishing properties of each; to give all the rules for their reduction, particularly from mixed to improper and the reverse, from compound or complex to simple, to their lowest terms, to a common denominator, from common to decimal and the reverse; for their addition, subtraction, multiplication, and division, with the reason for each change of rule, and to apply each rule to examples.

Sixth. To define the terms ratio and proportion; to give the properties of proportion and the rules and their reasons for stating and solving questions in both simple and compound proportion, or single and double rule of three, and to apply these rules to examples.

Seventh. The candidates must not only know the principles and rules referred to above, but they are required to possess such a thorough understanding of all the fundamental operations of arithmetic as will enable them to combine the various principles in the solution of any complex problem which can be solved by the methods of arithmetic. In other words, they must possess such a complete knowledge of arithmetic as will enable them to take up at once the higher branches of mathematics without further study of arithmetic.

Eighth. It is to be understood that the examination in these branches may be either written or oral, or partly written and partly oral; that the definitions and rules must be given fully and accurately, and that the work of all examples, whether upon the blackboard, slate, or paper, must be written plainly and in full, and in such a manner as to show clearly the mode of solution.

The following examples and questions in arithmetic are a few of those which have been used at past examinations. They are given in order to indicate more clearly what is required, but it should be distinctly understood that entirely different ones are used each year:

Multiply 4.32 by .00012.

Explain the reason for placing the decimal point in the answer. (The rule for so doing is not the reason.)

Reduce $5\frac{1}{2} + \frac{7\frac{1}{2}}{0.5} - 0.725$ to an equivalent decimal.
 $4 + 3.45$
 $2\frac{2}{3}$

Divide 3,380,321 by MDCCXCIX, and express the quotient by the Roman system of notation.

Change .013 to an equivalent fraction whose denominator is 135.

Find the greatest common divisor of $26\frac{1}{2}$, $28\frac{2}{3}$, and $29\frac{1}{5}$.

How many men would be required to cultivate a field of $2\frac{2}{3}$ acres in $5\frac{1}{2}$ days of 10 hours each, if each man completed 77 square yards in 9 hours?

Separate $772\frac{2}{3}$ into three numbers, which shall be the same proportion as $2\frac{1}{3}$, $7\frac{1}{5}$, $1\frac{1}{6}$. 5 cubic feet of gold weigh 98.20 times as much as a cubic foot of water. How many cubic inches of copper will weigh as much as $\frac{7}{8}$ of a cubic inch of gold?

Find the least common multiple for the numbers $\frac{2}{3}$, 2.1, 5.25, $\frac{3}{4}$.

A wins 9 games out of 15 when playing against B, and 16 out of 25 when playing against C. How many games out of 118 should C win when playing against B?

A and B run a race, their rates of running being as 17 to 18. A runs $2\frac{1}{2}$ miles in 16 minutes 48 seconds, and B runs the entire distance in 34 minutes. What was the entire distance?

A and B can do a piece of work in 4 hours, A and C in $3\frac{3}{4}$ hours, B and C in 5 hours. In what time can A do it alone?

English shillings are coined from a metal which contains 37 parts of silver to 3 parts of alloy; one pound of this metal is coined into 66 shillings. The United States silver dollar weighs 412.5 grains, and consists of 9 parts silver to 1 part of alloy. What fraction of the United States dollar will contain the same amount of silver as 1 English shilling?

Give the rule for reducing a decimal of a given denomination to integers of lower denominations.

What is the effect of dividing the denominator of a fraction by a whole number, and why?

Explain the difference between a common fraction and a decimal.

What is the effect of annexing a cipher to a decimal, and why?

If the same number be subtracted from both terms of an improper fraction, what will be the effect? Why?

Give the rule for reducing a common fraction to an equivalent decimal, and explain why the resulting decimal will be equal to the common fraction from which it is obtained.

Give the rule for dividing one decimal by another, and explain why the decimal point in the quotient is placed where the rule directs.

Define reduction, and state the different kinds.

Grammar.—In English grammar candidates must be able—

1. To define the parts of speech and give their classes and properties; to give inflections, including declension, conjugation, and comparison; to give the corresponding masculine and feminine gender nouns; to give and apply the ordinary rules of syntax.

2. To parse fully and correctly any ordinary sentence, omitting rules, declensions, comparisons, and principal parts, but giving the subject of each verb, the governing word of each objective case, the word for which each pronoun stands or to which it refers, the words between which each preposition shows the relation, precisely what each conjunction connects, what each adjective and adverb qualifies or limits, the construction of each infinitive, and generally to show a good knowledge of the function of each word in the sentence. Omissions will be taken to indicate ignorance.

3. To correct in sentences or extracts any ordinary grammatical errors, such as are mentioned and explained in ordinary grammars.

It is not required that any particular grammarian or text-book shall be followed; but rules, definitions, parsing, and corrections must be in accordance with good usage and common sense. The examination may be written or oral, or both written and oral.

Geography.—Candidates will be required to pass a satisfactory examination, written or oral, or both, in geography, particularly of our own country. To give a candidate a clear idea of what is required, the following synopsis is added to show the character and extent of the examination. Questions are likely to be asked involving knowledge of:

First. Definitions of the geographical circles, of latitude and longitude, of zones, and of all the natural divisions of the earth's surface, as islands, seas, capes, etc.

Second. The continental areas and grand divisions of the water of the earth's surface.

Third. The grand divisions of the land—the large bodies of water which in part or wholly surround them.

Their principal mountains, location, direction, and extent; the capes, from what parts they project and into what waters.

Their principal peninsulas, location, and by what waters are they embraced?

The parts connected by an isthmus, if any.

Their principal islands, location, and surrounding waters.

The seas, gulfs, and bays, the coasts they indent, and the waters to which they are subordinate.

The straits, the lands they separate, and the waters they connect.

Their principal rivers, their sources, directions of flow, and the waters into which they empty.

The principal lakes, location and extent.

Fourth. The political divisions of the grand divisions.

Their names, locations, boundaries, and capitals; general questions of the same character as indicated in the second section, made applicable to each of the countries of each of the grand divisions.

Fifth. The United States.

The candidate should be thoroughly informed as to its general features, configuration, location, and boundaries (both with respect to neighboring countries, and latitude and longitude); its adjacent oceans, seas, bays, gulfs, sounds, straits, and islands; its mountain ranges, their location and extent; the sources, directions, and terminations of the important rivers and their principal tributaries; the lakes, and, in short, every geographical feature of the country as indicated above. The location and termination of important railroad lines and other means of communication from one part of the country to another should not be omitted.

The States and Territories are to be accurately located with respect to each other by their boundaries, and as to their order along the Atlantic coast, the Gulf of Mexico, the Pacific coast, the northern frontier, the Mexican frontier, and the Mississippi, Missouri, and Ohio rivers.

The boundary and other large rivers of each State, as well as all other prominent geographical features, should be known.

The names and locations of their capitals and other important cities and towns are likewise to be known.

In short, the knowledge should be so complete that a clear mental picture of the whole or any part of the United States is impressed on the mind of the candidate. More weight is attached to a knowledge of the geography of the United States than to that of all other countries combined.

History.—The candidate should make himself familiar with so much of the history of the United States as is contained in the ordinary school histories. The examination may be written or oral, or partly written and partly oral, and will usually consist of a series of questions similar to the following

I. Name the earliest European settlements within the present limits of the United States; when, where, and by whom made. When did the settlements made by other nations than the English come under the dominion of Great Britain and of the United States?

II. What was the difference between the royal, the chartered, and the proprietary colonies? How many colonies were there originally in Massachusetts and Connecticut? When were they united? How many in Pennsylvania? When were they separated?

III. In what wars were the colonies engaged before the revolution? What were the principal events and results of those of King William, Queen Anne, King George, and the French and Indian?

IV. What were the remote and immediate causes of the American Revolution? Explain the navigation act, stamp act, writs of assistance. When did the war of the Revolution properly begin? When, where, and how did it end? Give the particulars of Arnold's treason. Who were the most prominent generals in this war? Name the most important battles and their results.

V. The Constitution of the United States—why and when was it formed? When was it adopted?

VI. Give the names of the Presidents of the United States in their order. Give the leading events of the administration of each one; for example, that of—

Washington—Indian war; trouble with France; Jay's treaty; the whisky rebellion, etc.

Jefferson—War with Tripoli; purchase of Louisiana; the embargo, etc.

Madison—War of 1812: Its causes; the principal battles on land and sea; peculiarity of its last battle; when ended, etc.

Monroe—Indian war; cession of Florida; Missouri Compromise, etc.

Jackson—Black Hawk and Seminole wars; the United States Bank; nullification, etc.

Polk—The Mexican war: Its causes; principal battles; result of it, etc.

Pierce—Repeal of Missouri compromise; troubles in Kansas, etc.

Buchanan—Civil war: How begun, etc.

Lincoln—War of secession: Its causes; its results, social and political; explain doctrine of State sovereignty; alienation between Northern and Southern States; doctrine of secession; give an account of principal battles.

Johnson—Fourteenth amendment; tenure of office bill; Johnson's impeachment.

Grant—Fifteenth amendment; Alabama claims and treaty of Washington; electoral commission.

ACADEMIC DUTIES.

The academic duties and exercises commence on the 1st of September and continue until the 1st of June. Examinations of the several classes are held upon the completion by any class of any branch of a course of study, and in January and June of each year, and at the January examination such of the new cadets as are found proficient in studies and have been correct in conduct are given the particular standing in their class to which their merits entitle them. After each examination cadets found deficient in conduct or studies are discharged from the Academy, unless the academic board, for special reasons in each case, should otherwise recommend.

These examinations are very thorough, and require from the cadet a close and persevering attention to study, without evasion or slighting of any part of the course, as no relaxation of any kind can be made by the examiners.

Military instruction.—From the termination of the examination in June to the end of August the cadets live in camp, engaged only in military duties and exercises and receiving practical military instruction.

Except in extreme cases, cadets are allowed but one leave of absence during the four years' course. As a rule, the leave is granted at the end of the first two years' course of study.

PAY OF CADETS.

The pay of a cadet is \$540 per year, to commence with his admission to the Academy, and is sufficient, with proper economy, for his support. No cadet is permitted to receive money or any other supplies from his parents, or from any person whomsoever, without the sanction of the Superintendent.

Each cadet must keep himself supplied with the followed mentioned articles, viz:

Two pairs of uniform shoes; *1 pair of overshoes (arctic); *6 towels (face); *2 towels (bathing); 1 mattress; 1 pillow; *2 pillowcases, 36 inches by 45 inches; *4 sheets, 10/4 by 6/4; *2 blankets (white); *1 comfortable or quilted bed cover; 1 washbowl; *1 tumbler; *1 bottle of indelible ink; *1 clothes brush or whisk broom; *hairbrush; *1 toothbrush; *1 nailbrush; *1 shaving brush and mug;

*shoe brush; *1 razor; *1 razor strop; *2 pairs of white suspenders; *6 white shirts; *2 nightshirts; *6 summer undershirts; *6 winter undershirts; *6 pairs of summer drawers; *6 pairs of winter drawers; *6 pairs of summer socks; *6 pairs of winter socks; *6 pocket handkerchiefs; *6 pairs of cuffs; 12 white linen collars; 6 pairs of white Berlin gloves; 2 sets of white belts; 1 chair; *1 penknife; 1 account book; *1 trunk.

Candidates are authorized to bring with them the articles marked *. They are, however, informed that such articles can be purchased at regulated prices from the cadet quartermaster's department at West Point after their arrival.

Cadets are required to wear the prescribed uniform. All articles of their uniform are of a designated pattern, and are sold to cadets at West Point at regulated prices.

EXPENSES OF CANDIDATES PRIOR TO ADMISSION.

The expenses of a candidate for board, washing, lights, etc., after he has reported and prior to admission, will be about \$10. Immediately after being admitted to the institution he must be provided with an outfit of uniform, the cost of which will be about \$90, making a total sum of \$100, which should be deposited with the treasurer of the Academy before the candidate is admitted. The failure of a candidate to deposit \$100 at the time of applying for admission to the Military Academy is not a bar to his admission if satisfactory evidence can be given that he is unable to make the deposit. His uniforms and other outfits will cost him about the amount mentioned, and if he does not make the deposit he will be obliged to incur debts. This will place him under a great disadvantage for a long time, and will deprive him of a great many little comforts, since his pay is only about sufficient to defray his ordinary expenses. It is important that he deposit the \$100, or as large a part of it as possible, but it is not absolutely requisite to his admission. It is best for a candidate to take with him no more money than will defray his traveling expenses, and for the parent or guardian to send to "The treasurer of the United States Military Academy," the required deposit of \$100. This amount is sufficient to equip a new cadet with uniform and to supply him with all articles and books. Any deviation from the rule as to the amount or manner of making the deposit must be explained in writing by the parent or guardian of the candidate to the Superintendent of the Academy.

ASSIGNMENT TO CORPS AFTER GRADUATION.

The attention of applicants and candidates is called to the following provisions of an act of Congress approved May 17, 1886, to regulate the promotion of graduates of the United States Military Academy:

"That when any cadet of the United States Military Academy has gone through all its classes and received a regular diploma from the academic staff, he may be promoted and commissioned as a second lieutenant in any arm or corps of the Army in which there may be a vacancy and the duties of which he may have been judged competent to perform; and in case there shall not at the time be a vacancy in such arm or corps, he may, at the discretion of the President, be promoted and commissioned in it as an additional second lieutenant, with the usual pay and allowance of a second lieutenant.

Course of study and books used at the Military Academy.

[Books marked thus * are for reference.]

FIRST YEAR—FOURTH CLASS.

Department.	Course of study, text-books, and books of reference.
Mathematics	Davies' Elements of Algebra. Davies' Legendre's Geometry. Ludlow's Elements of Trigonometry. C. Smith's Conic Sections—Peck's Determinants. Davies' Surveying. * Ludlow's Logarithmic Tables.

Course of study and books used at the Military Academy—Continued.

FIRST YEAR—FOURTH CLASS—Continued.

Department.	Course of study, text-books, and books of reference.
Modern languages.....	<p>Williams' Composition and Rhetoric. Abbott's How to Write Clearly. Meiklejohn's English Language. * Smith's Synonyms Discriminated. * Roget's Thesaurus of English Words. * Webster's Dictionary. De Peiffer's French Pronunciation. Keetel's Analytical and Practical French Grammar. Castarède's Treatise on the Conjugation of French Verbs. Roemer's Cours de Lecture et de Traduction, Vol. I. Bocher's College Series of French Plays, Vol. II. * Spier's and Surene's French Pronouncing Dictionary.</p>
Drill Regulations, United States Army.	<p>Practical instruction in the schools of the soldier, company and battalion—infantry. Theoretical instruction in the school of the soldier and company. Practical and theoretical instruction in the school of the cannoneer—siege and light artillery. Theoretical and practical instruction in the service of security and information. Exercises in applied tactics and practice marches—infantry. Theoretical and practical instruction in target practice, United States Army Drill Regulations. Firing Regulations for Small Arms. Wagner's Manual of Security and Information. Use of the sword, instruction in fencing with rapier and broadsword, and bayonet exercise, and military gymnastics.</p>

SECOND YEAR—THIRD CLASS.

Mathematics	<p>C. Smith's Conic Sections and Solid Geometry. Church's Descriptive Geometry, with its application to spherical projections, shades, shadows, and perspective. Bass' Differential Calculus. Church's Integral Calculus.</p>
Modern languages.....	<p>Johnson's Text-Book on the Method of Least Squares. Borel's Grammaire Francaise. Hennequin's Lessons in Idiomatic French. Bôcher's College Series of French Plays, Vol. II. Roemer's Cours de Lecture et de Traduction, Vol. II. Revue Militaire de l'Etranger. The Weekly Figaro. Edgren's Compendious French Grammar. * De Peiffer's French Pronunciation. * Spier's and Surene's French Pronouncing Dictionary. Monsanto and Languellier's Spanish Grammar. Knapp's Spanish Grammar. Mantilla's Spanish Reader, No. 3. Knapp's Spanish Reader. Eco de Madrid. * Seoane's Neumann and Baret's Spanish Dictionary.</p>
Drawing.....	<p>Constructive problems in plane geometry; point paths; topography and plotting of surveys with lead pencil, pen and ink, and colors; construction of the various problems in descriptive geometry, shades and shadows, linear perspective, and isometric projections; practical surveying in the field. Field reconnaissance contouring and sketching, with and without instruments; theory of color and laying of tints; history of cartography and topography; triangulation and large surveys; lectures on the foregoing. * Reed's topographical drawing and sketching, including photography applied to surveying.</p>
Drill Regulations, United States Army.	<p>Practical instruction in the schools of the soldier, company and battalion—infantry. Practical instruction in the school of the cannoneer—light artillery; and school of the trooper-cavalry; and equitation. Practical instruction in small-arm target practice. Practical instruction in the service of security and information. Exercises in applied tactics and practice marches—infantry. United States Army Drill Regulations. Firing Regulations of Small Arms. Wagner's Manual of Security and Information.</p>
Practical military engineering.	<p>Practical instruction in the construction of ponton, spar, and trestle bridges.</p>

THIRD YEAR—SECOND CLASS.

Natural and experimental philosophy.	<p>Michie's Analytical Mechanics. Michie and Harlow's Practical Astronomy. Young's General Astronomy. Michie's Elements of Wave-Motion relating to Sound and Light.</p>
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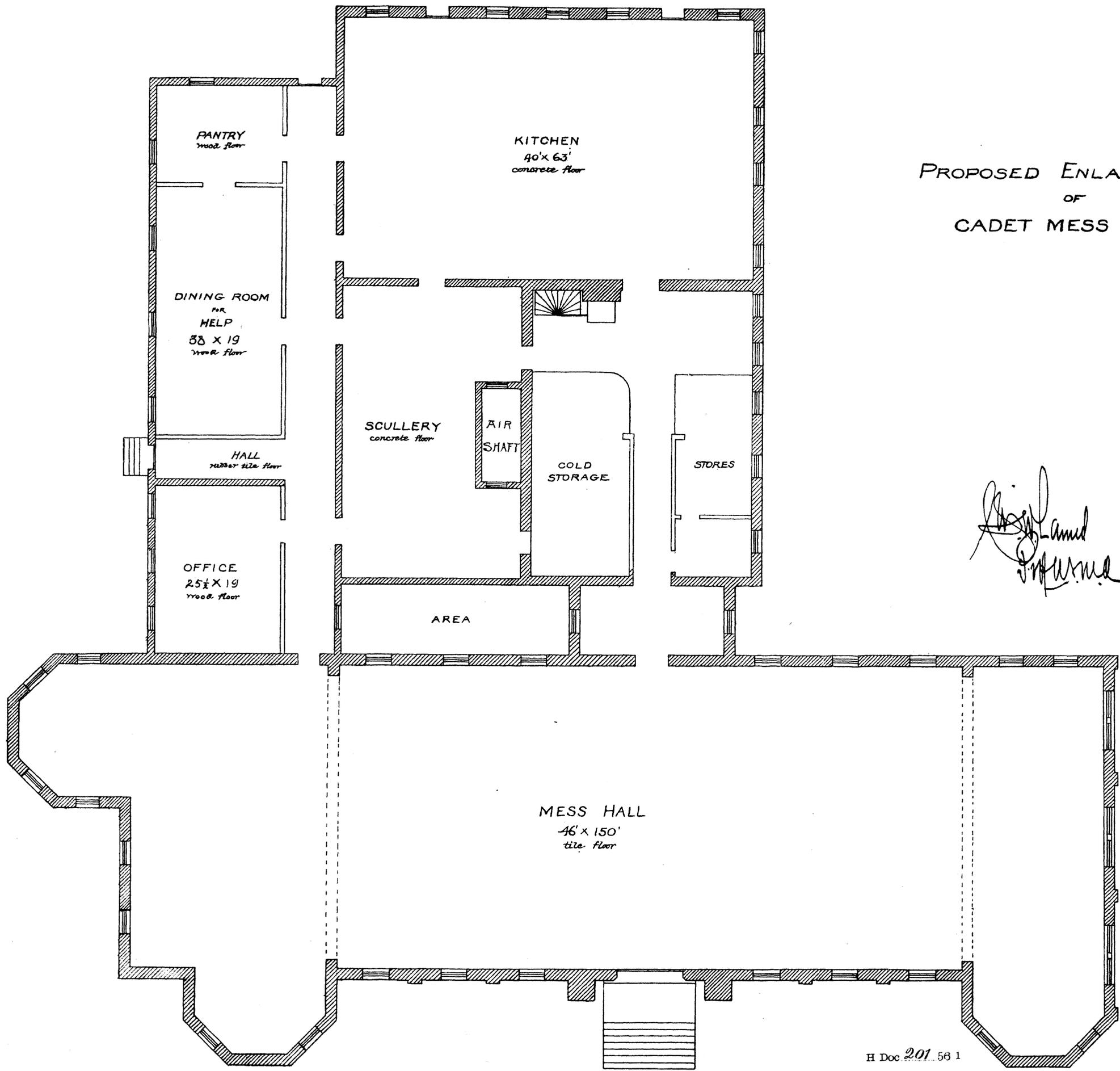
Course of study and books used at the Military Academy—Continued.

THIRD YEAR—SECOND CLASS—Continued.

Department.	Course of study, text-books, and books of reference.
Chemistry, mineralogy, and geology.	Tillman's Descriptive General Chemistry. Tillman's Elementary Lessons in Heat (second edition). Tracy's Anatomy, Physiology, and Hygiene. Thompson's Elementary Lessons in Electricity and Magnetism (new and revised edition). Tillman's Elementary Text-Book of Mineralogy. Le Conte's Elements of Geology (fourth edition).
Drawing	Free-hand drawing and landscape in black and white. Mechanical and architectural drawing in ink and colors; military landscape, sketching in the field; memory drawing; free-hand mechanical drawing without instruments; building construction, working drawings and isometric sections; engineering and ordnance drawing; lectures on all the foregoing subjects, with stereopticon.
Drill Regulations, United States Army.	*Reed's Topographical Drawing and Sketching, including photography applied to surveying. Practical instruction in the schools of the soldier, company and battalion—infantry. Theoretical instruction in drill regulations—infantry. Practical instruction in the school of the cannoneer—sea-coast artillery. Theoretical instruction in drill regulations for light artillery. Practical instruction in the schools of the troop and squadron—cavalry and equestrian. Practical instruction in the service of security and information. Exercises in applied tactics and practice marches—infantry. Practical instruction in small-arm target practice; lectures on post, company and staff administration. United States Army Infantry and Artillery Drill Regulations. Firing Regulations for Small Arms. Wagner's Manual of Security and Information.
Practical military engineering.	Practical instruction in the construction of ponton bridges, in laying gun platforms, and in the construction of revetments and obstacles. Practical and Theoretical Instruction in Military Signaling.

FOURTH YEAR—FIRST CLASS.

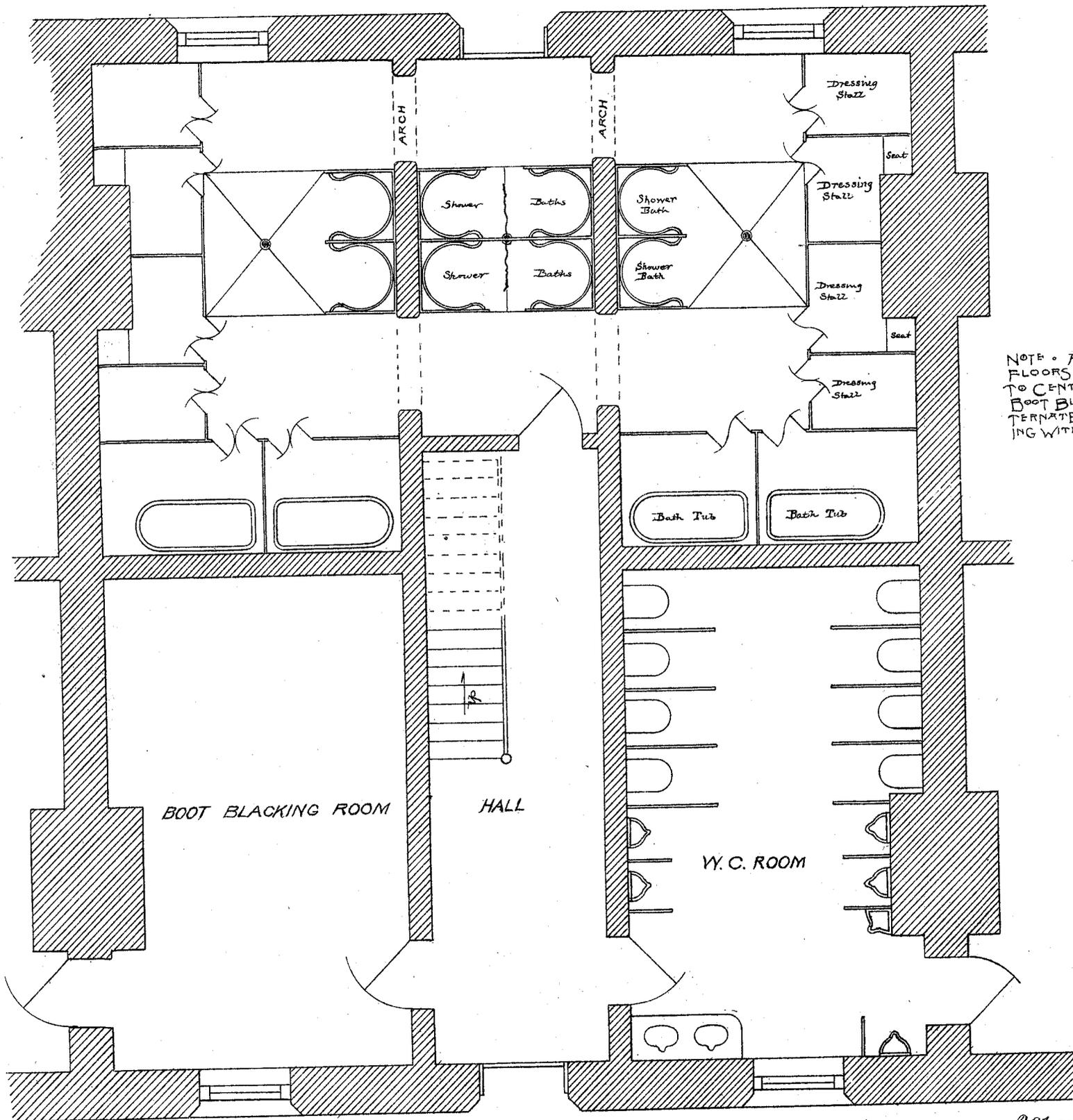
Civil and military engineering and science of war.	Wheeler's Civil Engineering. Fieberger's Field Fortifications. Mercur's Mahan's Permanent Fortification (edition of 1887.) Mercur's Attack of Fortified Places. Wagner's Organization and Tactics and the Service of Security and Information.
Law	Mahan's Stereotomy. Davis's Elements of Law. Davis's International Law. Davis's Military Law.
History and historical geography.	Flanders' Manual of the Constitution of the United States. Fisher's Brief History of the Nations.
Practical military engineering.	*Labberton's New Historical Atlas. Demolitions. Practical instruction in the construction of ponton, trestle, and spar bridges; in the preparation and application of siege materials; and in laying out field and siege works. Practical instruction in military reconnaissances on foot and mounted; in field telegraphy, night signaling, and the use of the heliograph. *Ernst's Manual of Practical Military Engineering.
Natural and experimental philosophy.	Practical instruction in astronomy.
Drill Regulations, United States Army.	Practical instruction in the schools of the soldier, company and battalion—infantry; of the troop and squadron; equestrian. Theoretical instruction, United States Cavalry Drill Regulations. Practical instruction in the school of the battery—light and horse artillery.
	Practical instruction in the service of security and information; exercises in applied tactics; practical instruction in small-arm target practice; practice marches—infantry, cavalry, and artillery; lectures in customs of service and military etiquette; lectures on age of horse, horseshoeing, stable management, and practical work at stables, etc. United States Army Cavalry Drill Regulations. United States Army Drill Regulations. Firing Regulations for Small Arms.
Ordnance and gunnery	Wagner's Manual of Security and Information. Bruff's Ordnance and Gunnery. Ingalls's Ballistic Tables.



PROPOSED ENLARGEMENT
OF
CADET MESS HALL

Handwritten signature

NORTH



NOTE - ALL FLOORS OF CONCRETE
FLOORS OF BATH ROOMS DRAIN
TO CENTRAL CONDUIT
BOOT BLACKING ROOM IN AL-
TERNATE DIVISIONS ALTERNAT-
ING WITH EQUIPMENT STORES

H Doc. 201 56 1

BASEMENT OF CADET BARRACKS
SHOWING
PROPOSED PLUMBING.
(ONE DIVISION)

