# REPORT

OF THE

# BOARD OF VISITORS

TO THE

# UNITED STATES MILITARY ACADEMY,

MADE TO

# THE SECRETARY OF WAR,

FOR

# THE YEAR 1889.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1889.

# BOARD OF VISITORS.

## JUNE, 1889.

APPOINTED BY THE PRESIDENT OF THE UNITED STATES.

1. General LEW WALLACE (*President*) ..... CRAWFORDSVILLE, INDIANA.
2. Rev. ARTHUR EDWARDS, D. D. (*Secretary*) ..... CHICAGO, ILLINOIS.
3. Prof. LEROY D. BROWN ..... RENO, NEVADA.
4. Rev. B. W. CHIDLAW, D. D. (*Vice-President*) ..... CLEVES, OHIO.
5. NATHAN S. LINCOLN, M. D ..... WASHINGTON, DISTRICT OF COLUMBIA.
6. Prof. C. M. PINKERTON ..... PERRY, IOWA.
7. Capt. CHARLES KING, U. S. Army, retired ..... MILWAUKEE, WISCONSIN.

APPOINTED BY THE PRESIDENT OF THE SENATE.

8. Hon. CUSHMAN K. DAVIS ..... ST. PAUL, MINNESOTA.
9. Hon. JOHN W. DANIEL ..... LYNCHBURGH, VIRGINIA.

APPOINTED BY THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

10. Hon. S. M. ROBERTSON ..... BATON ROUGE, LOUISIANA.
11. Hon. GEORGE W STEELE* ..... MARION, INDIANA.
12. Hon. S. S. YODER ..... LIMA, OHIO.

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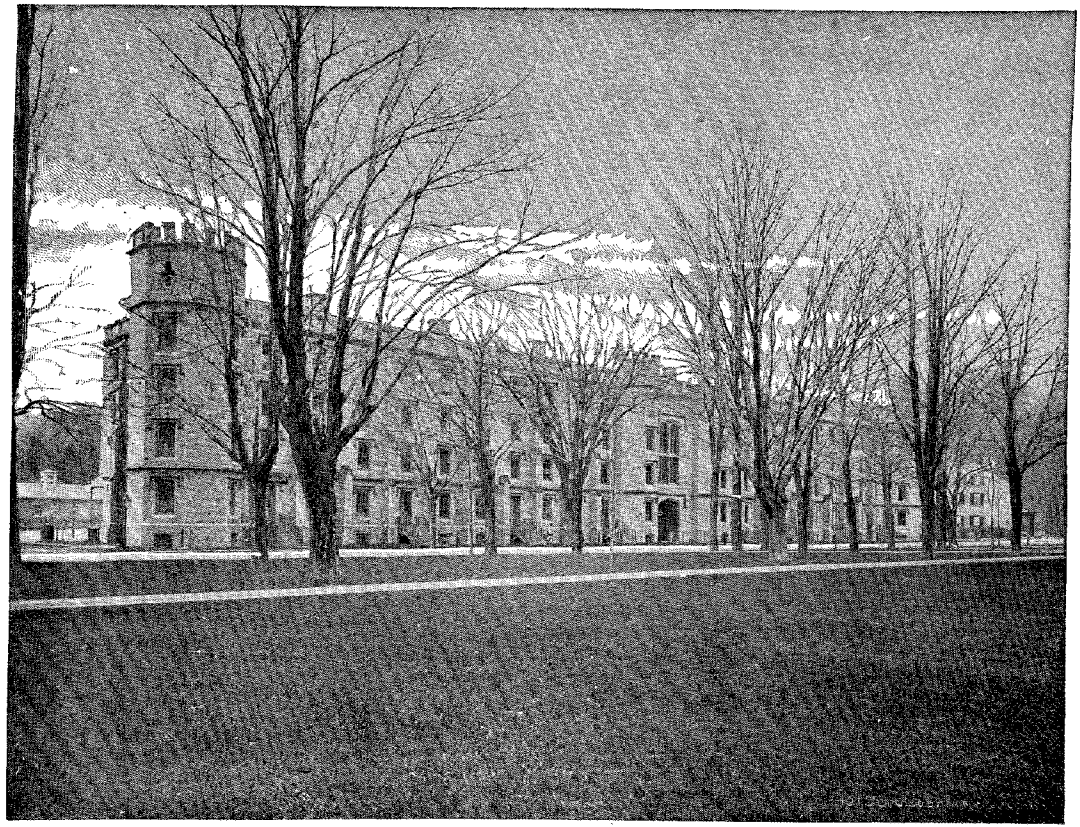
*Not present.



CADET BARRACKS—LOOKING SOUTHWEST.

# REPORT

OF THE

# BOARD OF VISITORS TO THE UNITED STATES MILITARY ACADEMY.

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

The following report of the Board of Visitors to the United States Military Academy at West Point for 1889 is respectfully submitted.

The Revised Statutes of the United States provide as follows:

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.

SEC. 1329. No compensation shall be made to the members of said Board beyond the payment of their expenses for board and lodging while at the Academy, and an allowance, not exceeding eight cents a mile, for traveling, by the shortest mail-route, from their respective homes to the Academy, and thence to their homes.

A subsequent act, approved March 3, 1877, making appropriations for the Academy for the year ending June 30, 1878, explains that—

The expenses allowed by section thirteen hundred and twenty-nine of the Revised Statutes shall be paid as follows: Each member of the Board of Visitors shall receive not exceeding eight cents per mile for each mile traveled, by the most direct route, from his residence to West Point and return, and shall, in addition, receive five dollars per day for expenses during each day of his service at West Point.

In accordance with these provisions of the law relating thereto, the following Board of Visitors was duly appointed, and requested to convene at the Military Academy on or before Saturday, June 1, 1889:

APPOINTED BY THE PRESIDENT OF THE UNITED STATES.

1. General Lew Wallace ..... Crawfordsville, Ind.
2. Rev. Arthur Edwards, D. D ..... Chicago, Ill.
3. Prof. LeRoy D. Brown ..... Reno, Nev.
4. Rev. B. W. Chidlaw, D. D ..... Cleves, Ohio.
5. Dr. Nathan S. Lincoln ..... Washington, D. C.
6. Prof. C. M. Pinkerton ..... Perry, Iowa.
7. Capt. Charles King, U. S. Army, retired ..... Milwaukee, Wis.

APPOINTED BY THE PRESIDENT OF THE SENATE.

8. Hon. Cushman K. Davis.....St. Paul, Minn.
9. Hon. John W. Daniel.....Lynchburgh, Va.

APPOINTED BY THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

10. Hon. S. M. Robertson.....Baton Rouge, La.
11. Hon. George W. Steele.....Marion, Ind.
12. Hon. S. S. Yoder.....Lima, Ohio.

It being made known that a majority of this Board had arrived at West Point and were at the hotel, a meeting was called in the Board rooms on Saturday evening, June 1. Inspection of the list of appointees showed that the following members were present: General Lew. Wallace, Rev. Dr. Arthur Edwards, Prof. LeRoy D. Brown, Rev. Dr. B. W. Chidlaw, Nathan S. Lincoln, M. D., Prof. C. M. Pinkerton, Capt. Charles King, U. S. Army, retired, and Senator Daniel.

ORGANIZATION.

After general informal conversation respecting the coming duties of the Board, Senator Daniel nominated General Wallace as president, and Professor Pinkerton nominated Rev. Dr. Arthur Edwards as secretary, of the Board, and the two nominees were elected. By common and unanimous consent, Rev. Dr. Chidlaw was elected vice-president.

The secretary was instructed to invite General J. G. Parke, the Superintendent of the Military Academy, to visit the Board rooms, and to join in the informal conversation respecting the interests in his charge. Therefore General Parke came into the Board rooms and cheerfully tendered all possible assistance to facilitate the inspections and labors of the Visitors. The conversation tended greatly to render the initial work of the Board thorough and pleasant.

After this visit by the Superintendent, Captain King, Senator Daniel, and the secretary of the Board were appointed to report titles for the subcommittees, and to distribute work for the same.

Before adjournment each member of the Board was put in possession of a copy of the following:

ORDER OF EXAMINATIONS AND MILITARY EXERCISES.

[Orders No. 76.]

ORDERS No. 76.] HEADQUARTERS U. S. MILITARY ACADEMY,
*West Point, N. Y., May* 15, 1889.

I. The annual examination will begin on Saturday, the 1st proximo, and continue daily, Sundays excepted, from 9 o'clock a. m. till 1 o'clock p. m., and from 2.30 o'clock p. m. till 4.30 o'clock p. m., until finished.

II. The Academic Board will be divided into two committees.

The first committee will be composed of—
- The Professor of Natural and Experimental Philosophy,
- The Professor of Mathematics,
- The Professor of Civil and Military Engineering,
- The Instructor of Ordnance and Gunnery, and
- The Instructor of Practical Military Engineering.

The second committee will be composed of—
- The Professor of Modern Languages,
- The Professor of Chemistry, Mineralogy, and Geology,
- The Professor of History, Geography, and Ethics,
- The Professor of Law, and
- The Commandant of Cadets.

The first committee will sit in the library and examine orally—
(1) The third class in mathematics.
(2) The first class in engineering.
(3) The second class in natural and experimental philosophy.
(4) The first class in ordnance and gunnery.
And by written examination—
The fourth class in mathematics, at 8 a. m., June 3, in Room No. 23, Academic building.
The second committee will sit in Room No. 1, Academic building, and examine orally—
(1) The first class in law.
(2) The second class in chemistry, mineralogy, and geology.
(3) The third class in French.
(4) The first class in Spanish.
(5) The fourth class in French.
And by written examination—
The fourth class in French, at 8 a. m., June 1, in Room 23, Academic building.
The first class in Spanish, at 8 a. m., June 3, in the fencing academy.
The third class in French, at 8 a. m., June 4, in the fencing academy.
The fourth class in English, at 8 a. m., June 4, in Room 23, Academic building.
By inspection of marks and drawings—
The second and third classes in drawing.

In all the classes the oral examinations will begin with the lowest sections, and the examinations will be so conducted as not to interfere with the usual hours for meals of cadets.

The Superintendent will preside in either committee with which he may be present.

III. As each committee shall complete its labors of examination, its presiding officer will report the fact to these headquarters.

IV. First Lieut. Eugene J. Spencer, Corps of Engineers, and First Lieut. Alfred B. Jackson, Ninth Cavalry, are appointed the secretaries of the second and first committees, respectively. The record of each committee will be so kept as to show clearly the length of time occupied in examination by each department of instruction.

At the close of each day's proceedings the secretaries will report to the adjutant of the Academy the progress of the examination, and they will transmit to the secretary of the Academic Board the records of the proceedings of the committees as soon as they are completed.

V. The instructors will report daily to the heads of their respective departments, and keep themselves informed as to the times when their services will be required.

VI. The following military exercises will take place during the examination:

| Exercise. | Subject. | Date. |
|---|---|---|
| Infantry | Review | June 3 |
| | School of battalion | June 5 |
| | Battalion skirmish drill | June 8 |
| Artillery | Mortar battery drill | June 1 |
| | Light battery drill | June 10 |
| | Sea-coast battery drill | June 6 |
| Cavalry | School of the company and battalion | June 4 |
| | School of the soldier mounted | June 7 |
| Practical military engineering | Spar bridge building | June 10 |
| | Ponton bridge building | June 8 |
| | Military signaling | June 11 |
| Small arms | Use of the sword and bayonet | June 11 |
| | Military gymnastics | June 11 |

This order of exercises may be changed on account of the weather, or for other causes.

VII. The members of the First Class will be graduated June 12, 1889.

By order of Colonel Parke.

W. C. BROWN,
*First Lieutenant First Cavalry, Adjutant.*

At the second session of the board, Chairman King reported the following titles for the subcommittees, and the president of the Board assigned members to the same, all having arrived save Hon. George

W. Steele, of Indiana, who remained absent, and was present in the board at none of its sessions, the gentleman being detained by sickness:

SUBCOMMITTEES OF THE BOARD.

1. *On buildings, grounds, and police administration.*—Hon. S. M. Robertson, chairman; Hon. S. S. Yoder, General Lew. Wallace, and Dr. Nathan S. Lincoln.

2. *On discipline and instruction.*—Capt. Charles King, chairman; Rev. Dr. B. W. Chidlaw, Hon. S. M. Robertson, and Prof. Le Roy D. Brown.

3. *On ordnance, armament, and equipment.*—Hon. John W. Daniel, chairman; Hon. Cushman K. Davis, Hon. George W. Steele, and Capt. Charles King.

4. *On cadet supply departments and expenditures.*—Prof. Le Roy D. Brown, chairman; Rev. Dr. Arthur Edwards, General Lew. Wallace, Rev. Dr. B. W. Chidlaw, and Hon. John W. Daniel.

5. *On fiscal affairs of the Academy.*—Hon. Cushman K. Davis, chairman; Prof. Le Roy D. Brown, Hon. S. S. Yoder, and Prof. C. M. Pinkerton.

6. *On appointments, examinations, and miscellaneous business.*—Prof. C. M. Pinkerton, chairman; Dr. Nathan S. Lincoln, Rev. Dr. Arthur Edwards, and Hon. S. S. Yoder.

Meantime, according to instructions by the Board, the secretary had formally informed the Superintendent of the Academy that the Board had been organized. That officer immediately responded by letter, promising that every facility would be given to enable the Board to prosecute its inquiries and inspections. The Superintendent further said that he had instructed the heads of departments also to give all facilities to the Board and each of its members in their work. Still further to facilitate the work of the Board, Lieut. F. L. Dodds, of the Ninth Infantry, and Lieut. Henry C. Hodges, jr., of the Twenty-second Infantry, were detailed to attend upon the Board during their stay at the Academy. These gentlemen rendered courteous and thoughtful service, which is hereby acknowledged thankfully. General Parke, in the letter above alluded to, informed the Board that he, with his academic board and his military staff, would call at the hotel at 4.20 p. m., June 3, for the purpose of paying their respects to the Board and to conduct its members to the parade ground to witness a review of the corps of cadets to be given in its honor.

The call was duly made, and after the interchange of courtesies, a salute of seventeen guns was fired as the Board was being escorted to the parade ground. The president of the Board acted as reviewing officer and the parade and inspection took place with special credit to the splendid cadet corps that formed the perfect lines and columns.

Before leaving the Board rooms, it was ordered that the daily sessions should take place at 10 o'clock a. m. until otherwise directed.

At the fifth session a communication was received in which the Superintendent of the Military Academy requested the Board to select one of its members to address the graduating class on Wednesday, June 12. The Board accordingly selected Senator C. K. Davis to perform that service, which appointment was accepted by the Senator.

The duties of the Board as a body were performed within the first twelve days of June, and the interest culminated on the last day of that period. Setting aside the chronological order of events, we here testify that "graduating day" was duly observed, according to the following order of exercises:

## U. S. MILITARY ACADEMY.

*Programme of the graduating exercises, at* 10.30 *o'clock a. m., Wednesday, June* 12, 1889.

1. The graduating class will proceed to the designated place, escorted by the corps of cadets, under the commandant of cadets.
2. Prayer by chaplain of the Academy.
3. Music: United States Military Academy Band.
4. Address to graduating class: Hon. Cushman K. Davis, Board of Visitors.
5. Music: United States Military Academy Band.
6. Delivery of diplomas: General Sherman.
7. Music: United States Military Academy Band.
8. Benediction by chaplain of the Academy.

The address delivered by Senator Davis was as follows, its printing being ordered by the Board of Visitors:

## SENATOR DAVIS'S ADDRESS.

GENTLEMEN OF THE GRADUATING CLASS: The graduation of a class from the school of youth into the university of active life is everywhere a most important event. It is the act by which new forces are set to work upon all the concerns of society and government. All of the agencies of civilization receive thereby a re-enforcement. This new auxiliary becomes immediately pervasive. Law, divinity, medicine, metaphysics, moral science, physical science, all philosophy move under its impulse. Knowledge and power, its co-ordinate, are thus not merely kept at their former level; they are raised permanently the world over to a higher plane. It is the immaterial which is indestructible and immortal, and while the "cloud-capped towers and gorgeous palaces fade like an insubstantial pageant" and "leave not a rack behind," the edifices of knowledge endure as "possessions unto eternity."

It is the appreciation, often unconscious, of these facts which arouses such general interest in occasions like this. It is not alone mere curiosity or affection which at this time of the year draws such multitudes to attend the graduation ceremonies of institutions of learning. These are something more than scholastic pageants. The people feel that they come to assist in a process by which the state is made more secure, by which all learning is to be increased, by which morality is to be bettered, by which the very comforts of life are to be made more plentiful, by which that great achievement of man which we call civilization is to be augmented.

The Military Academy is highly appreciated by the American people. It is thoroughly an institution of the people and for the people. The system of competitive examinations by which, in many districts, the candidates for admission are chosen, places the youth of the country on a perfect equality. The son of the wage-earner has an equal opportunity with the son of the capitalist. These candidates are subjected to the same discipline after admission. The system is such that wealth gives its possessor no advantages of luxury or display.

There is no institution in the land in which is so thoroughly enforced that principle of all of our liberties that "all men are created equal." Many of you will rise to the most important grades of military rank. This will be through merit as demonstrated by achievement. No blatant demagogy will assist the undeserving to these stations. The Divinity of war is just, and his rewards are strictly apportioned to merit. His ears are deaf to the restless and unscrupulous agitator whose tongue of sophistry teaches the people vain things to their undoing. The distinctions of the life to which you have dedicated yourselves will come from merit, first ascertained here, and, in the years to come, still further to be demonstrated by increase of experience and of knowledge coupled with the performance of professional and patriotic duty.

Of course, every graduate from any institution of learning expects a career of some kind. In nearly all academic institutions this is a matter that is fixed after graduation. His diploma does not demonstrate that he is fit for any particular profession. Years elapse of subsequent education before he is deemed qualified to be intrusted with the duties of his chosen vocation. Years of endeavor may demonstrate that, after all, he has mistaken his calling, and then is presented that disheartening spec-

tacle of a man wasted in one profession who perhaps could have succeeded brilliantly in another.

No institution is infallible, and it is barely possible that an incompetent soldier may be graduated from this Academy. But the chance that this may be so is reduced to a minimum. The rigid discipline, the exact performance required in studies, the inflexible rule which turns back into civil life the man who fails in these, give assurance that the graduates are competent for the military profession. Into that profession you enter immediately. Not for any of you are those delightful years between youth and mature manhood in which other men, while acquiring their profession or waiting for employment, lay hold of the sweetest enjoyments of life. Not for any of you that golden time when the romantic dreams of early youth are all but realized; when in the leisure that is not idleness the mind is filled with trophies won from the domain of literature, or gathered from the observation of foreign travel. Scarcely for any of you is the power to change your career. Other men are free to wait. Your duties begin now.

These thoughts give rise to some important reflections. The course of study which you have just finished is necessarily special in its nature. It is designed to qualify you for one line of action. To do this in the course of time allotted it has been necessary to make your studies exclusive in their character to a very great degree. What has been taught bears upon military science, and the collateral information imparted has necessarily been limited. You are to a certain extent specialists, nearly to the same degree with a class of young men who have been instructed almost exclusively in the art and practice of medicine for a corresponding time. There is probably no institution in the world that sends forth its young men with a better special equipment.

But you must bear in mind that this special perfection has been accomplished by dispensing with instructions which pupils in institutions of a more general scope receive as a necessary portion of the course. And this is what was meant in the opening of this address by the expression that you are graduating from the school of youth into the university of life. This ceremony is but your matriculation into a grander school even than this, the school of experience, of thought inspiring action, and above all the school of the study of books. Do not abuse yourselves with the hallucination that in the way of education you are finished men. For general and ultimate purposes the boy who graduates from the university to-day is better equipped than you are at present, although you far surpass him in your special equipment for immediate action. The point of the difference between you is that he will probably pass several years of comparative leisure and further preparation before he goes seriously to work, while you must go to your life duty at once. He thus has considerable advantage over you in the way of opportunity, and yet, I am inclined to think that your responsibilities through life will probably be much greater than his.

Under these circumstances what is your duty to yourselves and to your country? It is manifestly to set to work to round out your education in those departments of knowledge which from necessity you have not as yet been permitted to enter. Of course, if you are content to pass your lives as mere subalterns, to know just enough to perform well a subaltern's duty, to take slow promotion as it comes and lazily qualify yourselves for it when it happens, to live the life of a mercenary, these reflections will be wasted upon you. But I can not believe from what I have seen of you, and from what I know of the aspiring spirit of the American youth in every situation, that you have any such conceptions of your own future. Every male child born in the United States is an heir-apparent to the Presidency. All the honors which intellect, knowledge, and patriotism can claim are his. The dream of Napoleon has been brought to pass, "let every career be open to talent." The one-sided man is badly equipped even for his own profession. In all the universe of knowledge there is not one element that does not bear upon and assist every other. This is as true of the military art as of any other profession. It was the great strength of Napoleon that he knew many things and knew them well. It is impossible to understand how that marvelous man, the graduate of a military school, passing thence, a mere boy, immediately into the most active life of warfare ever led by man, traversing with the blazing arc of conquest from the sacred places of Palestine to the snows of Russia, acquired that stock of general knowledge which he possessed and put to use. From his juristic conceptions sprang the Code Napoleon. He was a great financier. He was a profound diplomatist. His views upon education were far in advance of his age, and he made his knowledge of literature the solace of his exile.

The ultimate support of all governments is force. Whether we believe with Hobbes that man in a state of nature is necessarily in perpetual war and that government has its origin in subjection by physical means, or with Rousseau that in some golden age of primeval peace men came together and consented by contract to government, it is written that the first man born into the world killed the next born, and that every nation whose history is recorded began by victory in some war and preserved its nationality by repeated conflicts.

Our own Government was thus founded. This was not done by any declaration of

independence, but by the sword. On the hallowed ground where we stand to-day, stood Washington, Greene, Putnam, La Fayette, and the other heroes of the Revolution, in arms and not in civil council. Here were matured the plans by which treason was thwarted, by which campaigns were fought in the Carolinas, in Virginia, in Pennsylvania, and in New York. It was to this place that the eyes of our ancestors were turned with hopes and fears to see in the soldier the assurance of freedom and of the success of the cause of self-government which had lain discrowned and buried ever since the overthrow of the ancient republics. Had force failed here of what avail were all the fine declarations of the rights of man? But it did not fail. Through sorrow, alternate defeat and victory to final triumphs, the cause of the people was made triumphant by the sword, and Liberty, queen of a nation, stood, in all her glories and virgin beauty, regnant and equal among kings.

Many years rolled by and Force again became necessary to preserve what Force had thus established. One section of the nation rose in rebellion. A great war shook the continent like an earthquake. The farmer left his field, the lawyer his office, the student his desk, not to seek the "bubble reputation at the cannon's mouth," but each to fight, and if need be to lay down his life, for the sacred cause of his country. For four years the tide of battle rolled from south to north, from north to south, from mountain ridges into plains, down rivers whose placid breasts had never been stained by blood. Hundreds of thousands of gallant men clad in blue or gray went down into the valley of the shadow as to a festival never to return any more, and there they lie embattled in those impregnable ranks of death which no martial music can ever wake again, or charge of hostile armies break. The end came with conquest. Peace brooded over the land like a divine spirit. The desire for national dissolution has become as obsolete as the desire for the reunion with Great Britain. Sixty millions of people live together in amity. There are no wars or rumors of war. The bird nests in the cannon's mouth, and this nation, twice established by the sword, is moving forward, under the providence of God, to an appointed destiny of grandeur and permanence far exceeding that of any contemporary, or of any of those ancient monarchies the wide arch of whose "ranged" empire has fallen into ruin.

The soldiers who secured our independence founded this institution. The soldiers whom this institution graduated were foremost among the chieftains who preserved this nation. Sacred forever be their memories! Through all time may the American youth receive into their heart of hearts the full conception of the example of Washington, Greene, Putnam, Grant, Sherman, Sheridan, and their companions in arms. History will reverently gather their ashes into her everlasting urn, and the land they saved will be one shrine to their memory.

While it is true that states are founded and preserved by force, it is also true that this action of military power ought to be infrequent. That nation is not far from dissolution or from loss of its liberties in which armed force is a thing of universal constant employment, or even of constant exhibition. It is the most decisive attestation of the permanency of our institutions that one can travel across the continent and not see a single soldier. A standing army of less than twenty-five thousand men in a nation of sixty millions of people is a thing unprecedented in any annals. The dissolution into civil life, at the close of the late war, of the greatest armies ever marshaled by any civilized state, without outbreak, without one effort by any chieftain to continue his military power, was a spectacle equally unprecedented. These men returned from a system of education in the rude school of war which immeasurably broadened their conceptions of the greatness of their country and of the blessings of its institutions. Sentiments of State fealty which had been parochial in their narrowness and which had dwarfed patriotism, were swept away by the realization that for us there is but one country, one flag, and one national government. In other words, the people taught themselves the supremacy of the national law.

What the citizen soldier thus taught himself it is your duty to remember. You are soldiers, but above all you are citizens. The authority with which you are dressed is subordinate to the civil law, of which you are but the chosen champion and protector. There is not a justice of the peace in the land who, within his jurisdiction, is not your superior officer. You are part of the civil government. To conceive yourselves otherwise is to make you outlaws. You will obey orders, of course, but the competent and patriotic officer gives no illegal orders.

And here applies in a very forcible manner the suggestion which I have made that your education has but begun, and that it is your duty to perfect it in all those branches to which your duties may pertain. I have a friend in the army, an officer, and not of high rank, whom I regard as one of the first publicists in all my acquaintance. I have often been struck in my conversations with General Sherman with his complete conception of the supremacy of the civil government. The regard of General Grant for law was a leading feature of his character. Andrew Jackson, after his victory at New Orleans, appeared before an incompetent and wrong-headed United States judge and paid his fine of $1,000 for contempt of court.

To this subordination of military power and rank to law the history of the last

year affords an impressive contrast in another republic. A soldier of some reputation, of great self-assertion, of many pretensions, of doubtful ability, and of singular powers of fascination, suddenly acquired great popularity with the French people. Using his military prestige as his basis, he demanded what he termed great political and constitutional reforms of the civil government. Every dethroned dynasty at once looked upon him with hope. His intimate followers regard him as the coming Napoleon. So dangerous does General Boulanger become that all the powers of the Government are employed in resistance to the political schemes of this single officer. Deprived of his military command, he is elected to the French legislature. The wily adventurer persists in his attacks upon established order. He is accused of a capital offense before the civil tribunals. He flees to Belgium, and from Brussels pulls the wires of his plot. Expelled from that kingdom, he takes refuge in London, and there perseveres in his intrigues. Vain would be the hopes of the people in you if you were taught anything here which could cause you to imitate this worst of all examples. Vain will be the hopes of the people in you if you fail to learn that your military training is but a portion of your equipment as citizens; if you fail to make it a principle of your conduct that your duty is to preserve the established civil government; if you fail by study and reflection to make these principles the very essence of your mental and moral organizations.

This is not the occasion to prescribe even the most general course of study. I can only advise you to pay particular attention to the civil history of this Government from the beginning. You will find this in its most attractive form in the biographies of the great statesmen who have shaped our domestic and foreign policies.

Learn thoroughly the principle that this is a Government of checks and balances; of Departments, executive, legislative, and judicial, co-operative and yet independent, and that it is profanation for any member of one of these to invade the precincts of the others. You will see in the course of these researches (they need not be extensive, and they can not be tiresome), with what prophetic wisdom our fathers constructed this glorious Constitution under which we have grown to be a nation exceeding great. It was made for three millions of people and for the region which lies east of the Alleghanies. Its panoply now engirts sixty millions of citizens. It contains a power of expansion which has adapted it to stupendous territorial acquisitions. We acquired from France a greater and more valuable domain than our ancestors wrested from Great Britain by the war of the Revolution. We bought Florida of Spain. We annexed Texas. We conquered and held a large portion of Mexico. We bought Alaska of Russia. The young Republic which lay between the eastern mountain slope and the sea, looked beyond the western horizon which girt him in, and, with a genius and power of acquisition greater than that of the Roman or the Spaniard, rose with the might of conquest, crossed the continent, established subsidiary republics in new States, clamped his possessions with the railways, those unbroken bands of iron; forced the activities and industries of the Atlantic slope down mighty rivers to the Gulf, and also overland into the bosom of the vast and solemn Pacific, and stands prepared to grasp the commerce of ancient Asia. With all this went the Constitution of the United States, not like a foreign system transplanted and imposed, but like the sky itself, covering all, and expanding continually before the path of this marvelous progress.

In all this the armies of the United States have performed a great part, and is it not well, young gentlemen, that you should profoundly investigate and thoroughly know the perfections of the scheme of government which made this possible?

But I will not detain you longer. We bid you hail and farewell, with the hope that in your career all the virtues of the citizen and the soldier may receive from each of you a brilliant illustration.

General W. T. Sherman delivered the diplomas of the Academy to the graduating class, after uttering one of his inimitable speeches. Those who received diplomas are as follows, the names being given in order of general merit:

*First class—49 members—graduated June 12, 1889.*

| Order of general merit. | Names. | State. Born in— | State. Appointed from— | Date of admission. | Age at date of admission. Years. | Age at date of admission. Months. | Order of merit in— Civil and military engineering. | Law. | History. | Spanish. | Ordnance and gunnery. | Discipline. | Demerit for the two years ending May 31, 1889. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *1 | Winslow, Eben E. | D. C | Mass | June 14, 1885 | 19 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 0 |
| *2 | D'Armit, Albert M. | Pa | Iowa | Sept. 1, 1885 | 20 | 9 | 2 | 3 | 2 | 5 | 2 | 5 | 11 |
| *3 | Flagler, Clement A. F. | Ga | Iowa | June 14, 1885 | 17 | 9 | 4 | 7 | 4 | 4 | 3 | 27 | 85 |
| *4 | Harding, Chester | Miss | Ala | do | 18 | 5 | 3 | 19 | 27 | 24 | 14 | 4 | 10 |
| *5 | Harts, William W. | Ill | Ill | Sept. 1, 1885 | 19 | 0 | 8 | 13 | 8 | 14 | 11 | 20 | 60 |
| 6 | McGregor, Robert | Mich | Mich | June 14, 1885 | 20 | 5 | 5 | 11 | 21 | 33 | 9 | 1 | 0 |
| 7 | Blake, Edmund M. | S. C | N. C | do | 19 | 5 | 10 | 14 | 7 | 12 | 8 | 1 | 0 |
| 8 | Martin, John T. | Ohio | Ohio | do | 19 | 5 | 7 | 12 | 6 | 21 | 4 | 1 | 0 |
| 9 | Wilcox, Francis W. | Tenn | Tenn | do | 17 | 9 | 20 | 8 | 9 | 29 | 13 | 23 | 73 |
| 10 | Ellis, Wilmot E | N. J | N. J | do | 17 | 9 | 22 | 6 | 10 | 11 | 16 | 34 | 201 |
| 11 | Kenly, William L., jr. | Md | Md | Sept. 1, 1885 | 21 | 6 | 9 | 35 | 48 | 19 | 22 | 18 | 57 |
| 12 | Haan, William G. | Ind | Ind | June 14, 1885 | 21 | 8 | 6 | 29 | 41 | 44 | 5 | 21 | 64 |
| 13 | Jordan, Sidney S | N. J | N. J | Sept. 1, 1885 | 17 | 7 | 17 | 15 | 12 | 16 | 6 | 3 | 4 |
| 14 | Bethel, Walter | Ohio | Ohio | June 14, 1885 | 18 | 6 | 15 | 9 | 15 | 7 | 7 | 2 | 1 |
| 15 | Sydenham, Alvin H | Iowa | Neb | Sept. 1, 1885 | 18 | 2 | 11 | 26 | 20 | 6 | 28 | 25 | 80 |
| 16 | Johnson, Ben | Miss | Miss | June 14, 1885 | 19 | 1 | 13 | 30 | 32 | 45 | 12 | 19 | 58 |
| 17 | Barroll, Morris K. | Md | Md | do | 19 | 5 | 23 | 20 | 17 | 27 | 17 | 1 | 0 |
| 18 | Harrison, Ralph | Mo | Mo | do | 19 | 2 | 21 | 4 | 13 | 15 | 18 | 22 | 67 |
| 19 | Skerrett, Delamere | Ohio | N. Y | do | 19 | 4 | 14 | 31 | 22 | 30 | 15 | 35 | 211 |
| 20 | McGlachlin, Edward F., jr | Wis | Wis | do | 17 | 0 | 18 | 21 | 23 | 26 | 26 | 17 | 55 |
| 21 | Campbell, Archibald | Pa | N. Y | do | 19 | 10 | 45 | 45 | 16 | 9 | 25 | 30 | 106 |
| 22 | Hains, John P. | Pa | At large. | do | 19 | 9 | 19 | 48 | 43 | 46 | 33 | 31 | 144 |
| 23 | Lassiter, William | Va | Va | do | 17 | 8 | 25 | 5 | 11 | 10 | 10 | 28 | 89 |
| 24 | Irwin, George LeR | Mich | Ill | Sept. 1, 1885 | 17 | 4 | 34 | 1 | 3 | 13 | 20 | 7 | 17 |
| 25 | Hagadorn, Charles B | N. Y | N. Y | June 14, 1885 | 19 | 3 | 12 | 38 | 47 | 41 | 36 | 13 | 43 |
| 26 | Rhodes, Charles D | Ohio | Ohio | do | 20 | 4 | 41 | 23 | 19 | 22 | 27 | 1 | 0 |
| 27 | Lee, Harry R. | R. I | R. I | do | 19 | 2 | 35 | 27 | 25 | 8 | 40 | 14 | 46 |
| 28 | Bookmiller, Edwin V. | Ohio | Ohio | do | 17 | 8 | 27 | 18 | 5 | 18 | 21 | 1 | 0 |
| 29 | Piper, Alexander R. | N. Y | Idaho | do | 20 | 3 | 28 | 37 | 48 | 43 | 23 | 7 | 17 |
| 30 | Winston, Eddie T | Tenn | Tenn | June 15, 1884 | 20 | 5 | 37 | 40 | 40 | 23 | 39 | 8 | 20 |
| 31 | Wood, Winthrop S. | D. C | Me | June 14, 1885 | 19 | 9 | 26 | 25 | 31 | 32 | 29 | 26 | 81 |
| 32 | Langhorne, George T. | Ky | Va | Sept. 1, 1885 | 18 | 1 | 24 | 28 | 29 | 37 | 37 | 33 | 198 |
| 33 | Kemp, Ulysses G. | Ohio | Ohio | June 14, 1885 | 18 | 5 | 31 | 32 | 49 | 2 | 48 | 8 | 20 |
| 34 | Peterson, Matt R. | N. C | N. C | do | 18 | 10 | 40 | 17 | 18 | 25 | 24 | 3 | 4 |
| 35 | Cole, Edwin T. | Md | Pa | Sept. 1, 1885 | 19 | 1 | 29 | 24 | 24 | 28 | 19 | 10 | 23 |
| 36 | Phillips, William A | Texas | Tenn | do | 19 | 3 | 16 | 46 | 44 | 48 | 34 | 24 | 77 |
| 37 | Taylor, John R. M. | D. C | At large. | June 14, 1885 | 20 | 5 | 33 | 39 | 26 | 28 | 42 | 28 | 89 |
| 38 | Kirkman, George W. | Texas | Ill | June 15, 1884 | 17 | 4 | 36 | 16 | 14 | 20 | 41 | 36 | 312 |
| 39 | Lacey, Francis E | W. Va | Mich | June 14, 1885 | 17 | 3 | 38 | 13 | 37 | 40 | 31 | 19 | 58 |
| 40 | Cloman, Sidney A | Ohio | Ohio | do | 17 | 8 | 32 | 36 | 35 | 39 | 30 | 11 | 27 |
| 41 | Crawford, Charles | Ohio | Kans | do | 18 | 5 | 43 | 22 | 28 | 36 | 43 | 3 | 4 |
| 42 | Graves, William S. | Texas | Texas | June 15, 1884 | 19 | 2 | 30 | 42 | 38 | 42 | 32 | 7 | 17 |
| 43 | Webster, Frank D. | Mo | Mo | June 14, 1885 | 18 | 9 | 47 | 49 | 45 | 35 | 46 | 9 | 21 |
| 44 | Leitch, Joseph D | Mich | Nebr | June 15, 1884 | 20 | 4 | 42 | 33 | 39 | 47 | 45 | 16 | 50 |
| 45 | Burkhardt, Samuel, jr | Ill | Ill | June 14, 1885 | 19 | 9 | 39 | 34 | 33 | 31 | 44 | 12 | 30 |
| 46 | Normoyle, James E | Mich | Ill | June 15, 1884 | 18 | 3 | 46 | 47 | 42 | 34 | 38 | 6 | 14 |
| 47 | Stockham, Edward V. | N. J. | N. J | June 14, 1885 | 21 | 7 | 44 | 44 | 36 | 49 | 35 | 15 | 48 |
| 48 | Barrios, Antonio | Guatemala. | Guatemala. | Mar. 26, 1884 | 18 | 2 | 48 | 43 | 30 | 3 | 49 | 32 | 188 |

Mr. Barrios received his instruction as a cadet under the provisions of a joint resolution of Congress approved June 17, 1885. Mr. Charles Young, of Ohio, has since received his diploma as a member of the graduating class, he having "made up his deficiency in engineering to the satisfaction of the Academic Board before the 1st of September, 1889."

At the sixth session of the Board, the secretary, Dr. Arthur Edwards, was appointed to write the report of the Board, and, prior to publication, to send proofs to each member of the Board for revision and approval. That duty has been performed, and this report appears according to the specified plan.

At the eighth session of the Board, General Wallace read a paper of his own, setting forth his suggestions concerning proposed changes respecting education both in the Army and at the Academy at West Point.

## GENERAL WALLACE'S PAPER.

*To the Board of Visitors:*

GENTLEMEN: One can not say the Academy at West Point is above criticism; yet its courses of instruction do challenge the highest respect. And, when, in addition, the discipline, *esprit de corps*, and deportment acquired in the brief term of cadetship are considered, then, saying nothing of its history, respect for the institution rises to a degree of admiration.

### THE SYSTEM OUGHT TO BE APPLIED TO THE WHOLE ARMY.

The undersigned is not disposed to stop with the above judgment. The very excellences of the institution compel me to look beyond the Academy, and insist that the system underlying all its good results should be extended to the whole army of the United States.

### REASONS FOR THE EXTENSION.

1. The Academy at West Point was founded in 1808, when the population of the country was about 5,000,000. The population is now quite 65,000,000, while the total of graduates this year will be forty-nine. The inadequacy is self-apparent. General Grant said the number of cadets ought to be raised to one thousand. The opinion of the wisest soldier of his day leaves little room for debate, except as to how the addition should be made, and to what extent.

2. It is very remarkable that of a people martial in spirit as any in the world the youth most desirable for soldiers can not be induced in the present status of the Army to enter its ranks. Of the many reasons for this circumstance one must be given—as a rule, enlistment is the end of social standing. To cure the evil, every inducement to become a cadet—certainty of advanced education, hope of commissions, elevation socially—should be offered.

3. The amazing facts, (1) that there were 12,177 trials by general and inferior courts-martial during the year ending September 30, 1888; (2) that the increase of trials by inferior courts-martial in 1888 over trials by like courts in 1887 was 1,041;* (3) that of desertions there are on the rolls, waiting action, between 40,000 and 45,000; (4) that public opinion, if it does not actually justify desertion, refuses to condemn it, tell unerringly of an excess of unfit men in the Army, and that the excess is so great as to demand of Congress a speedy and thorough reform. Will a simple increase of cadets at West Point accomplish the purpose?

A better belief is that there can be no sufficient reform which does not make the service honorable to a private soldier; in proof of which every citizen interested in the subject is invited to a study of this Academy.

### IS THE EXTENSION PRACTICABLE?

The proposition is not to multiply West Points, but simply to extend the system of education and discipline at present governing in the Academy to the whole army. In that particular every fixed post in the country now or hereafter to be established might be converted into a military academy. To deny the proposition is to assert that text-books, blackboards, chalk, and pens and ink are a monopoly, and that this Academy exhausts the total of our young men apt for war. Then, as to instructors, we have been patient witnesses of the examinations of the first class this year, and have seen officers, themselves graduates, serving as teachers and examiners; and while their proficiency charmed us, we were unable to detect the slightest friction between instructor and pupil, or loss of respect on the one side or failure of sympathetic interest on the other. The conclusion is that the company officer is the true instructor for his men.

Indeed, given the right kind of men, if an officer should protest against the duty, he should be suspected of incapacity, and at once disposed of by retirment.

### ESSENTIALS TO THE RE-ESTABLISHMENT.

It ought not to be difficult to draft an act of Congress for the re-establishment of the army upon this line. No more ought one to look for perfection of the system except as, in course of time, the suggestions of experience present themselves for trial; yet it may not harm the general idea to mention some points of apparent need to it.

(1) Enlistments by State quotas upon the basis of population.

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* The figures are from the official report of the Judge-Advocate-General to the Secretary of War for 1888.

(2) Citizenship.
(3) Examinations preliminary to enlistment similar to those prevalent in the Academy for admission, including proofs of good character.
(4) A term of enlistment for five years.
(5) Courses of education similar to those now prevalent in the Academy.
(6) Company officers personal instructors of their men.
(7) Age for enlistment not less than eighteen nor more than twenty-two.
(8) Recitation rooms, text-books, and appliances for practice and illustration of studies provided by Government for every military post.
(9) Fixed hours of study and for recitations by each enlisted man not in arrest or on a duty making their observance impossible.
(10) Heavy penalties for humiliating personal treatment of enlisted men by officers, such as subjecting them to menial service, or to manual labor not strictly within the limit of honorable duty.
(11) Selections of a limited number (say three hundred or five hundred) of enlisted men at the end of their fourth year of service for transfer to West Point, there to undergo a course of final instruction extending through the fifth year; the selection to be from the entire body of fourth year men according to merit, determinable by established equitable rules.
(12) Honorable discharge at the end of the fourth year of service of all enlisted men not chosen for the final course at the Academy, together with ineligibility for their re-enlistment in time of peace.
(13) Commissions to fill vacancies in the lowest grade at the end of the academical or fifth year issuable to the men who prove themselves of the best standing and greatest general proficiency; all other modes of original appointment to the Army to be abolished. Seniority to govern promotions in time of peace.
(14) The men who fail of appointment at the end of the fifth year to receive diplomas in lieu of commissions, and be discharged from the service.

RESULTS OF THE SYSTEM.

Giving three officers to each company of one hundred men, a calculation, upon the hypothesis of an annual discharge of three thousand soldiers, can be easily made of the supply of commissioned officers furnishable by the new system. In a marvelously short period there would be officers ready-made for a million men. In the next place the popular dream of a democratic army is nonsense. Discipline implies despotism. It is not idle, however, to talk of an army democratic in personnel and sentiment. The retiracy of educated soldiers into the walks of civil life would, it is believed, accomplish this end. Certainly the present system does not contribute to it.

WEST POINT.

The foregoing is not aimed as a blow at West Point. If one thinks otherwise, the reply ought to suffice that the Army of the United States is not a toy kept for the amusement of anybody.

If this paper, submitted for consideration as a recommendation, should not meet the views of the Board, it may find favor enough to cause its embodiment in the formal report as a communication.

Very respectfully,

LEW. WALLACE,
*President of the Board of Visitors, etc.*

It will thus be seen that General Wallace proposes for our Army a system of schools which will call for an examination touching the common branches, like that in the Military Academy, failure to be followed by rejection. In other words, the system of selection designed contemplates a degree of proficiency in the common branches as a condition of enlistment. General Wallace's was heard with much interest, but at his special request no action was taken and no recommendations were made. The General gave as a reason for his request that the reform proposed is extremely radical, and time should be given to fairly consider it before it is either adopted or rejected. The Board voted that the paper should be made a part of this report.

At this same session a communication was received asking the chairman of the Board to formally present to the Academy portraits of Gen-

erals Grant, Sherman, and Sheridan, which, by the liberality of Hon. G. W. Childs, of Philadelphia, had been ordered and purchased, to adorn the cadets' mess, known as Grant Hall. It was found impossible to make this presentation a part of the graduation exercises, and after correspondence with Mr. Childs' representative, it was agreed to defer the presentation to some future but early date.* The portraits were, however, placed in position in Grant Hall, to await the formal presentation.

At the ninth session of the Board a communication was received from General Parke containing an extract from a letter to him written by Hon. Redfield Proctor, the Secretary of War. Mr. Proctor's message was as follows:

LETTER FROM SECRETARY PROCTOR.

PROCTOR, VT., *June* 10, 1889.

MY DEAR GENERAL: I was called home again from Washington on Friday by the continued dangerous illness of my son. I hoped until this morning that he might be so that I could go to West Point to-morrow afternoon and be with you Wednesday. If he improves so that I can, I will telegraph you to-morrow, but it does not now look probable.

I can not express my regret at being deprived of the opportunity to be present at the closing exercises of the year.

In behalf of the President let me thank the Board of Visitors for their attendance and services, and assure them that any recommendations they may make will be the subject of earnest and favorable consideration.

Please inform them and also your associates of my regret that I can not meet with you on Wednesday.

Very truly, yours,

REDFIELD PROCTOR.

GENERAL PARKE,
*Superintendent of the Military Academy.*

The reading of this kindly letter was received very gratefully and cordially by the Board of Visitors.

At this same session it was resolved to authorize General Wallace, Captain King, Dr. Edwards, and such other members as might prefer to remain after the graduating exercises and witness the reception and examination of cadet candidates and to see the encampment of the cadets. This authorization contemplated the duty of a report on the subjects involved, the same to be included in the general report of the Board.

At this session also the subcommittees filed their reports, and the secretary was authorized to edit, adjust, and print the same as parts of the general report. The following resolution was passed unanimously and a copy was ordered to be sent to the Superintendent of the Academy:

Whereas the Board of Visitors to the United States Military Academy for the year 1889 have been the recipients of many courtesies from the Superintendent and other officers of the Academy: Therefore

*Resolved*, That the thanks of this Board be, and are hereby, tendered to said officers for the courtesies and attentions which they have shown the Board as a body and as individuals.

The resolution was duly forwarded, and General Parke gracefully responded in a cordial note in which he said that "in behalf of the Academic Board and all officers of the Academy, I beg leave to tender our heartfelt thanks for this mark of appreciation of service rendered and duty performed."

* The presentation took place October 3, 1889, with appropriate and interesting ceremonies.—*Secretary B. V.*

The following resolution was passed unanimously, and it was ordered that after being signed by the president and secretary of the Board, it should be forwarded to the President of the United States:

*Resolved,* That in view of the extraordinary usefulness of Capt. W. F. Spurgin, as cadet Quartermaster and Commissary, the President of the United States be, and hereby is, respectfully requested to order that Captain Spurgin be retained in his position at the Academy, if not inconsistent with the interests of the service.

## IN GENERAL, AS TO BOARD SESSIONS.

The Board, as will be seen, held nine sessions as a body, and gave much other time to special sessions of the subcommittees, besides making thorough and repeated inspections of the departments assigned to the six subcommittees among which the work was distributed. This writer assumes to say that the Government never has had, as to its intent, a more pains-taking, thorough, and industrious Board. It has pleased some facetious parties to represent the average Board as but perfunctory, junketing "visitors" in the ordinary sense of that word. The Board did not include a man who would be willing to give his time to a useless service. The Board is almost the sole means of communication between this nursery of officers and the people from among whom the cadets came but yesterday. It is noticeable that recommendations of former Boards have been realized in the main in the most liberal sense. The letter from the Secretary of War already quoted will suggest to the candid reader the fact that the services of the Board are not considered to be in any just sense merely perfunctory, or a useless feature of the graduating season. Inspection of the reports of visitors for the past half dozen years—all of them able, thorough, and suggestive, and some of them real marvels of efficient labor and thought—show that the said reports contain recommendations respecting vital changes and improvements involving immense expenditures of money, which recommendations later took tangible shape in subsequent legislation and liberal appropriations by the Congress of the United States. The Board for 1889 looked into all departments as one jocular observer said, "from garret to cellar."

## PLAN OF THIS REPORT.

The plan of this report does not contemplate a rapid survey of the several topics distributed among the six subcommittees, and the relegation of the subreports and tables to an appendix where they will be overlooked, or at least appear to bear an obscure relation to the main subjects which will be discussed in the following pages. Each topic will be treated separately, and all documents relating thereto will be printed in their proper places, in close relation to the reports of the several six subcommittees. The preferable plan will thus render unnecessary the usual perplexing and confusing appendix.

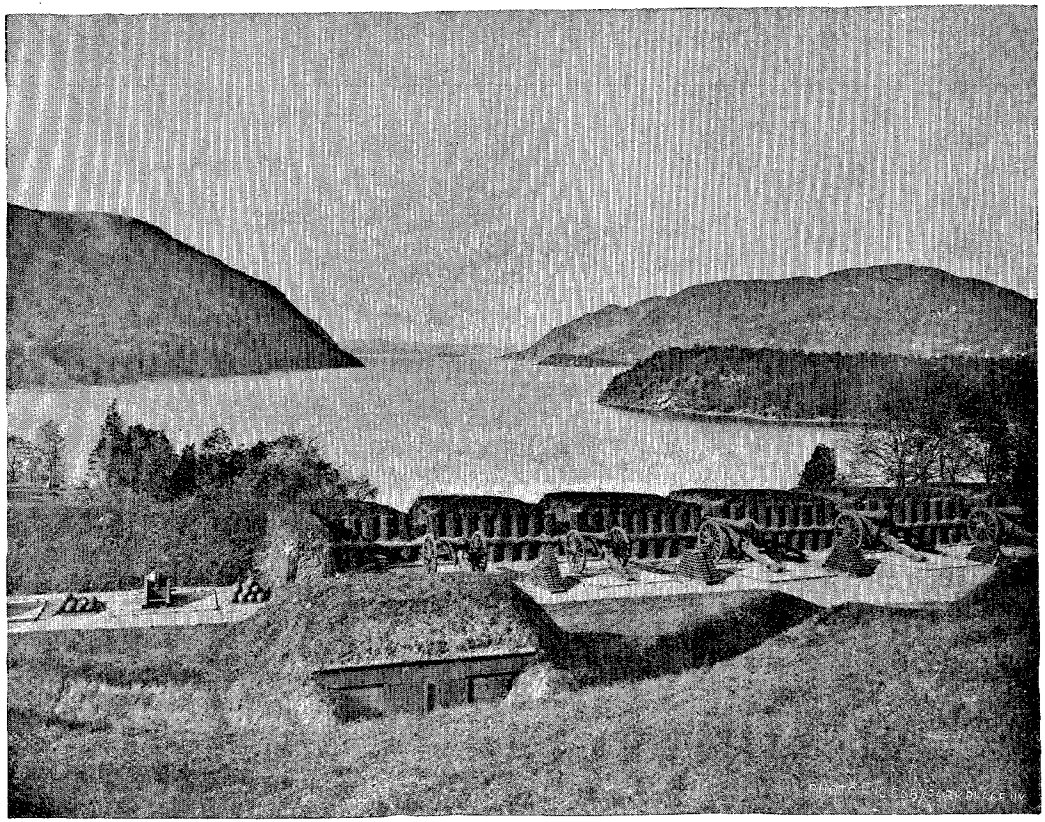
## I.—BUILDINGS, GROUNDS, AND POLICE ADMINISTRATION.

*On Buildings, Grounds, and Police Administration.*—Hon. S. M. Robertson, chairman; Hon. S. S. Yoder, General Lew Wallace, and Dr. Nathan S. Lincoln.

The various photogravure views printed in this report suggest but faintly and inadequately the fact that the United States Military Academy is located on one of the most picturesqe points, on the banks of one of the most beautiful rivers on the planet. Nature has done her most to make the place attractive, and the hand of man has gratefully accepted and tastefully adorned the spot, as if to make thankful acknowledgment of the bounty of The Creator. As far as the "grounds" are concerned, they suggest the obligatory provision of symmetrical, sightly, and adequate "buildings," just as the marvelous beauty of the King's daughter imply jewels and garments worthy of her bridal and her dowry.

About 2,400 matchless acres, made up of the original site and of subsequent purchases, include every aspect of cultivated plain, towering mountain, swelling hill, and secluded glen. Almost impassable mountains on the north and west, the Hudson River on the east, and an easily controllable area of 225 acres on the south, recently purchased from the Kinsley estate, shut in this village of scholars, the fruits of whose knowledge and personal service are dedicated to the Republic. Our country cares not to invite or employ the mere soldier of fortune whose mercenary sword is drawn indifferently for the cause that pays him most. She prefers to choose her cadets from among the children of the people, and, selecting the best, to train them by her own chosen methods and trusted teachers. Here, in an atmosphere which savors of war, but War only for the sake of Peace, the Republic shapes her embryo army leaders who study war only that they may defeat those who aim to defile our traditions of scholarly peace and prosperous commerce. The place and the scene are worthy of the aims of the Government and of a peaceful people who dream not of conquest but desire solely to repulse the ambitions of intruding foes. Battle and siege are not the trades of American soldiers, save as conserving forces. West Point is not a frowning fortress, but rather a peaceful area, too valuable for a farm, and too beautiful for earth-works and bastions, save for the historic outlines of revolutionary forts which are preserved as mementoes of the war in which noble men gave their lives to build a home for Liberty.

Many fine buildings are worthy of the worthy site. The barracks are solid, comfortable, and adequate. Erected some time ago, they lack some modern features which are named in the subreport presently to be quoted. The hospital for cadets is substantial and modern. Though far too large for habitual use, it is wisely designed to meet the demands of a conceivable emergency. "Grant Hall," used for a cadets mess, is ample, and three times a day is like a home where plenty is spread, and in most cases a greater plenty and better than in the original homes of the cadets. The library is barely adequate, and will demand attention



VIEW FROM WEST POINT, LOOKING NORTH, WITH SIEGE BATTERY IN FOREGROUND.

at some early date, as will the chapel also, which should be sufficient to contain thrice as many persons, particularly when inhospitable weather forbids the assembling of a crowd at commencement times. Provisions have been made for a new academic building and gymnasium, and other improvements will follow in due time. As much as has been done, and as much money as has been appropriated and expended for buildings, still more should be voted willingly and without stint. We have but one military school, and but one school for the Navy, whereas other nations have several. Great Britain has her Royal College at Woolwich to train her artillery and engineer officers; one other at Sandhurst to train her infantry and cavalry officers, and her staff college at Sandhurst, besides about seven other military schools for various other branches of the land service. France has her various military schools at Paris, St. Cyr, Fontainebleau, Saumur, La Fleche, and elsewhere. Prussia has her eight schools at Erfurt, Potsdam, Neisse, Engers, Cassel, Hanover, Anclam, and Metz, besides the War Academy at Berlin, her senior cadet school at Berlin, and six other cadet schools as preparatory to the senior one named. To these are to be added half a dozen others for various departments which sustain the reputation and efficiency of that wonderful German army. Austria, Russia, Spain, and Italy, and other powers are bountifully supplied with their fine warlike nurseries. The United States, if they do not care to follow these European hints, can well afford to build up and sustain our one and only cadet Military Academy to the highest point of efficiency, as a hint to all the world that if we are not eager for war, we are, therefore, all the more able to arm a half million men quickly, and, if need be, give leaders to this host, and to still larger hosts who shall be second to none in the highest arts of honorable and scientific war. At any rate, our Government may accept a hint from examples in civil life and from those who are giving about two millions a year as free gifts to the schools that train our citizen youth in the arts of peace. It is a matter of record that the free gifts of the people to their schools within the past decade are more than the entire cost of West Point since Washington, Hamilton, and Knox, and others laid the foundations of the Military Academy. Of course, these free gifts are from the many and for the benefit of the many, but there have been times and there may be other times when in a just sense the material interests of all civil and military life may depend on the timely preparations made at the hands of those who have been trained at West Point and Annapolis. Many citizen officers in our various wars have acquitted themselves grandly, but we do not recall a single instance in which the independent leadership of our armies has been committed to any one not educated at the Military Academy. The only exceptions to this statement apply to those who served before we had any Academy. Even in those cases, the very heroes who led our patriotic armies were the first to suggest that we should immediately ordain one to supply their own conscious deficiencies of training in theory and practice.

The Government has done well and liberally, but, as in duty bound, this Board again points out some of the details with respect to which early and liberal action is requested.

The subcommittee appointed to consider the topics of "buildings, grounds, and police" presented the following, which was adopted and which we collectively emphasize:

## *REPORT OF THE SUBCOMMITTEE.*

*To the Board of Visitors:*

The committee on buildings, grounds, and police administration respectfully submit the following report:

They have made a careful personal inspection of the buildings and grounds and find that in many instances there exists a necessity, in many cases urgent, for the construction of new buildings sufficiently capacious to serve the purposes of the institution in its manifold branches of instruction and growing demands for proper and sufficient service. Feeling that this Academy should be progressive, keeping pace with the strides of the educational and material advancement of the day, and conscious of the evil effects of cramped and inadequate accommodations, so apparent here in several particulars, for the storing of supplies and quartering of officers and soldiers detailed for duty, your committee recommend that the Board urgently request Congress to make appropriation necessary to construct the following buildings:

| | |
|---|---|
| (1) One cavalry barrack (estimated cost) | $21,000 |
| (2) An addition to or extension of the building now used by the cadet quartermaster for storing cadet supplies (estimated cost) | 15,000 |
| (3) Three sets of officers' quarters (estimated cost) | 30,000 |
| (4) One quartermaster's store-house (estimated cost) | 18,000 |
| (5) One practice room for the Military Academy band (estimated cost) | 3,030 |
| (6) Twelve sets of enlisted men's quarters (estimated cost) | 14,400 |
| (7) One set of quarters for watchman at south wharf (estimated cost) | 1,500 |

The riding hall and stables are at present without any appliances for heating. In the winter season the tanbark is frequently frozen, rendering the riding extremely dangerous both to the horses and cadets. Your committee would therefore recommend the purchase of a steam heating plant, and the construction of a building in which to place the machinery. The estimated cost of this plant and building is $15,000.

### ELECTRIC LIGHT PLANTS.

The attention of the Board is especially called to the admirable and exhaustive report on the question of an electric light installation for lighting cadet barracks. Lieut. George L. Anderson has handled this subject with so much erudition, and with such a complete knowledge of the situation, that your committee desire here to return him their thanks for his valuable report. From the plan, specifications, and estimates accompanying this report, it is found that it will require an expenditure of $9,540 to accomplish the end desired. The Superintendent, through the adjutant, in his letter transmitting the report, informs the committee that "this improvement is recommended as of first importance, and it should therefore take precedence over all others submitted to the Board."

### ACCOMMODATIONS FOR THE PUBLIC.

The conspicuous absence of any accommodations for the visiting public impels the committee to strenuously urge upon the Board, in the name of common decency and humanity, to submit this question directly to Congress in a recommendation for the construction of two or more buildings for public use.

### HOTEL.

The hotel accommodations are far below the requirements of the great number of parents and friends visiting cadets. The hotel is ancient in its appointments, and the rooms uncomfortably small. No town or city being near West Point, the public is dependent entirely upon the old hotel here. On many occasions it becomes so crowded that six and eight persons are placed in a room 14 by 11 feet. In fact we have been informed by the clerk that this is the case now, at this writing. The matter is therefore respectfully referred to the Board for its action.

### POLICE ADMINISTRATION.

The excellent cleanliness of the buildings and grounds generally deserves the praise of the Board, and your committee have no recommendations or criticisms to make, but they feel that they would be remiss in their duty if they did not interpose objections here to the further use of the building now occupied as a hospital for sick enlisted men. It would serve better, perhaps, the purposes of the Black Hole of Calcutta, or the prison ships of Revolutionary fame. The absence of modern methods of ventilation

the presence of decaying timbers, its situation under the hills on a plane little above the tide-water of the Hudson, and the fact that it receives the moisture from an ever-flowing spring from the hills above, are apparent reasons for its unfitness; but when it is considered that during rains its cellars and foundation received a deluge of water from the hills, necessarily rendering it damp and unhealthful, your committee express their surprise that any of the unfortunate patients ever leave it alive.

What is said of this building is true of the many quarters of enlisted men situated in this locality and are reasons for the construction of the new quarters recommended above. There are many old, rotten, and dilapidated buildings now used by the quartermaster for store-houses; these are a disgrace to this beautiful post and should be demolished. As they stand at present they are a menace to health, breeding foul gases and germs of typhoid fever and diphtheria.

Your committee have in every instance received courteous and kind assistance from the officers here in their effort to gain information. The information forming the basis upon which the recommendations of the committee were made is contained in various communications from the officers of the Academy. Reference is made to them for further information, and with the request that they be considered a part of this report, and that they be printed in the proceedings of the Board.

Respectfully submitted.

S. M. ROBERTSON, *Chairman.*
S. S. YODER.
LEW. WALLACE.
N. S. LINCOLN.

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## CAPT. WILLIAMS'S RECOMMENDATIONS.

HEADQUARTERS U. S. MILITARY ACADEMY,
QUARTERMASTER'S OFFICE,
*West Point, N. Y., June* 8, 1889.

SIR: In compliance with your verbal request I have the honor to invite your attention to the following improvement deemed necessary at this Academy. They are, by direction of the Superintendent, enumerated in the order of their importance, and, as far as practicable, the amounts necessary for their completion are set forth:

Three sets of officers' quarters ..... $30,000

The quarters at the post are so limited that officers are not provided with an adequate allowance and much dissatisfaction results therefrom. It was hoped for a time that this condition would improve; but, on the contrary, it is growing worse. Until last year officers were reasonably well quartered, but now three families are living in attic-rooms, and unmarried officers are crowded into rooms originally designed for cadets. Notwithstanding this condition one set of quarters will no doubt be torn down, as it is on the site intended for the new gymnasium provided for in next year's appropriation bill. Few quarters have been built in recent years, though the number of officers has greatly increased, to meet the improved methods of instruction and new conditions of administration.

One cavalry barrack ..... $21,000

Beyond saying that this estimate is based upon a plan approximately determined on I will add nothing, as I understand full and satisfactory report will be made to the committee by the senior instructor of cavalry tactics.

One quartermaster's store-house ..... $18,000

The only store-rooms for use of the quartermaster's department on the post are old, rotten, and propped-up wooden buildings which were formerly stables. All material put in them deteriorates rapidly, and articles such as stoves, ranges, furnaces, pipe, etc., quickly become rusted and thereby greatly injured. Lumber is stored where it is impracticable to keep it dry, and when used in quarters warps and draws apart and injures the best and most costly work. Lime slacks and becomes worthless, and so I might continue through the whole category of stores used in the department.

In view of the urgent and necessary demands for a new cavalry barrack, the question has arisen as to what use we could make of the barrack used by that detachment, and it has been suggested that it might be converted into a quartermaster's store-house, thereby doing away with the necessity for a new building; but I wish to emphasize the fact that in construction it is not adapted to such uses; it is entirely too small, and its re-arrangement would be costly. The demand for the new building would continue, and the Government would still suffer loss of stores until the new building was erected. In my judgment, however, it would make a fine clothing room, and being in the immediate vicinity of the other buildings of the

quartermaster's department, it could be looked after by the same men as would care for other stores.

The clothing, which is that provided by the quartermaster's department of the Army, is for sale to officers and issue to enlisted men. It is now stored in the new quartermaster's shops for mechanics, as there is no other place for it unless it should be returned to the garret of enlisted men's quarters, whence it was removed by me a short time ago. The clothing, with other supplies, occupies in the new shops the space intended for the carpenters, and as a consequence a number of them work in an adjacent wooden building, which leaks until it is scarcely habitable at any time. From the same cause the painters have also been kept out of the room in the new shops intended for them.

About $1,000 would be required to fit up the present cavalry barrack for use as a general clothing store-room, and, as stated, the building should be in addition to the store-room here asked for.

This building has been recommended for years and the estimate is based on the cost of other buildings at the post of about the same capacity as the one referred to. The present cramped condition of the quartermaster department will certainly continue until relief is granted.

One practice room for the Military Academy band ..... $3,030.20

I inclose a letter from the adjutant of the Academy setting forth better than I can the necessity for this building.

Twelve sets of enlisted mens' quarters ..... $14,400

This estimate is based upon the actual cost of buildings suitable for the purpose for which they are intended. Their necessity is so urgent and evident that it seems unnecessary to dwell upon it. I will only say that married men, for whom these quarters are intended, are at this place essential; many of them are of the uttermost importance, and their services as mechanics more than compensates the Government for any outlay that may be made for their quarters, though such expenditures are in addition to their pay and allowances.

If we are to have married men they should be quartered; if not, much larger appropriations are at once needed, as it becomes at once necessary to do our work with civilians. The benefits, if any, resulting from such change are questionable. The experiment would certainly be costly and I think unsatisfactory. I will here say that I have in my office, drawing soldier's pay and allowances, men who as civilians would command from $1,000 to $1,400 per year if required to perform the same service as now.

For enlarging the conveniences of the cadet supply department..... Cost unknown.

This I am informed will be fully and satisfactorily reported upon by the quartermaster and commissary of cadets.

Broken stone for roads ..... $3,000

The necessity for this becomes evident to one traveling about the post in either dry or wet weather. When the weather is dry clouds of dust cover everything—grass, trees, buildings, and travelers; when wet, mud is formed from the dust.

Recently I have been purchasing broken stone and I find it cheaper than the cost of excavating and hauling what is here known as gravel; besides, when gravel, so called is hauled in it must be repeated after every rain. Broken stone makes a permanent road, and after a long trial in this vicinity has been found to be perfectly satisfactory.

One set of quarters for watchman at South Wharf..... $1,500

This building is a matter of economy. With it one man can do the work of two, and by placing in it a married man the water-closets for the public can be properly attended to.

Enlargement and repair of the West Point Hotel ..... No estimate.

The Superintendent is not prepared to submit any estimate of the cost of such improvements. It is thought that the cramped condition of the hotel and its inadequate accommodations will appeal to the committee, and such action will be taken as may be necessary. It is well, however, to state that this building was primarily intended to accommodate parents, relatives, and friends of cadets, and representatives of the Government when visiting the Academy in their official capacity. It would therefore seem that so large a portion of the public should be entitled to consideration at the hands of the committee.

The hotel was erected in 1829, and has been very little enlarged since. It is altogether too small and fails entirely to satisfactorily fulfill the present conditions.

Very respectfully, your obedient servant,

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster, U. S. Army.*

Hon. S. M. ROBERTSON,
*Chairman of Subcommittee of Board of Visitors,*
*On buildings, grounds, etc., of the U. S. Military Academy, West Point, N. Y.*

## CAPTAIN DORST'S RECOMMENDATIONS.

WEST POINT, N. Y., *June* 6, 1889.

SIR: I have the honor to give the following reasons for the advisability of erecting new cavalry barracks near the stable, and also of heating the riding hall and stable. The distance from the present barracks to the stable is nearly three-quarters of a mile. In the summer the duties of the cavalry detachment are lightest and the distance is not a matter of much moment, but in winter the men commence work at 6 o'clock in the morning and are kept at it with little interruption until after 6 o'clock in the evening, and the matter of tramping back and forth for meals alone becomes of considerable importance. The men then frequently have to face the most inclement weather, sometimes breaking a pathway through the snow in a storm before day light while going to morning stable duty. Then, chilled and numbed with cold, they have to work in an extremely cold stable from an hour to an hour and a half in grooming horses, cleaning stables, etc., after which they return to their barracks for breakfast. This takes them till nearly 8 o'clock. By 10 o'clock a detail of about a dozen men must go to the stable to saddle and bridle horses for cadets that ride from 11 to 12 o'clock. After this ride is over the men have barely time to rub off the horses, go to barracks for dinner, and return and prepare another set of horses for cadets at 2 o'clock. At 3 o'clock they must have another set ready and at the same time rub down the lot that has just come off duty, and at 4 o'clock they must have still another set that are used till 5:30, and after that time these last must be rubbed down, after which the men go nearly a mile again for their supper.

In the afternoon the remainder of the men who are at barracks must come to the stable to groom and water the horses, put down bedding, etc. During the time the cadets are in the hall the men on duty must be there, too, to look after the heads and hurdles, to be ready to hold the horses during the gymnastic exercises, and to be of assistance generally. The soldier gets thoroughly chilled in coming from barracks to his work, and in a cold stable and cold riding hall he remains chilled through all day long.

To show some of the effects of this traveling to and fro I wish to invite your attention to the fact that during the past winter ailments such as bronchitis, laryngitis, and tonsillitis were very common among the men of the detachment, and in addition eight of them have been quite sick and in the hospital with rheumatism. Of the latter, one, the first sergeant, has been sick for nearly five months. About six weeks ago he took a furlough for two months awaiting recovery. He was then just able to walk about. Another has been sick for three months, and is now barely able to perform light duty, while a third has been sick most of the time for the past six months, especially since about the 1st of March, and the doctor has advised that an application be made to have him sent to Hot Springs, Ark., for further treatment.

The question of having new barracks near the stable has been urged from time to time for the past thirty-six years. It is not the fault of the officers of the Academy that it has not been erected. As to the old barracks, it will neither be abandoned nor torn down if a new one is built. The quartermaster of the Academy tells me that there are several ways in which he can make very good use of it.

One hears of desertions in the Army, and our friends in civil life are apt to lay the blame on the officers. When a Government does not provide for the health, comfort, and welfare of its employés it may be that some blame attaches to the Government itself.

The stable is cold and damp in winter, and the riding hall is worse. The temperature of the stable is frequently so low that the liquid excrement of the horses remains frozen for days at a time. As a consequence colds, coughs, and rheumatism are common. Last winter one horse died of pneumonia, another came very near it, while a third was laid up for about four months with a severe case of distemper. Horses should not be kept in a temperature lower than 50° Fahrenheit. The cold weather makes them nervous, restless, and excitable and hard to manage at riding. As the men have to do their regular post guard duty in addition to stable duty, and they have two or three times as much work to do as an ordinary troop of cavalry, and more than they can do properly, the horses do not receive the best of care from them. Partly from that cause, perhaps, partly from artillery duty, also, and particularly, I believe, on account of the cold, unhealthy condition of the stables, the annual percentage of loss of horses, taken from the records for the past seven years, has been nearly 20 per cent. (actually 19.88 per cent.). This, of course, includes horses that have been condemned as unserviceable. I venture to say that this loss is greater than that of any regiment of cavalry for the same period, with all the hardships and casualties due to Indian campaigns.

The usual objection to any innovation involving expense is that the old system always answered very well, and that there is no good reason for change. These sta-

tistics show that the old system has not only not been a good one, but has actually been detrimental.

As to the riding hall, it is usually colder than the outside air, except when there is a wind blowing. The tan-bark absorbs moisture from the soil during the winter, as no water is then put on it, for it would freeze. The moisture in the tan-bark becomes congealed like frost, the horses traveling over it pack it like wet snow, and we then have a slippery surface with a thin dry layer of tan-bark dust over it. This prevents any fast riding, athletic exercises, or hurdle jumping, and is the common cause of many accidents to cadets. During my own service as a cadet at least one fracture of the leg was caused by a horse slipping on this frozen tan-bark, and winter before last Cadet Winslow had his leg broken by a horse slipping in the same way. It has been urged that other material than tan-bark, such as sawdust, sand, etc., could be substituted for tan-bark, but they have been tried and found not satisfactory. If they are moistened they will freeze like tan-bark, and if not moistened they fill the air with dust that fills the eyes and nostrils of both cadets and horses and causes injury to them. The obligations of common humanity alone require that the stables and riding hall be heated. In this connection I will say that no gentleman who owns horses and has the means to care for them would think for a moment of placing them in such a cold stable as the one here, and no gentleman able to care for his servants would think of exposing them to such risks as are imposed on the cadets in the riding hall, or would permit them to suffer such discomforts as are borne by the men of the cavalry detachment. It is the duty of the Government to take the best care of them. And further, I think it proper to say here that as the men of the detachment have more work to perform than they can do properly, it is essential that they be relieved from all duty at the post, except that connected with the care of the horses. They do post guard duty, and are frequently called upon for different kinds of fatigue work, and such duties are entirely distinct from their duties as cavalrymen. A company of infantry should be ordered here for the purpose of performing the guard and other military duties of the post, and the cavalry detachment should be under the control of the commandant of cadets, and required to do no work except that imposed by him.

The infantry company might occupy the present cavalry barracks after the new one is built.

Finally, as it has often been complained that there is not sufficient accommodation for the spectators in the riding hall, I recommend that broad galleries be built across the ends of the riding hall extending from side to side. The extension of the present galleries along the sides of the hall is objectionable because they interfere with the light on the track below. I have found this particularly to be the case on the north side, and have several times recommended that on that account the gallery on that side be removed.

A plan and estimate for heating the stables and riding hall were prepared by me eighteen months ago, and are now probably in the Superintendent's office.

It would require the purchase of a new plant for making steam and the erection of a small building for the plant. The steam plant now used to heat the cadet barracks could not be used, because the stable and riding hall are below it.

The plant must be placed on a lower level than the buildings to be heated. The total estimate cost is $15,000, and with this plant the proposed barracks could also be heated.

I have not yet mentioned the subject officially, but I have thought the instruction in riding could be much facilitated if there were two riding halls instead of one. With the admission of the new States and the consequent increase in the number of cadets, an additional riding hall becomes a necessity.

Very respectfully, your obedient servant,

J. H. DORST,
*Captain Fourth Cavalry,*
*Commanding U. S. Military Academy, Detachment of Cavalry.*

Hon. S. M. ROBERTSON, M. C.,
*Chairman Committee on Buildings, etc., Board of Visitors.*

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HEADQUARTERS UNITED STATES MILITARY ACADEMY,
QUARTERMASTER'S OFFICE,
*West Point, N. Y., June* 10, 1889.

SIR: By direction of the Superintendent I forward the inclosed copy of a report by First Lieut. George L. Anderson, Fourth Artillery, on the subject of introducing into the cadet barracks the electric light. The Superintendent desires me to say that he is not yet prepared to recommend the *substitution throughout the post of the electric light for the gas used* in the present system. He also directs me to add that this im-

provement is recommended as of first importance, and it should therefore take precedence over all others submitted to the Board.

Very respectfully, your obedient servant,

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster, U. S. Army.*

Hon. S. M. ROBERTSON,
*Chairman of Subcommittee of Board of Visitors on Buildings, Grounds, etc., of the U. S. Military Academy.*

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## ELECTRIC LIGHTING—LIEUT. GEORGE L. ANDERSON'S STATEMENT AND ESTIMATES.

In obedience to verbal instructions received from the Superintendent of the U. S. Military Academy, I have the honor to submit the following report and estimate of cost of an electric-light installation for lighting the cadet barracks at West Point, N. Y., with a view to its possible extension to other public buildings, as recommended by the Board of Visitors of 1887. One of the reasons which have led to a consideration of this method of lighting barracks is the fact that the gas-works at the post are not large enough for present requirements. Although run to their full capacity, the single gasometer is nearly exhausted at 11 p. m. during a great part of the year. In winter a certain number of lights on the streets are often turned off to preserve the supply. The stoppage of a main at any time, or other accident sufficiently serious to interrupt the manufacture for a few hours, would cut short the amount nightly consumed and leave the whole or a portion of the place in darkness.

That no inconvenience, due to some slight cause, has occurred within the past three or four years has been owing to good fortune rather than to the excellent management of the works. To make them answer present needs, the first and most expensive item would be an additional gasometer, at a cost of about $5,000.

Cadet barracks use one-third of all the gas consumed at the post. The barracks and mess hall together take four-tenths. An electric-light installation would, of course, relieve the present gas plant to this extent. Other considerations relating to the subject are:

(1) The incandescent lamp consumes no air; it does not heat, and it is steadier, safer, and cleaner than gas. The 8-foot gas-burner in each cadet room, 22 by 15 by 10 feet, vitiates about 640 cubic feet of air per hour. Is consumes as much good air as eight persons, and produces twenty times more heat than the electric lamp. The heat of the gas-burners is alleged to be the cause of much headache in the corps.

(2) Complaints of soreness of eyes are made by about a dozen cadets every three months. Out of an average of two hundred and eighty-five cadets, twenty-eight with eye affections consulted the post surgeon with regard to them during the three months ending January 31, 1887. They are using the argand burner and the best quality of gas, so that improvement may be sought in the direction of another kind of lamp. Owing to the position which may be given it, a 16-candle incandescent light will throw a stronger and steadier light upon a table than an upright gas jet of the same power.

(3) A small electric plant will probably always be maintained, as at the present time, for lighting the riding hall, and for furnishing electricity to the departments for experimental purposes. The proposed system can also be readily extended to the library, which is now heated by steam, if it is sought to diminish in this way the chances of loss by fire of a building which is not fire-proof and which contains the most valuable collection of military books and papers in the country.

(4) The engine and dynamo will here run under the most favorable circumstances, in that they will each night take their full load at once and carry it until stopped, so that even better results may be expected than are obtained at most stations where early in the evening they run underloaded and later they become overloaded, two conditions which are not economical.

Some of the disadvantages of lighting barracks by electricity will be the first cost of installation, amounting to $9,540, which is probably in excess of the sum required to enlarge the gas-works, the transportation each year of 100 tons of coal one-half mile further than at present, and the addition of one more to the list of small buildings south of barracks. With only a single engine and dynamo to furnish the current, the system will be a little more liable to interruption from accident than the present gas system. The present gas-fixtures, however, need not be removed. The operating expenses, amounting to $1,225 per year, will be about the same as those of a gas plant doing the same amount of lighting. They will be for—

| | |
|---|---|
| One hundred tons of coal per year, at $3 | $300.00 |
| Services of engineer per year | 720.00 |
| Lamp renewals per year | 130.00 |
| Oil and waste per year | 75.00 |
| Total | 1,225.00 |

The expense of maintaining the two systems at the post will probably exceed that of either one performing the same work. The estimate is made for an installation complete in itself, consisting of a one-story stone structure, 30 by 35 feet floor space, a 45 horse-power engine, a 60 horse-power boiler, a continuous-current dynamo capable of maintaining four hundred 16 candle-power lights, the wiring for the system, and all the necessary minor appliances.

The place suggested for the location of the building is in rear of the boiler-house chimney, as indicated in the accompanying map. This is near enough barracks to prevent a greater loss than one-tenth of the coal in the copper mains and sufficiently removed to prevent noise. If located at any other point in the area, the engine would be heard in the barracks, especially in summer when the engine-room windows were open. Less noise would be heard if the engine and dynamo were properly laid on a bed of earth, 4 or 5 feet in thickness, in the basement of angle of barracks, where there is already a chimney, where the cost of a building and copper mains would be avoided, and where the boiler might be utilized in heating water for the bath-rooms. Or the stable near the boiler-house might with some alterations be used for the purpose.

So far as the electric plant is concerned, the basement of the new academic building would be a good position. On account of the central position of this chimney with respect to barracks, the departments and riding-hall, and to the mess-hall, library, and other buildings in case of subsequent extension, it is believed that if an electric-light building is ever erected its location will be so near the one suggested as not to alter the present estimate. Coal can be conveniently discharged at that point and the flue of the chimney can be utilized. Steam can not be taken from the heating boilers without considerable outlay in alterations. The highest pressure now obtainable is 25 pounds per square inch, while the pressure required for the engine will be not less than 80 pounds. To adapt to 80 pounds pressure it will be necessary to place reducing valves in the pipes to increase the draft by raising (at a cost of $700) the underground flue leading to the base of the chimney, and to overhaul the heating apparatus of four buildings in order to meet the increased strain. These changes would, however, lead to economy of fuel for heating.

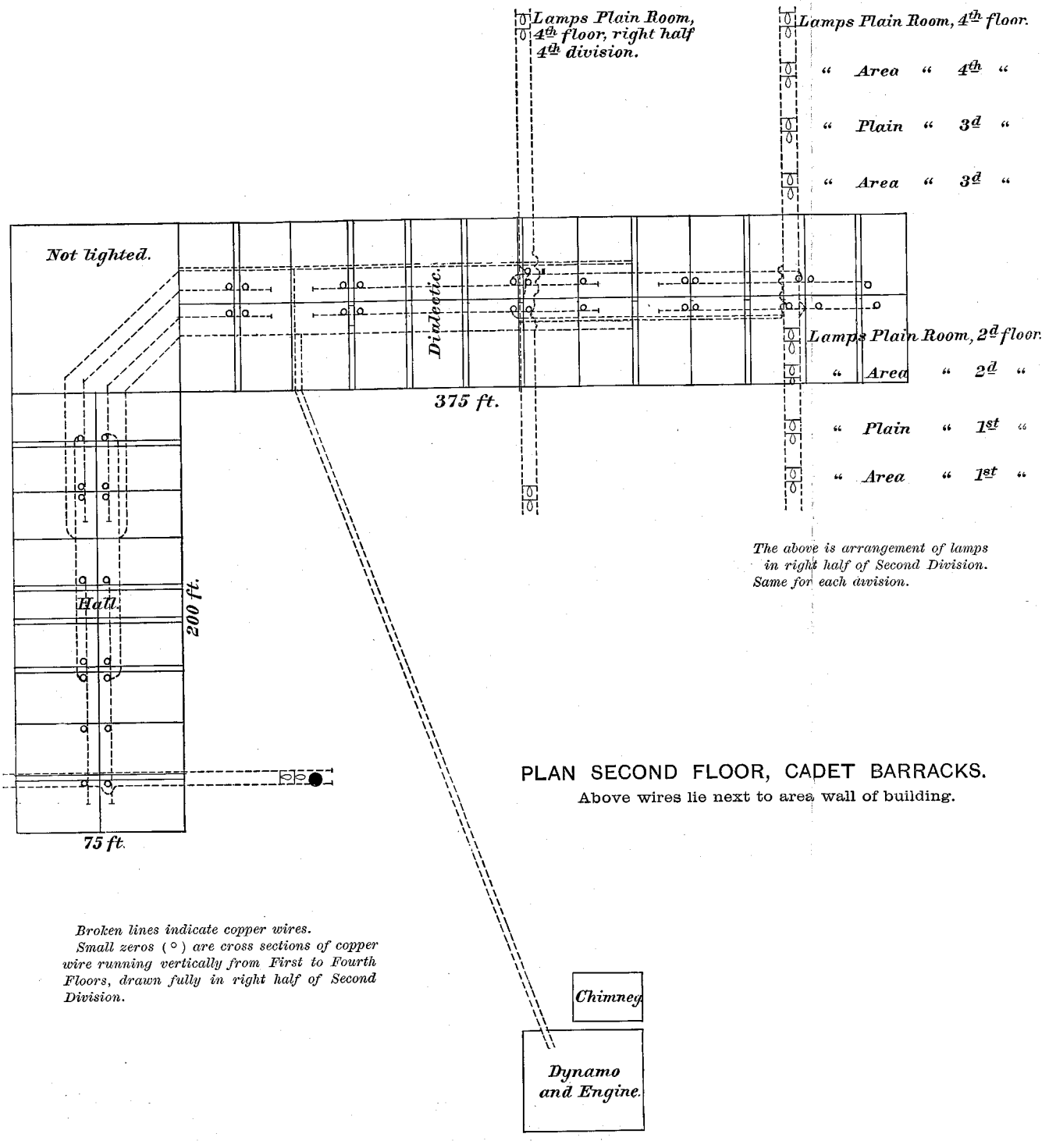
The building is recommended to have 30 by 36 feet floor space, walls 15 feet high, 20 inches thick, and of cut granite, and a slanting double roof of non-combustible material, and to be divided into two compartments. One of these shall contain the boiler, furnace, and coal, and be furnished with a ventilator; the other will have the engine, pump, and dynamo and additional room for two small dynamos, which may be belted directly to the engine. There are to be no windows or doors on the side towards barracks.

A 60 horse-power horizontal boiler of flange steel having not less than sixty 3-inch tubes, is provided—larger than that actually required for the engine—for economy of fuel. It should have a 30-inch dome, three heavy cast-iron supports, and one heavy cast-iron front with furnace doors, two ash-pit doors, and two doors opposite front boiler head, together with all necessary fixtures. The fittings will consist of one 4-inch safety-valve, one 2-inch cock, one 1-inch feed-valve, one 1-inch check-valve, one 8-inch dial steam-gauge, and one water-gauge with three gauge cocks. The tensile strength of the steel of the boiler should be not less than 60,000 pounds, and the boiler guarantied a test of 150 pounds per square inch hydrostatic pressure. The walls of brick around the boiler will be 20 inches thick, including 4 inches air space, the flue returning over the top.

The bridge wall will be 20 inches thick and topped with fire-brick, and the furnace lined with fire-brick.

The engine is to be a 45 horse-power straight-line engine, with steam-cylinder of 9½-inch bore, with a 12-inch stroke and an automatic cut-off. It is to have a continuous feed oiling apparatus, a steam stop-valve, drip valves for cylinder and steam-chest, and two band fly-wheels of 11 inches width and of suitable diameter to transmit directly the required speed to the dynamo. The engine should be capable of a uniform speed of three hundred revolutions per minute under an initial steam pressure of 80 pounds. It is to be belted directly to the dynamo by a 10-inch, light, double, endless, and rivetless belt. The diameter of steam-pipe is to be 3 inches, and of exhaust pipe 3½ inches, and all exposed steam-pipes are to have a covering of hair felt asbestos paper and canvas not less than 1 inch thick. With the engine and boiler there will be furnished one 4½-inch duplex feed-pump, one Korting double-tube injector, and one feed-water heater, 20 inches diameter, 36 inches long, with 1-inch brass circulating coil. The pump is set on a single stone foundation. The exhaust from the engine will pass to the heater, thence to the chimney. The exhaust from the pump will also pass to the chimney to prevent noise.

The estimate is made for a shunt or compound wound, direct current dynamo machine with either hand or automatic regulation, which shall be capable of generating a current of two hundred amperes with a potential difference at its terminals of 125 volts, and to be one of the two or three patterns most generally used throughout




PLAN SECOND FLOOR, CADET BARRACKS.

Above wires lie next to area wall of building.

the country. Its pulley, of about 13 inches diameter and 10 inches width, should make not less than thirteen hundred revolutions per minute, and the insulators of its coils such that after one hour's run on full load, the resistance between the frame of the machine and the field circuit, armature and brushes, or between the series and short coils, if compound wound, shall exceed one-fourth megohm. The commutator should belong to a class not rapidly worn or its wearing parts should be removable. The dynamo, provided with belt-tightening apparatus, will set on solid masonry, from which it is insulated by a heavy, well-varnished board. The masonry foundation of dynamo and engine will, if practicable, rest on earth as a preventive of noise. For use with the dynamo there are provided a regulator made from German silver strip or wire, an ampere meter reading to 250, a potential indicator, a magneto bell which will ring through 10,000 ohms, and a speed indicator. The wiring is to be on the two-wire distribution system as diagrammatically given in the map.

From the dynamo the mains lead directly to a point on the second floor, midway of the building, thence in either direction along the area side of the barracks to other distribution points. The conductor, insulated throughout, is to be of the best soft copper of 97 per cent. conductivity, and of a cross-section not less than at the rate of 750 amperes to the square inch, and for a single lamp a No. 16 wire. The insulator must be capable of resisting abrasion, be durable, and water-proof. All of the main leads are to be covered with hard rubber, wrapped in tarred hemp, and to have an insulation of 400 megohms per mile. Those extending from the dynamo to the barracks (each consisting of more than one wire, if the cross-section required exceeds that of 00 wire) will be inclosed in underground water-tight iron pipes fitted with insulating compound. The cross-section of copper will be increased, if the distance of the dynamo from the barracks is extended, so that the full of potential to the building shall in no case exceed 8 per cent. Large wires in the building are to be laid where they will not be liable to be disturbed, and to be separated 10 inches or more, if possible, from each other and from the gas and heating pipes; wherever they come closer special care will be taken to insulate and to prevent mechanical disturbance. Where they pass through partition floors, etc., an outer sheathing of wood or hard rubber is used to protect them. Wires in rooms may run in grooves beneath molding and separated by at least one-half inch. Molding in damp places and metal staples for fastening wire in any place are to be avoided. Every splice is to be soldered (using a 10 per cent. acid solution) and wrapped so that the cross-section will be greater than that of the wire. Its insulation must be at least equal to that of the wire. Wires of the same polarity belonging to different circuits or leading to or from a double pole switch require special insulation if run in the same groove, tube, or slot. The insulation of the whole circuit, including dynamo, from the ground ought not on a damp day to be less than 1 megohm. Every part of the circuit is to be protected by safety cut-outs located in dry and accessible places, free from rubbish, and inclosed in a fire and moisture proof box. A cut-out will be placed wherever a change is made in the size of the wire, and will have a current-carrying capacity such that it will interrupt any current stronger than that which the smallest conductor it is intended to protect can safely carry.

There will be a cut-out not far from where the main feeder enters the barracks. Any cut-out or switch carrying more than 5 amperes will be double pole. If either have points varying widely in potential, lava, porcelain, or some such material is to be used in its construction. The movable part of a switch will pass from one point of contact to the other through air and not rub along an insulatory surface. The contacts should press firmly.

The lamps furnished should have an average life exceeding one thousand hours and a guarantied life of six hundred hours, and of 16-candle power. In cadet rooms, they will slip into sockets with keys and suspend from a bracket of two joints so as to be movable above the table. Each will have a shade and shade holder. Whenever a lamp is placed in its holder, its number and the date should be marked on a piece of paper pasted on the lamp. In dialectic hall it would be preferable to attach the lamps without keys to a chandelier other than the gas chandelier. Other lamps about the hall will have keys. If, however, the electric wires are run here or elsewhere about gas fixtures, their insulation is to be moisture proof, not easily abraded, and to be specially tested for contact and ground.

After the installation for lighting barracks is completed, it will cost about $150 to place two additional arc lights in the riding hall; about $350 for four arc lights and wiring in mess hall, or about $650 for two hundred incandescent 16-candle power lamps and wiring in mess hall; about $500 for one hundred and twenty lamps and wiring in library hall, provided the electric machinery and material now on hand can be taken and utilized.

The following estimate of cost ($9,540) will cover the cost of materials, the construction of the building on the site selected, the complete erection of boiler, engine and dynamo, with their respective connections, under the direction of experts supplied by the contractors, and the running of the plant satisfactorily one week prior to its acceptance.

*The building.*

| | | |
|---|---|---|
| Leveling ground | $75.00 | |
| One hundred and twenty-five cubic yards granite stone quarried and dressed, at $4 | 500.00 | |
| One hundred and twenty-five cubic yards stone laid, at $3 | 375.00 | |
| Brick partition, 25 by 15 feet, and gable | 45.00 | |
| Flooring and sleepers | 70.00 | |
| Corrugated iron roofs and iron girders | 165.00 | |
| Two doors and four windows | 55.00 | |
| Ventilators | 50.00 | |
| Flue to chimney | 20.00 | |
| | | $1,355.00 |

*The boiler and engine.*

| | | |
|---|---|---|
| One 60 horse-power horizontal tubular boiler of steel, with fixtures and fittings | 1,050.00 | |
| One (9½ by 12 inches) 45 horse-power steam-engine, horizontal, with two band fly-wheels, as described | 1,800.00 | |
| One Duplex steam boiler pump, 4½ inches | 200.00 | |
| One double tube injector | 75.00 | |
| One feed-water heater, 60 horse-power capacity | 75.00 | |
| One automatic damper regulator | 15.00 | |
| One endless belt | 75.00 | |
| One hammer, one sledge, one vise, 1 pipe wrench, one monkey-wrench, one hand drill and oil cans | 20.00 | |
| | | 3,310.00 |

*The dynamo, wiring, lamps, etc.*

| | | |
|---|---|---|
| One four-hundred lamp, 16-candle power dynamo machine | 2,010.00 | |
| One adjustable base with belt tightener | 20.00 | |
| One hand rheostat | 335.00 | |
| One Ampere meter | 15.00 | |
| One potential indicator | 65.00 | |
| One dozen extra brushes | 25.00 | |
| Wiring as per description and map | 1,500.00 | |
| Four hundred lamps, 16-candle power | 330.00 | |
| Three hundred and seventy-five key sockets | 450.00 | |
| Three hundred and seventy-five fixtures or pendants, with shades | 375.00 | |
| Twenty-five sockets, without keys | 25.00 | |
| One speed indicator | 15.00 | |
| One magneto bell | 10.00 | |
| | | 4,875.00 |
| Total | | 9,540.00 |

Very respectfully, your obedient servant,

GEO. L. ANDERSON,
*First Lieutenant Fourth Artillery.*

A true copy:

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster. U. S. Army.*

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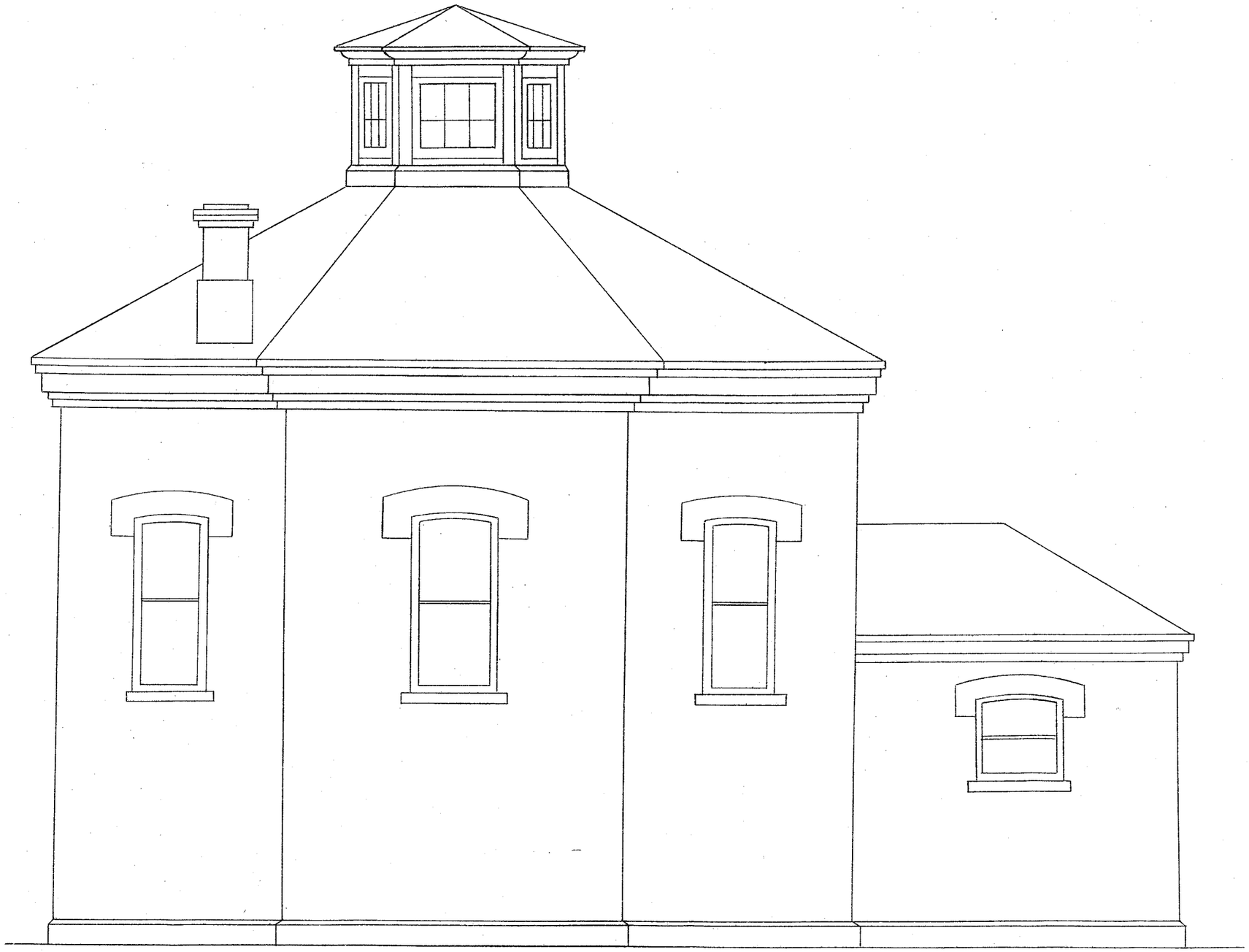
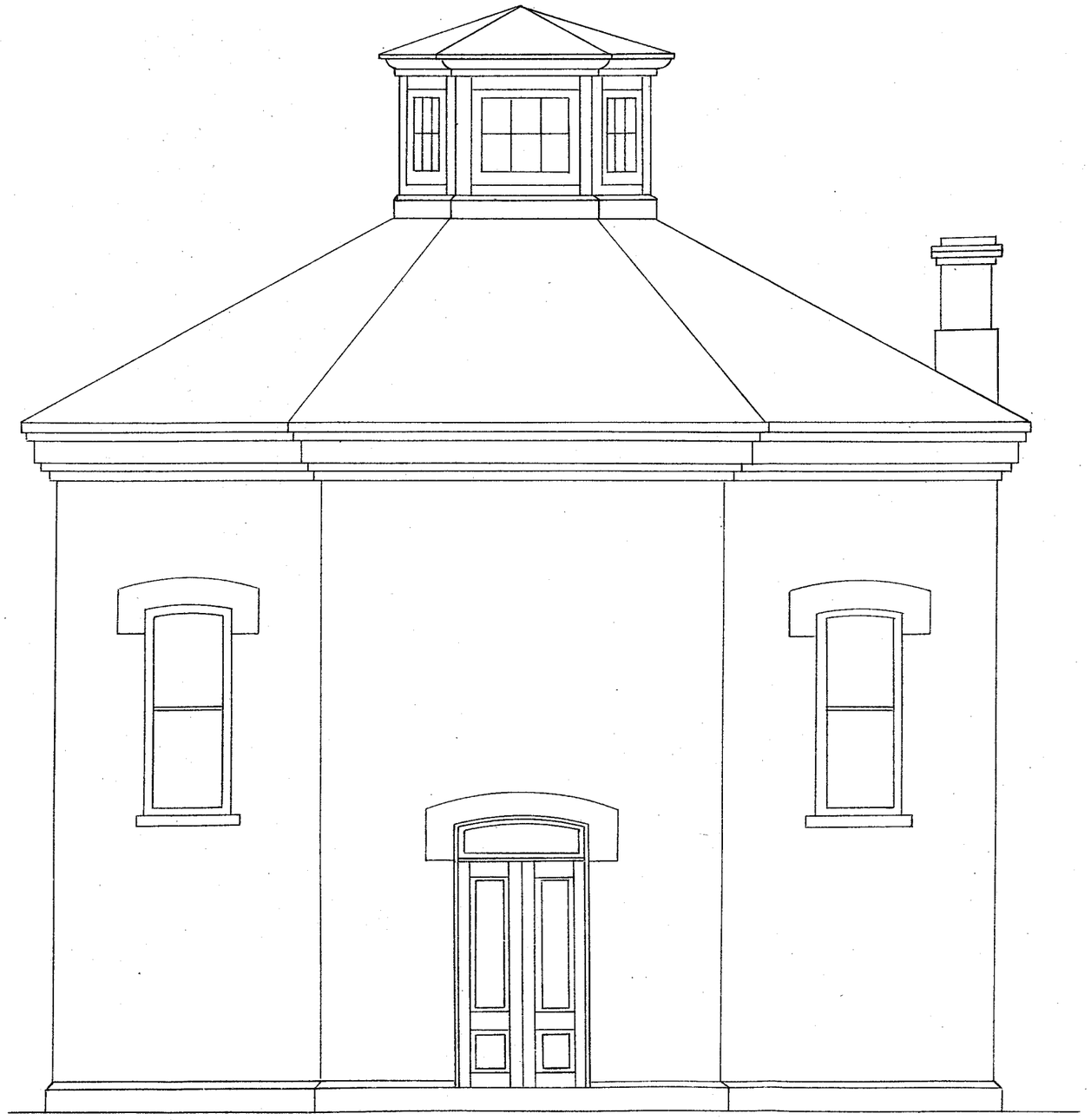
## BAND PRACTICE ROOM—ADJUTANT BROWN'S STATEMENT.

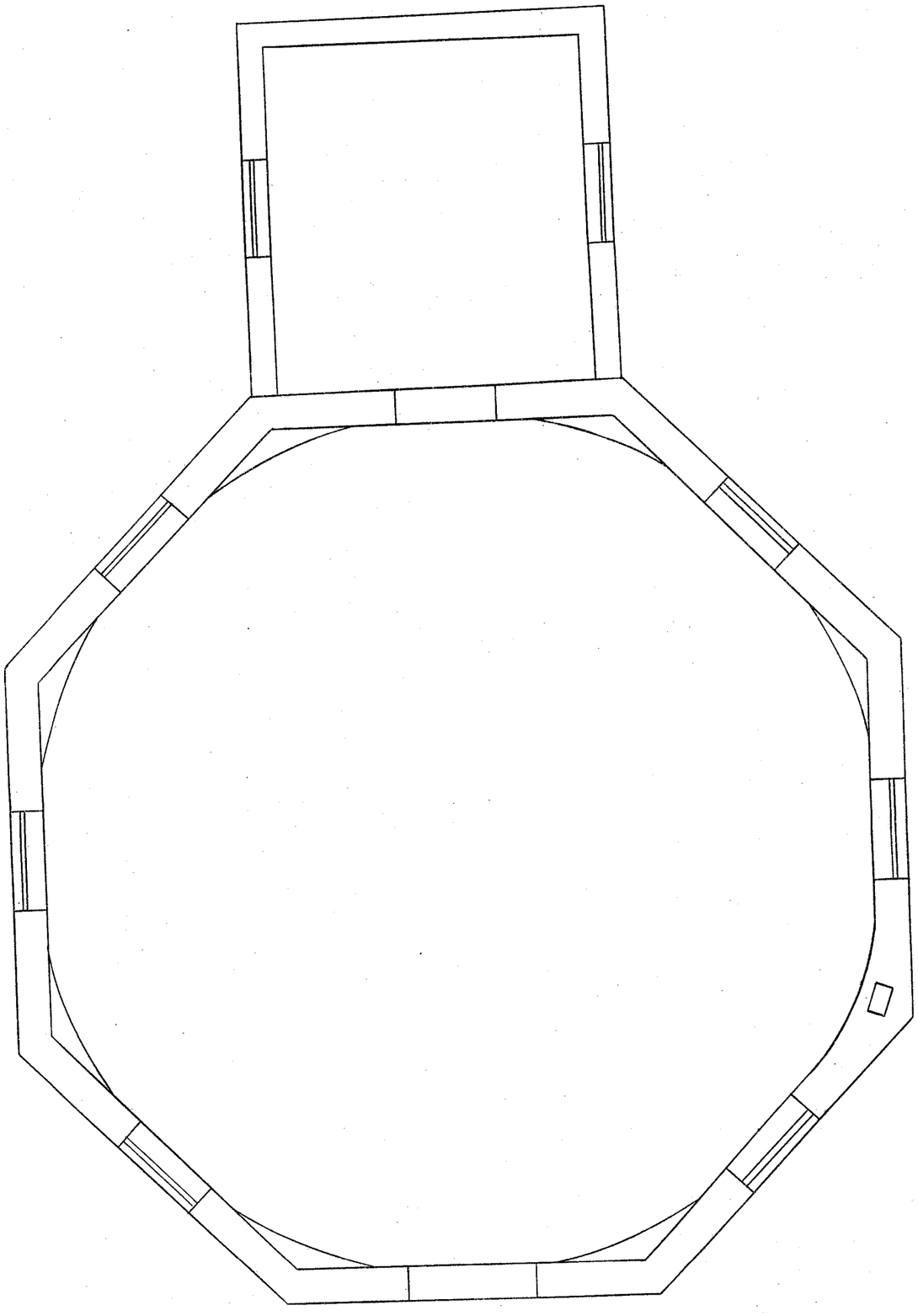
HEADQUARTERS U. S. MILITARY ACADEMY,
*West Point, N. Y., May* 14, 1889.

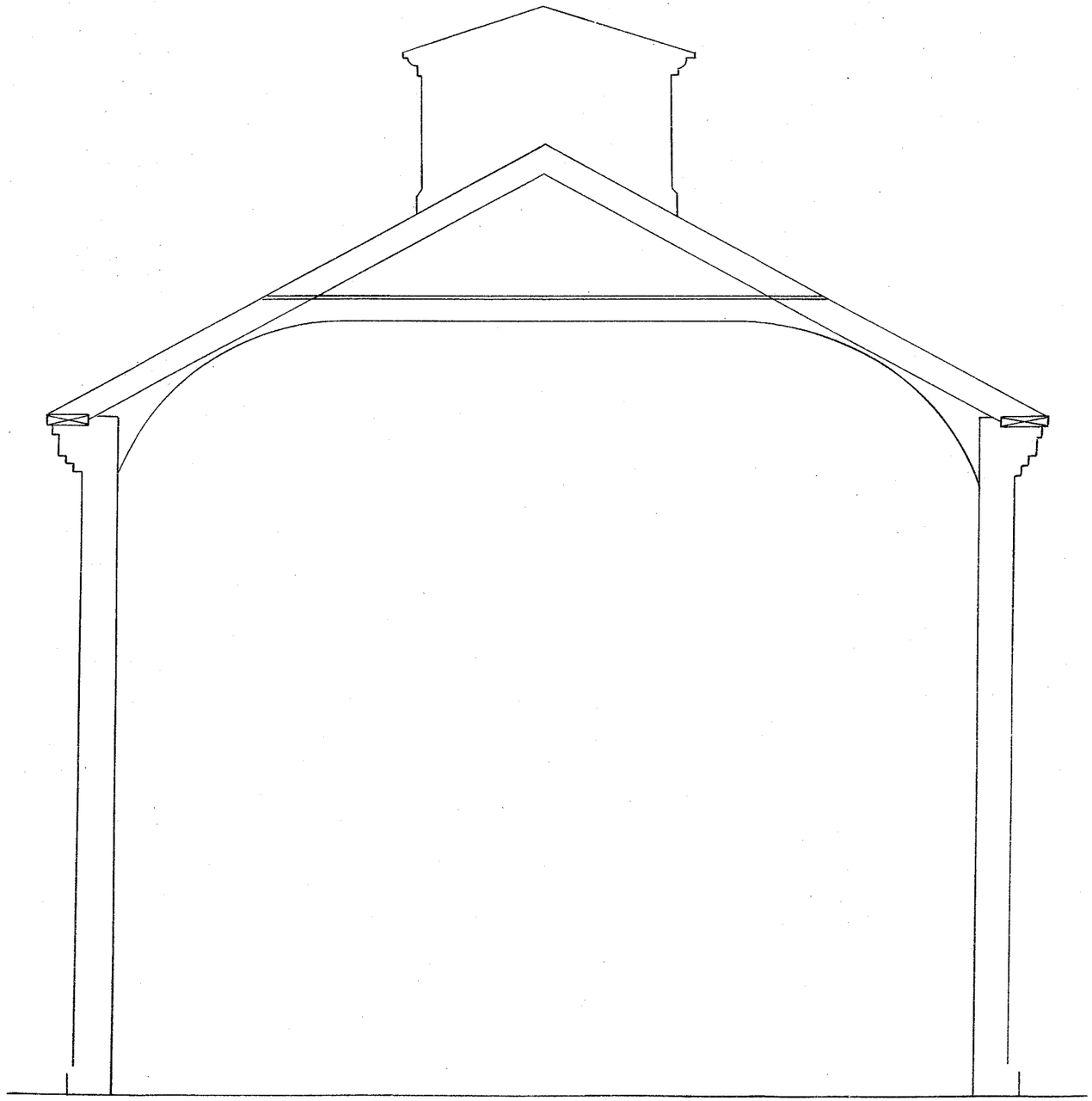
SIR: I have the honor to invite attention to the necessity, which has long been felt, of having at this post a suitable practice room for the Military Academy band. The room used for this purpose is poorly ventilated, with a low ceiling (9 feet 4 inches) and so ill adapted to this purpose that I have ordered practice for this summer, whenever the weather will permit, to be held in the open air. A practice room is needed from two to three hours daily, Saturdays and Sundays excepted, and as a number of the field musicians are now playing in the band, the necessity for a larger and better ventilated room is increasing.





Scale 1/4 = 1 Foot





If the idea of a separate building for this purpose meets with the approval of the superintendent I would suggest a brick structure octogonal in plan on the exterior and circular in the interior and 30 feet in diameter with a ceiling 20 feet more or less in height, the room to be well lighted and ventilated. To this there should be an annex in the shape of a room about 12 feet square for storing music, music stands, etc. A suitable location for such a building can, it is thought, be found north of the band barracks. I would also add that if it is seen fit to prepare plans and specifications for such a building it might be well to have it done this month in order that the matter could be referred to the committee on buildings and grounds of the Board of Visitors for this year.

I would request that the architect consult me as to minor details as they arise in the preparation of plans which need be in detail only sufficient to make a general estimate of the cost of the building.

Very respectfully, your obedient servant,

W. C. BROWN,
*First Lieutenant First Cavalry, Adjutant, Commanding Band.*

The SUPERINTENDENT U. S. MILITARY ACADEMY,
*West Point, N. Y.*

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THE BAND ROOM.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
*West Point, N. Y., June* 8, 1889.

SIR: In reply to your request of this morning, I have the honor to submit the following in regard to the necessity of a suitable practice room for the U. S. Military Academy band.

The quartermaster of the Academy has, at my request, and with the approval of the superintendent, prepared plans and estimates for the construction of a building to cost $3,000.

The necessity of this building I regard as an urgent one, and it needs but a casual inspection of the room at present used to convince any one of its utter unfitness for the purpose.

The plans and estimates are inclosed herewith, and I earnestly hope the matter may receive favorable consideration of the Board of Visitors.

Very respectfully, your obedient servant,

W. C. BROWN,
*First Lieutenant First Cavalry, Adjutant,*
*Commanding U. S. Military Academy Band.*

Hon. S. M. ROBERTSON,
*Chairman Committee on Building and Grounds,*
*Board of Visitors U. S. Military Academy, West Point, N. Y.*

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ESTIMATE AND PLANS.

Estimate of material and labor required for the erection of a band-practice room at West Point, N. Y.

| | |
|---|---|
| 700 cubic feet of stone work, at 40 cents per cubic foot | $280.00 |
| 40,000 brick, at $16 per M, laid | 640.00 |
| 120 feet of blue-stone water table | 120.00 |
| 8 blue-stone window sills | 10.00 |
| 1 blue-stone door sill | 2.50 |
| 1 front door and frame | 20.00 |
| 1 inside door | 7.00 |
| 6 iron grates, 6 by 14 inches | 2.50 |
| 6 ventilators, 10 by 14 inches | 6.00 |
| Floor timbers | 40.00 |
| Yellow pine flooring | 65.00 |
| Base boards | 7.20 |
| Window frames and sash | 120.00 |
| Wainscoting and shelving | 210.00 |
| Roof | 450.00 |
| Plaster | 160.00 |

| | |
|---|---|
| Paint | $100.00 |
| Hardware | 35.00 |
| Skilled labor | 250.00 |
| | 2,525.20 |
| Contingencies, 20 per cent | 505.00 |
| Total | 3,030.20 |

HOW OTHER BANDS ARE OUTFITTED.

Adjutant BROWN:

SIR: In compliance with your request that I submit data as to the average playing strength of some of the leading bands of the country, I beg to offer the following as the result of my personal inquiries, observations, and experience:

| | Members. |
|---|---|
| 1. Twenty-second Regiment National Guard State of New York (Gilmore's) Band | 65 |
| 2. Seventh Regiment National Guard State of New York Band | 55 |
| 3. Sixty-ninth Regiment National Guard State of New York band | 45 |
| 4. Ninth Regiment National Guard State of New York Band | 40 |
| 5. Seventy-first Regiment National Guard State of New York Band | 50 |
| 6. Thirteenth Regiment National Guard State of New York band | 50 |
| 7. Liberati's Band | 55 |
| 8. Boston Cadet Band | 50 |
| 9. Reeves' Band (Providence, R. I.) | 40 |
| 10. Waltham Watch Factory Band | 35 |
| 11. Elgin Watch Factory Band | 65 |
| 12. Marine Band (Washington) | 40 |
| 13. Wheeler and Wilson Band (Bridgeport, Conn.) | 30 |
| 14. Colt's Armory Band (Hartford, Conn.) | 30 |

Of the above Nos. 10, 11, 13, and 14 are variable in membership, owing to the fact that members are engaged partly in consideration of fitness to perform some particular branch of manual work in the respective factories. The other bands, Nos. 7 and 9 excepted, connected with regiments of the National Guards are fairly represented by the above numbers for parade purposes. The exceptions are private organizations, and, while claiming a strength as above, are often found accepting engagements in parades with less men. The total putative number of musicians employed in the fourteen bands is 645, giving an average of 46.1 per band. This number is below what the leading band-masters, such as Gilmore, Cappa, Junes, Liberati, Dodworth, Sousa, Conterno, and others, consider necessary to afford satisfactory music for the parade. In this connection it may not be out of place to mention that even with a band of fifty-five the Seventh Regiment National Guard, State of New York, have long had in contemplation the advisability of increasing their musical organization to eighty, dividing that number into two bands of forty each, one to head the column, the other to be placed midway. In the Seventy-first Regiment experiments have been made with bands of from thirty upwards, the result being the adoption of fifty musicians as the number necessary to form a satisfactory parade band.

While all band-masters maintain the necessity for large bands on the street, they admit the possibility of obtaining very good effects from a smaller organization for concert work. Even there, however, the estimate is invariably from thirty to forty musicians. A band of forty, or even thirty-five good musicians, with well-balanced instrumentation, is capable of performing any class of music written in a manner to do justice to the work and give pleasure to the listeners. Smaller organizations are less satisfactory, as lacking in volume of tone, especially in the leading parts, as well as some of the subordinate accompanying parts.

The Government bands—the Washington Marine Band excepted—are all too small, and their membership should be increased. Especially is this felt to be the case at West Point, where the nature of the duties to be performed bringing the band before the public in a representative capacity, a much larger band than at present is absolutely needed. The U. S. Military Academy Band should be increased by from twelve to sixteen musicians, the latter number preferable, in order to bring the organization onto a plane equal with the Marine Band and allow for casualties, as well as to fit it for the more efficient performance of its duties.

Another matter. Comparing this band with the Marine Band, besides being limited to smaller numbers, there exists a greater difficulty in securing good musicians to fill vacancies, the reason for that being the small pay in second and third classes, with less opportunity for supplementing same by outside employment. Considering the

above, and the further fact that the duties here are very considerably more arduous and important than at Washington, it would seem but just that the Government should so augment the pay of bandsmen at this post as to make that of itself an inducement for good musicians to join. In New York City bands musicians are paid $8 for a parade, and from as high as $125 for leading instrumentalists to $25 for less important parts per week on concert engagements.

I append specimen instrumentations of bands.

| | 1 | 2 | 3 |
|---|---|---|---|
| Flute | ..... | ..... | 1 |
| Piccolo | 1 | 1 | 1 |
| E flat clarionet | 1 | 2 | 2 |
| B flat clarionet | 6 | 8 | 10 |
| Oboe | 1 | 1 | 2 |
| Alto clarionet | 1 | 1 | 1 |
| Bass clarionet | 1 | 2 | 2 |
| Cornets | 3 | 4 | 4 |
| Baritone | 1 | 1 | 1 |
| Horns | 3 | 4 | 4 |
| Trumpets | ..... | 2 | 2 |
| Trombones | 1 | 3 | 3 |
| Euphonion | 1 | 1 | 1 |
| Basses | 2 | 3 | 4 |
| Drums | 2 | 2 | 2 |
| | 24 | 35 | 40 |

No. 1 shows the instrumentation of West Point Band as at present, including leader and without field musicians, No. 2 the instrumentation for a band of 35, and No. 3 that of a band of 40 pieces.

Yours, respectfully,

ARTHUR A. CLAPPÉ,
*Leader.*

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## CADET QUARTERMASTER'S STORES—CAPTAIN SPURGIN'S STATEMENT.

HEADQUARTERS U. S. MILITARY ACADEMY,
OFFICE TREASURER, QUARTERMASTER, AND COMPANY CADETS,
*West Point N. Y., June* 8, 1889.

SIR: Referring to the inspection made by your committee of the building occupied by the cadet quartermaster department, and to conversation which then occurred relative to the inadequacy of the building for the needs of the department, I have the honor to submit the following. The cadet quartermaster department supplies the cadet with almost everything he requires except his subsistence, viz: Clothing, text books, underwear, mattresses and other articles of bedding, shoes chairs, washstands, toilet articles, etc.

The clothing is manufactured by the department by tailors located in the building under direct supervision, to the extent of limited space.

It becomes necessary to have many of the articles of clothing given out to be made by operatives who live in the villiage of Highland Falls, notably white clothing.

It becomes necessary to provide for the candidates for admission each year a number usually in June about one hundred and thirty to one hundred and fifty, in August about thirty to forty mattresses, blankets, chairs, washstands, comfortables pillows, and such other articles as they require as soon as they report. These supplies must be obtained beforehand ready for issue. Since the new cadets are placed in what is known as the preliminary uniform as soon as they are admitted, which uniform consists of gray flaunel jackets and trowsers, forage cap, overcoat, gloves, etc., it is necessary to have said articles for average sizes prepared previous to their arrival. To store all of the above taxes the capacity of the store-house so that it is almost impossible to enter certain rooms. The building is badly constructed, besides being inadequate. Each floor has a hall running through it and the space on each side of said hall is cut up into small rooms; the space on the left side into two rooms, that on the right side into three rooms. The building is 3½ stories high, including the basement. The basement is occupied by a room for cobblers, water-closet, coal room, and storage of such articles as are not affected by dampness. The one-half top story is filled with books, mattresses, articles of furniture, etc. The main floor supplies the store-room for small articles on one side of the hall, and on the other a room for the cutting of

clothing, dressing room for cadets trying on clothing, and a room for storage of shoes and many other articles.

On the second main floor the entire one side and one room on opposite side is occupied by tailors. One small room is used as a clothing, cloth, and storage room, and the remaining room on that floor is completely filled with clothing. The labor of supplying cadets, having stores distributed in crowded rooms all over the building, is great, and the difficulty of caring for stores is increased. This building was erected and paid for by money belonging to the cadet quartermaster department, and not by Government aid.

I earnestly recommend that Congress makes an appropriation sufficient to double the capacity of the building, extending it in such direction as may be approved by the Superintendent of the Academy.

The present building, erected some years since, cost, in round numbers, over $18,000. I am not prepared to give at this time an estimate of the cost of the desired extension. I believe that the extension desired constructed homogeneous with the present building, leaving out the many interior walls which cut up the present building, could be erected at the present time for the sum of $15,000, and I trust that that sum, or as much thereof as may be necessary, may be appropriated at the next session of Congress, *to be immediately* available for the purpose of extending the building to double its present capacity.

Very respectfully, your obedient servant,

A. F. SPURGIN,
*Captain Twenty-first Infantry, Treasurer U. S. Military Academy,*
*Quartermaster and Commissary of Cadets.*

Hon. S. M. ROBERTSON,
*Chairman of Committee on Buildings, Grounds, and Police Administration,*
*Board of Visitors, West Point, N. Y.*
(Through the Adjutant-General U. S. Military Academy.)

The Board wishes particularly to emphasize the absolute need of better quarters for enlisted men, and a better hospital for the same. No humane man who owns an average good family horse would consent to allow the favorite animal to live in a room like the hospital, since particularly in damp weather the beast must become rheumatic and useless. It were mockery to place a sick man in such an alleged "hospital," inasmuch as it would appear like an attempt to insure his death. However, when men are sick they must be removed to quiet quarters where attention can be given with economy of the time of the surgeon, and so that the family of the patient may be relieved of the care of the sick member to which the Government is pledged. A great government cannot afford to continue to use that hospital, and very economy of health and human life demand its instant disuse. There are not two opinions on the subject at West Point. The very presence there of that splendid cadet hospital renders the contrast too vivid, for one cannot avoid feeling the implied relative estimate placed upon the respective values of an officer presumptive and of an enlisted man.

There were pathos and an overwhelming argument in the ready reply, when members of this Board asked a soldier's wife or children if their homes are comfortable. The theory of army life does not provide for the soldier's family. At present the married soldier has an alleged "home," which is the best under present circumstances. If any adverse criticisms on those tumble-down fever-pens called "homes" are made, there is an instant fear lest the present houses be torn down and the Government will take its time in erecting others. Thus the devoted wife of the "common" soldier concludes that any kind of a home shelter is better than separation from her enlisted husband. The provision of proper homes encourages steady habits and secures to the Government at West Point the services of enlisted men who are worth more and more because of their re-enlistment. It is not creditable that the meanest laborer or the poorest farmer near the post and Academy should have more comfortable and more sanitary homes than have the

soldiers of the Republic. We most heartily recommend the new quarters spoken of in the subreport already quoted. The other recommendations plead for themselves. Some other countries have officers more numerous than are the totals of officers and enlisted men in our entire Army. We have but one cadet school, and that ought to be as perfect in equipment as is the best in the world. Foreign visitors from every land see our school at West Point, and since we have scarcely a visible army our visitors shape their estimate from what they see at the Military Academy. We know that some officers at the Point maneuver at times to avoid showing the riding gallery and the horses lest visitors go home to pronounce it all an American cavalry joke. Teachers and cadet riders like those we have seen deserve better surroundings and worthier belongings. It would seem that there ought to be one more sentinel posted to keep strollers from seeing the northwestern parts of the grounds, wherein are the disgraceful and often-condemned hospital and houses for enlisted men. Mere humanity compels us to tell the uncomplimentary truth to Congress in order that the evils may be removed.

When the new academic building and the new gymnasium are erected by funds which are already appropriated by a liberal Congress, and when the additions and alterations recommended by this Board are realized, neither citizen nor soldier need hesitate to invite American citizens or foreigners to admire the proofs that our peaceful Republic spares not nor stints not when preparing to induce permanent peace through earnest and constant preparations for an unwelcome possible war. Our Academy at West Point ought to be the best and the best equipped military school in the world. A young man's habits of study are formed for life during his undergraduate course, in whatever college. His surroundings vitally affect and determine his zeal, and tend greatly to shape his affection for his Alma Mater. We believe that the number of cadets to be educated at West Point will presently be increased. The very increased care of the number and excellence of buildings at the Academy will increase the cadet's and the people's estimate of the privileges given to the cadets by the Government, and all will tend to elevate the grade and quality of the young men who apply for admission. We have no doubt that the replacement of the hospital and quarters for enlisted men will favorably affect the appreciation of the value and manliness of the rank and file of the Army in the minds of the cadets.

One topic attracted the attention of the Board respecting "police administration," to wit: Large numbers of enlisted men were everywhere about the streets, paths, and grounds, doing ordinary but constant labor as diggers, mowers, grooms for officers, and busy about any and every thing save military duty proper. Some of these were dressed as laborers, others were in semi or undress uniform. It was often said by members of the Board that this spectacle certainly does not tend to elevate the estimate of the private soldier in the minds of either cadets or casual visitors to the Academy. The officer differs from the private in rank only. Both are American citizens and both are equally honorable in their respective spheres. The distinctions of rank should be observed, but the distinction is military only. Both are men, and both should be employed in purely military duties. Though the unenlisted laborer may be more expensive and more free from military control, and though he may be more disposed to obey the behests of the "walking delegate" during a strike, the Board is inclined to prefer his employment rather than that the spectacle of the uniformed soldier constantly engaged in unmilitary work should tend to lessen the respect of the cadet towards the former. Labor is honorable, but we are inclined to

think that in an institution like the Military Academy civil and military labor should be made separate for the reasons named.

Unwilling to determine this question without opinions unlike our own, one of our number frankly asked one of the most thoughtful officers at the Academy to state his views, as a personal matter. This he did as follows:

THE OTHER SIDE.

MY DEAR DOCTOR: Yes, I recall our talk on the subject you mention; but as I remember it was broader than the proposition stated in your letter. In addition to the effect or impression made upon the minds of cadets by doing labor at the Academy with enlisted men, did we not discuss the general expediency of such a course as compared to a system wherein the labor would be performed by civilians? I think we did, and will trust to your great patience and endurance to enable you to follow me through some of the points which occur to me.

First. Do cadets get an erroneous idea as to the character of the enlisted men by seeing them labor? I answer, no. On the contrary, if their attention was called to it they would not join their regiments in ignorance of many of the details which largely make up the enlisted man's life. Indeed, if the lesson should be utilized of seeing soldiers about the Academy grounds in the fatigue uniform of the Army performing what is known as "fatigue duty," their surprise would not be so great when joining their regiment and being directed to command a body of soldiers detailed to clean the walks, grounds, etc., necessary to place their post in a sanitary condition. The work performed, and the dress in which it is done, by all enlisted men at this post is exactly no more or no less than that which paragraphs 161, 162, 163, 205, 496 and 1810 of the Army Regulations prescribe as a part of the dress and the duties of all enlisted men when properly detailed. The only difference is that in one detachment of soldiers here their duties are exclusively of this kind, whereas at other posts the men have also duties of another class. If cadets, or any one else, get an idea that such labor is unbecoming a soldier, their attention should be invited to the following regulations:

"*Paragraph* 161. Enlisted men will not be placed on extra duty, except to perform the necessary routine services in the quartermaster's and subsistence department, without the sanction of the department commander.

"*Paragraph* 162. Enlisted men will not be employed as extra-duty men for any labor in camp or garrison which can be properly performed by fatigue parties. Duty of a military character must be performed without extra compensation.

"*Paragraph* 163. Enlisted men on extra duty under competent authority, at constant labor of not less than ten days, are entitled to receive extra-duty pay at the following rates: For services as mechanics, artisans, and school-teachers, 50 cents per day; as overseers, clerks, teamsters, laborers, and for all other extra-duty services, 35 cents per day.

"*Paragraph* 205. All repairs of public buildings at garrisoned posts, for the execution of which citizen mechanics have not been specially authorized, and which are not provided for in appropriations by Congress, will be performed by the labor of the troops. When practicable, shelters, store-houses, and temporary buildings, for the use of the Army, will be erected by its enlisted force.

"*Paragraph* 496. The officer of the day is responsible for the enforcement of all police regulations, and is charged with the execution of the orders of the commanding officer relating to the safety, order, and police of the post or camp. Fatigue parties will be furnished him when the number of prisoners is insufficient for the necessary police purposes.

"*Paragraph* 1810. Canvas fatigue clothing for all enlisted men, of brown cotton duck, according to pattern in office of the Quartermaster-General. The suit to consist of coat and trousers. It will be worn as a working dress on extra, daily, or fatigue duty, and charged at the regulation prices."

It is a well-established fact that those who occupy a position intermediate between that of the commissioned officer and the enlisted man are inclined to exalt their own position and lower that of the enlisted man, whether he is laboring or drilling. It can not be assumed that the cadet is free from this feeling. This feeling, if such there is, will remain until contact with the soldier in the field and garrison opens his eyes to the many virtues of the Army's enlisted force.

I do not know of any principle which could be taught the cadets more pernicious than that labor in any soldier is not respectable, and that, therefore, civilians are employed to do it. The change is argued as necessary to elevate the character of the enlisted man in the eyes of his future officers. Are cadets to be taught one thing at the Academy and another upon joining their regiments? Having taught him here that labor is degrading to the soldier, what will he think of his men when they are

complying with paragraphs 161, 162, 163, 205, 496, and 1810, of the regulations; and what will he think of his fellow-countrymen civilians who labor?

If the argument should be advanced that these men being soldiers, and enlisted to do all things required of soldiers, had not time to learn that which pertained strictly to their military instruction, it would have force. Indeed, no one would deny that a change was necessary.

Those who labor at this post are enlisted for that specific part of the soldier's duty. They never have arms; none are issued to them, and no knowledge of their use is expected or required. It is not claimed that it would be to their benefit, or to that of the Army, to have them so instructed. Those who would change the system would do so to elevate the character of the soldier in the eyes of a body of young men who are too busy with their own duties to have time for speculation concerning the enlisted men, or any other part of the Army, except such parts as directly affect them.

Second. It has been said that the laboring detachment injures the discipline of another detachment at the post. I have never heard anything more than the statement. No arguments have been used, and I do not believe it to be true. In the first place the men of the detachment of laborers, mechanics, etc., draw, man for man, more pay than any other at the post, as, in accordance with Army Regulations, paragraph 163, which applies throughout the Army, they are for each day's work paid extra over and above their pay as soldiers. This extra pay causes many men of other organizations to desire to transfer to the artillery detachment (the laboring detachment), and when they have good records they are, when vacancies occur, given preference. This, thereby, puts a reward for good service before the eyes of every enlisted man at the post, and it would seem to be beneficial to the discipline of other organizations.

Should the laboring detachment be abolished and the force composed of civilians, there would be to all discharged soldiers of the remaining organizations the same or greater desire to get employment therein, for the reason that their compensation as civilians would be much greater than now.

*Statement of the estimated cost per year of certain labor done with enlisted men, U. S. Army, at West Point, N. Y., and the estimated cost of the same if done by civilians.*

| | | |
|---|---|---|
| 117 enlisted men's pay proper, from July 1, 1888, until June 30, 1889, inclusive | $24,960.00 | |
| 117 enlisted men's rations, from July 1, 1888, until June 30, 1889, inclusive | 6,215.97 | |
| 117 enlisted men's fuel, from July 1, 1888, until June 30, 1889, inclusive | 822.04 | |
| 117 enlisted men's clothing, from July 1, 1888, until June 30, 1889, inclusive | 4,655.23 | |
| Extra pay of 62 enlisted laborers, three hundred and thirteen working days, at 35 cents per day | 6,792.10 | |
| Extra pay of 53 enlisted mechanics, three hundred and thirteen working days, at 50 cents per day | 8,294.50 | |
| Extra pay of assistant librarian (enlisted) from July 1, 1888, until June 30, 1889, inclusive | 1,000.00 | |
| Extra pay of draughtsman (enlisted) from July 1, 1888, until June 30, 1889, inclusive | 256.00 | |
| | 52,995.84 | |
| Contingencies 2 per cent | 1,059.92 | |
| | | 54,055.76 |
| 62 civilian laborers, twelve months, at $40 per month | 29,760.00 | |
| 55 civilian mechanics, clerks, etc., twelve months, at $75 per month | 49,500.00 | |
| Fuel, twelve months | 822.04 | |
| | | 80,082.04 |
| Balance in favor of enlisted labor | | 25,926.28 |

The truth of this is fully illustrated throughout the Army where civilians are employed by the Government near a command of enlisted men, and its condition will continue as long as there are two organizations, whether exclusively of soldiers or of soldiers and civilians, drawing unequal pay and serving near each other.

Again, should it not be considered whether it is advisable to interrupt a system which has worked satisfactorily to the officers charged with the responsibility of looking after so large a part of the affairs of the Academy? The requirements of a military post being peculiar to itself, should we introduce an element which at any time may go on a strike for cause, or without cause, by order of some union? I think not. To

my mind nothing more unsound was ever advanced than the *reasons given* for this proposed change. In conclusion, I would call especial attention to the condition under which I admit a change would become desirable.

Yours, very truly,

CHARLES W. WILLIAMS,
*Captain and Assistant Quartermaster, U. S. Army.*

Rev. ARTHUR EDWARDS,
*Board of Visitors, U. S. Military Academy.*

We admit that Captain Williams makes a good case. It is not our intention to conclude the matter, but justice requires us to say that the matter of cost does not settle the issue. Long lines of precedent are not conclusive, for many errors are gray-headed. We are content, however, that attention has been called to an issue which occurs to many, if not a majority of those who visit the Military Academy.

In further conversation it was suggested that our vessels are not built in navy-yards by enlisted men, but it was immediately replied that sometimes navy-yard laborers, and navy-yard politics are not always divested of scandal. There is little danger of this among the smaller and comparatively insignificant numbers who would be, or apt to be, employed as laborers at West Point. It may be best to restrict the residents in and near the Academy to those who are under the restraints of military oversight. The question is not important, save as to the main point first named. Labor is honorable and that fact should be emphasized, but the Board was quite disposed to raise the question, and perhaps it has sufficiently discharged its duty by doing so.

In the matter of confining the duties of the cavalry detachment to stable and riding-hall work, as is suggested by Captain Dorst, we are inclined to agree with him. Those frequent and long marches from their quarters to the stables, particularly in extreme cold and trying hot weather, are unnecessary and burdensome to the men. In case of fire in the absence of the men there is danger of grave loss. The not unillustrated peril of riding in a hall whose tan-bark floor-covering is coated with ice in winter should be removed instantly. It is cruel to confine riding teachers and cadets in an unheated room for hours at a time; and to compel them to do duty under the most adverse circumstances is poor economy. The galleries in the riding-hall are as inhospitable as those in the two houses of the English Parliament, and they hold just about the same small numbers to witness that interesting part of the graduating exercises. The riding is one of the most, if not in fact the very most, attractive feature of the season named. The galleries should be increased in capacity, as is recommended in one of the papers accompanying this report.

We claim that the style of riding taught at West Point is the most graceful and, in practice, the best, taught in the world for army purposes. Those who have heard comment abroad respecting West Point remember the inevitable allusion to the riding gallery. We approve the recommendation for one more gallery, for the sake of economy of time and labor for man and beast. We hope for a new second gallery and that it shall be modern and perfect, and completely surrounded by one tier, if not two tiers, of galleries. Into that should be invited all visitors, and particularly foreign visitors. When it is provided, and when special and exclusive horses are added, as another subcommittee asks, we confidently hope and expect that therein will be shown a theory and method of equestration which can not be discounted in any military riding academy in the world, or by any Arab, Turk, or whatever horseman, soldier or citizen, who rides the noblest animal in creation.

If the hotel's proportions were equal to its manager's desire to care

for the multitudes that attend the graduation days in June, there would be no need for change. The house is old, and was originally designed to care for the few who expected to remain inside the reservation during the night. The rooms are small, inconvenient, and disappointing. There ought not to be much debate concerning this change, since the income to the Government from the new building will materially compensate for the necessary expenditure.

The Board emphasizes the request for a practice room for the band. This question is closely associated with the matter of having excellent performers. We heartily second the representations of the Academy Adjutant, who has, until recently, had charge of the band, which is not a good one, and we frankly say that there is room for improvement. In warm weather it can practice out of doors, but at more inclement times it lacks facilities for rehearsal. The Marine band in Washington has fame throughout the country, and we are sure that a normal standard of high excellence is desirable at West Point also. The number of performers should be increased, and the cadet band should be notable and unexcelled. The story, told by Adjutant Brown, of the make-shifts to which he must needs resort, at the Washington anniversary parade in New York, last April, would be comical, were it not just about discreditable to the musical resources of that splendid school at West Point. Two watch factories and a sewing-machine company actually have better provided and larger bands than has the only Military Academy fostered by the United States. The militia forces carry off the comparative honors easily. We are not reassured when we contemplate the unexpressed thoughts entertained by foreign visitors who are too polite to suggest the contrasts between what they hear at West Point and their memories of the superb bands so common in the older world. Scores of magnificent bands play "God Save the Queen," while our Academy falters in its brazen praises of less tuneful "Yankee Doodle."

The Board recommends the instant increase of pieces to forty, at the least, and that a liberal appropriation be made to make the cadet band all it should be. Estimates of cost of the change follow in "Exhibit F." from the Academy Adjutant. We urge the improvement. The very credit of the Academy demands it.

We hear with satisfaction of preparations to erect the new academic building and the gymnasium. They will go far to meet the needs of professors and cadets. The accompanying map will show where the new buildings will stand. All concerned have reason to rejoice in this liberal care of the Academy.

This Board calls earnest attention to the often-urged need of introducing the electric light into the Academy. The eyes of whole generations of officers of the Army are concerned in this vital issue. A student's eyes are not replaceable like his boots, or interchangeable like an officer's weapons. The long periods of darkness in winter in our latitude compel prolonged study, and the priceless sight which is tested so carefully when the cadet enters the Academy, is apt to be injured through want of better illumination purchasable by a few dollars from the Government, which so recently ordered the ocular tests. It ought not to require an additional word to procure that comfort and indispensable convenience which go into almost every modern home. Ten thousand dollars, the estimated cost of this improvement, would be willingly paid by ten men could the share of each avail to restore their damaged sight. The public aspect of the issue alone is sufficient argument why the electric light should be provided as specified in the above accompanying papers relating to the improvement.

## II.—DISCIPLINE AND INSTRUCTION.

*On Discipline and Instruction.*—Capt. Charles King, chairman; Rev. Dr. B. W. Chidlaw, Hon. S. M. Robertson, and Prof. LeRoy D. Brown.

"Discipline and Instruction" are the soul in the body we have been discussing. All other things in the Academy are for the sake of the work to be accomplished therein. Buildings and grounds do not create men. The house is for the sake of the tenant, and in this instance the tenant is there to be "disciplined and instructed." The finished product —the cadet—is the center of all things at West Point, and all others are there for his sake. When the pupil has received his parchment he goes away and makes room for another. A discriminating writer said, more than half a century ago, that "a diploma from the Military Academy proves that its owner has a thorough knowledge of all the subjects taught there." We believe that this tribute to the Academy was deserved then, and is merited now. The same writer, after giving his estimate of the kind of scholars produced by the school in question, said with respect to the discipline, that it is designed to produce in the cadet a habit of "literal, implicit, unhesitating obedience." We have faith that the results are now just what that writer then said they were. West Point makes scholars, as do also other schools, but the Military Academy differs from other schools in that it adds discipline to scholarship. It is the aim to produce officers who are able to use their knowledge under different circumstances, and to put that intelligence in motion at the will of those who have the right to command. The graduated cadet is an officer who commands, as well as obeys, and is made all the more a commander through his habit of obedience. Capt. Charles King, chairman of the committee on this topic, and the writer of the appended report, once a cadet, a first sargeant of cadets, and then the cadet adjutant, and, since, twice detailed as an instructor of cadets, pays the following tribute to the modern corps as we found it, 1889:

To the Board of Visitors:

While the members of the Board have very generally attended the examinations and formed their views, individually, as to the method of instruction at the Military Academy, it has been the province of this subcommittee more particularly to study the routine, to witness the various drills and exercises, and to acquaint itself, as far as time would permit, with the internal management and discipline of the corps of cadets.

As the result of such investigation your subcommittee has the honor to report as follows:

Theoretical instruction as now imparted at the Military Academy is the result of years of experience on the part of the professors and those officers who have from time to time served their tours of duty at West Point, and the present system is the essence of all that has been found most valuable in the past. In point of thoroughness it leaves little to be desired and gives evidence of most faithful and intelligent work on the part of the heads of the various departments and of their accomplished assistants. Your subcommittee can only express its entire satisfaction in this matter and has no recommendation to make.

Were it possible to extend the course, however, far more attention should be given to the study of the English language, as a lack of facility of expression and occasional lapses into ungrammatical speech on part of the cadets were matters of frequent comment. Elocution, too, is much neglected, but whether it would be wise to abandon in favor of these studies any portion of the present curriculum, your committee does not feel able to decide.

One thing is certain, *not another page should be added to the tasks now set before the students at this Academy so long as the course is to be mastered in four years.*

In the matter of practical instruction in the military art high commendation is due. Such precision, ease, and grace in the evolutions of the three arms of the service it has never been the fortune of the members of your committee to witness elsewhere. The review, the daily parades, the battalion drill as infantry were admirable, and the proficiency displayed by the cadets in handling the guns of the heavy batteries, and the accuracy of every detail in the maneuvers of the mounted battery and the cavalry battalion are all deserving the highest praise. It is to be regretted that instruction in both light artillery and cavalry is restricted by the fact that cavalry horses and cavalry troopers are employed for battery drill, and their legitimate purpose made to suffer in consequence. The committee on ordnance and equipment having already recommended the purchase of proper horses for the use of the department of artillery no more on that score need be said. There is probably no station in the Army where the presence of one of the regular batteries of light artillery would be of more value than at West Point.

In no particular is the practical instruction at the Academy of more marked and peculiar excellence than in the schools of horsemanship and physical culture. The feats of skill and agility displayed by the cadets at riding excited the admiration of the entire Board, and might have remained sources of wonderment to this day had the members not later witnessed the exhibition of the fourth class in the gymnasium. Of this display your committee can not speak too highly. Under the careful training of their instructor young men who enter here, even as uncouth lads, are transformed into agile and muscular youths who seem ready for any feat of activity or daring they may be called upon to perform. Many of them are models of manly strength, and however good may have been the physical development of the corps of cadets in the past it was not to be compared with the results now attained.

As to the discipline of the corps your committee has no criticism to make. It is what military discipline should ever be—firm, impartial, and uniformly sustained. If it have a failing point, the cause will be found in outside interference.

RECOMMENDATIONS.

(1) It is the earnest recommendation of the subcommittee after consultation with a number of the officers on duty at the Academy that, in recognition of the admirable work accomplished by Mr. Herman J. Koehler, in view of the fact that he is doing here unaided the duties devolving upon three or four instructors at the Naval Academy, and of the fact that, in the event of injury in the line of his duties there is now no provision in law by which he could receive a pension on which to retire, the rank of first lieutenant of infantry be conferred upon him as master of the sword and instructor in gymnastics and swimming at the Military Academy.

(2) That an assistant instructor in gymnastics and fencing be provided.

(3) That the course of physical culture be continued throughout the entire four years. Fifteen minutes each day should be devoted to the practice, under supervision, of the exercises taught during the fourth-class year.

(4) That a swimming tank be constructed in the new gymnasium or between it and the commissary store. Cadets now have to walk a mile to get their swimming lesson and can only have it during odd hours in July and August.

(5) That an assistant instructor in cavalry tactics and horsemanship, whose duties shall be solely with that department, be added to the corps of instructors at the Academy.

(6) That the so-called credit system in the Department of Discipline be abolished.

Very respectfully,

CHARLES KING,
*Chairman.*
S. M. ROBERTSON.
B. W. CHIDLAW.
LEROY BROWN.

The Board, while heartily indorsing this terse, appreciative, and discriminating report, wishes to emphasize its regret that more time can not be found in which to drill the cadets in the use of, and teach them more about, the English language. The four-year course is already crowded, and we can not identify the space into which it is possible to teach more of even the English. The officer ought to know at least something of French and Spanish, but if either or both of these tongues are to compete with English we unhesitatingly give our preference to

the last. We do not think they need to conflict. In speech the Frenchman and the Spaniard are coming to us far more rapidly than we can go to them. It is argued that the Spaniard is our neighbor, but it would seem that we are also his neighbors. It has been argued also that an officer once owed his life to the fact that he understood the language of his Spanish captors. The same might be true with respect to any of the once formidable Indian's dialects. We are inclined to suggest as to the Latin that it is the mother of the Spanish, the French, the Italian, and the Portuguese, as well as the resistless key to the technical terms, and to the specific nomenclatures which are the short-hand of science and are as obscure to the non-Latin scholar as they are clear to him who unlocks their simple secrets.

In addition to all this the Latin is one of the keys to English, and the general many-sided arguments thus hinted with respect to the Latin language need not turn its back to the foes of the study of that and other dead languages. Though dead, it yet speaketh, and is mighty to open dumb mouths, whether in French, Spanish, or English. Retain the French and the Spanish, but not at the expense of the English.

We do not advise definitely as to the adoption of Latin in the academic course, or its requirement from those who apply for admission. It will be noted that the report of the sixth subcommittee recommends that physical geography, elementary algebra, and plane geometry be added to the requirements for admission. Should the suggestion be received, the redeemed time is nominated for candid and solicitous consideration with respect to the desired enlargement of at least the study of English.

The cadet who graduates at the very foot even of his class is very much of a man, while those who stand at or near the head of their classes at graduation are marked, if not remarkable, men. Academic standing at West Point is, as Landseer said of the photograph, "justice without mercy." The divisions into small sections in which cadets compete with each other is an admirable device whereby all, alike in all the sections, cease to get in each other's way. There is constant motive to do one's best, and to obtain promotion to higher sections. The professors are adept teachers and their assistants are devoted mind-builders. We pronounce no hasty verdict when we say that the academic staff of the superintendent is worthy of their deservedly high rank in the republic of letters. It is their theory that the recitation room is not the place in which a cadet should learn his lessons. That room is rather the place in which nebulous conceptions are resolved and truth is oriented, and placed in its proper relations in the mind of the student. The new cadet on arrival at West Point receives his physical "setting up." The bodily "slouch" is all taken out of him and he is taught to stand erect on his two feet, as a man should, with head as near the sky as possible. So also is he "set up" intellectually. He is taught to think clearly and to reject all surplusage in speech and method. The young man who remains only one year in the Academy receives a something that is a benefit for life. Members of this Board who remained to witness the admission and elementary, physical, and intellectual hints which older cadets bestow, sometimes with no over-tenderness, testify to the magical change which comes within only one short week. In a month the candidate is absorbed into the battalion, a product of discipline and drill whose fruits are admirable and striking.

We confess that it was exceedingly difficult to believe that the gymnastic exercises performed by the fourth class could be the result of only one year of practice under instruction by Professor Koehler. The

feats of agility were simply wonderful. They are valuable chiefly as evidences of sound, muscular, trained bodies. It appears to be a loss that the cadet is allowed to elect his training after his first year in the Academy. If continued exercise after the first year must be voluntary, (which we deprecate), it would seem that it were well to place a premium in some way upon continued devotion to the gymnasium. Professor Koehler is an accomplished teacher, and he should receive the assimilated rank suggested in the sub-report above recorded. There is also an issue with respect to discipline in the matter, for it is to be expected that cadets will pay more ready respect to an officer than the exceptional cadet may choose to pay to a citizen instructor. At present the professor who does the work of at least two men receives the pay of only one. It will be wisdom to confer by law the rank of first lieutenant of infantry upon the master of the sword at West Point. The assistant asked for should be supplied, since, should the Academy be deprived of the services of Mr. Koehler, there is at present no one in training to take his place. Moreover an additional instructor in the gymnasium is now really needed.

## SUPERVISION OF THE GYMNASIUM.

Having occasion to address the Surgeon-General's office on topics suggested in the reply, Dr. Charles R. Greenleaf wrote as follows. The date of the reply shows that it was too late to bring the matter before the Board of Visitors. The letter contains valuable suggestions, which are herein printed for information:

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
*Washington, D. C., June* 17, 1889.

MY DEAR DOCTOR: I inclose herewith a copy of my manual for the examination of recruits, the modifying circulars being inside the covers. I can not send you a copy of the report made by our board on the clothing for the cadets, because no copy was retained in the War Department. The original papers are, however, on file in the office of the superintendent of the Military Academy at West Point, where you will doubtless have ready access to them.

Your interest in the welfare of the cadets leads me to take the liberty of suggesting an inquiry into the methods adopted (if any) for their physical culture in the new gymnasium, to build which Congress, last session, made such a munificent appropriation. The importance of this subject to the well-being of the cadets is not fully appreciated by laymen, who are apt to regard gymnastic exercise as a sort of circus training, by which the cadet may perform the feats of an acrobat or those of the sawdust horseman. The real object of gymnastic exercise is the systematic cultivation of the physique by a course of training based upon physiological principles; the over-developed muscles are trained down; those undeveloped are trained up to a normal standard; and the mental work is graduated in accordance with the physical condition.

The leading universities throughout the land—Harvard, Yale, Cornell, Johns Hopkins, Amherst, Trinity, and many others—recognizing the vast importance of this subject, have placed it in the hands of scientific men, who have in all instances been made members of the faculty, and attendance by the student upon the course has been made obligatory. This policy is pre-eminent in importance at the Military Academy, and is easy of accomplishment, from the fact that there is at all times present and available a trained expert, in the person of the post surgeon, to superintend this branch of the training of the cadet. I think no more important recommendation could be made than one placing the gymnasium, in its infancy, under the charge of this professional expert, viz, the post surgeon, who should also, for obvious reasons, be made a member of the academic faculty.

With great respect, I am, very truly, yours,

CHAS. R. GREENLEAF.

REV. ARTHUR EDWARDS, D. D.,
*Secretary Board of Visitors, U. S. Military Academy, West Point, N. Y.*

An additional instructor in the riding-hall ought to be supplied. That service is exacting, and it is wonderful that one man should make such experts in horsemanship as are those who excited the admiration of all, and at times awakened the apprehensions of some concerning the safety of the flying cadets. Documents already quoted show how the work taxes the one officer now provided.

The chairman of the subcommittee on this theme, who has been instructor in the Academy, repeats the suggestion that horses used for riding ought not to be used also for artillery. Captain Dorst gives ample and conclusive reasons for the double supply of horses. This Board is inclined to think that it would be well to order from time to time one of the best of the light batteries in the service to West Point on a tour of duty during a space of time that may seem best to the authorities. The coming may be made a reward to the batteries which may be inclined by excellence to compete for the tour at this beautiful post. The men in the battery can do the driving and have the care of the guns. It is said that the light-battery guns now at West Point are but "makeshifts." In that case the coming of the "crack" battery may introduce the cadets to some of the modern light artillery which they will handle in after life. Riding is done in the winter in the hall as well as in the summer, but artillery drill is discontinued in the winter; hence, the presence of the battery may, for the present, obviate the purchase of separate horses for artillery, though the double supply seems altogether best.

We hear some criticism on the system of reporting demerits to the detriment of others, but we do not impeach the system, since it is "in the plan." The corps is a unit, and its discipline is based on a sort of corporate conscience "for the good of the service." Those who serve as cadet officers are responsible, and they simply obey orders when they punish offenders and stimulate the careless or delinquent.

The demands made on the cadet seem excessive, but all appear satisfied. Impartiality solves all tendency to complain, and we sincerely hope that the standing of cadets may forever, as now, be determined by the calm, unprejudiced judgment of the Academic Board, and be forever undiscounted and unsoiled by outside personal or political influence.

The Board is not attracted by any suggestion to extend the course by adding one more year. The West Point school is intended to lay foundations only. The service has three post-graduate schools: One in engineering, at Willets Point, founded in 1873, the course being three years; one in artillery, at Fortress Monroe, founded in 1824, the course being two years; and one for infantry and cavalry, at Leavenworth, Kans., the course being two years. As the college of liberal arts in civil education lays broad foundations for the future student of law, or medicine or theology, so should this military academy be but preparatory to the post-graduate studies of advancing students of the art of war.

The Board bears witness to the good morals in the Academy, which are the understructure of all worthy schools. The Academy is unsectarian in an honest sense. It conserves the quality and extent of conscience and conviction which were the invisible but valuable property of the cadet candidate when he arrived at West Point. While no church in particular is pressed upon the preferences of unwilling cadets, it is not thought necessary to combat all churches in order to base a claim of unfriendly spurious unsectarianism. The cadetis left free as to his own religiousand ecclesiastical trend. In this institution, supported

by churchmen and non-churchmen alike, there are many cadets who care for no churches, and still others who are free to preserve the faiths in which they were reared. In general, it is just to say that in the respects of which we are speaking, parents are justified in their hopes that their boys are free to be true to moral and religious conviction. West Point makes men of excellent mold in proportion to the home training of the cadet candidates. In many cases wherein the cadet may have had no home training, he has been developed into high moral manhood during the term of his academic training. Citizens and soldiers may differ in opinion as to the value of religion, and of its claims upon the loyalty and lives of men. There is not, however, any difference of opinion concerning the matter of consistency in the lives of those who do admit the claims of religion, and profess to worship the Father of all mankind. We hear with satisfaction that all proper tolerance is shown towards those who give allegiance to the Great King. Chapel services, a Sunday school, and two prayer meetings a week give facilities in that respect, and the voluntary services are well attended. The fathers and mothers of the Republic may rest secure that heart, as well as mind and body, may be cultivated in this school of manly men.

Gen. John G. Parke retired from the superintendency of the Academy, and from the service also, soon after the graduating season of this year, and by his own request, according to the statute which gives that privilege to officers who have served forty years continuously. General Parke left the Academy bearing with him the affectionate regard and hearty respect of officers, cadets, and visitors. This Board bears testimony to the courtesy, scholarship, zeal, and long and honorable service which are illustrated in the life and person of that distinguished officer of Engineers, whose record may well be emulated by every officer and cadet in the service.

The superintendency is now in the hands of Col. John M. Wilson, of the Engineer Corps, who already has seized the reins with the grip and grasp of a master. We doubt not that the new head of the Academy will lead his fine military and academic staffs towards continued success. We append the roster of the Academy as it is after the changes of tours usual at the beginning of the academic year. Should this Board of Visitors attempt to return thanks to all at West Point for courtesies received pending their duties, it must needs reprint that same roster for the purpose:

ROSTER (September 3, 1889.)

*United States Military Academy, West Point, New York.*

Col. JOHN M. WILSON, Corps of Engineers, Superintendent.

MILITARY STAFF.

First Lieut. William C. Brown, First Cavalry, adjutant of the Military Academy, post adjutant, and recruiting officer.

Capt. William F. Spurgin, Twenty-first Infantry, treasurer of the Military Academy, and quartermaster and commissary of cadets, post commissary of subsistence, and post treasurer.

Capt. Charles W. Williams, assistant quartermaster, U. S. Army, quartermaster of the Military Academy, post quartermaster, and disbursing officer.

Maj. Henry R. Tilton, surgeon, U. S. Army, post surgeon.

Capt. William L. Kneedler, assistant surgeon U. S. Army.

ACADEMIC STAFF.

*Department of natural and experimental philosophy.*

Peter S. Michie, professor [February 14, 1871].
First Lieut. Sedgwick Pratt, Third Artillery, assistant professor.
First Lieut. James S. Pettit, First Infantry, Second Lieut. John B. Bellinger, Fifth Cavalry, instructors.
First Lieut. Wallace Mott, Eighth Infantry, in charge of observatory and astronomical observations.

*Department of modern languages.*

George L. Andrews, professor. [February 28, 1871.]
Capt. Edward E. Wood, Eighth Cavalry, assistant professor of the Spanish language.
First Lieut. J. F. Reynolds Landis, First Cavalry, assistant professor of the French language.
First Lieut. Warren P. Newcomb, Fifth Artillery; First Lieut. Charles H. Hunter, First Artillery; First Lieut. Henry T. Allen, Second Cavalry; Second Lieut. Benjamin Alvord, Twentieth Infantry; Second Lieut. William W. Forsyth, Sixth Cavalry, instructors.

*Department of drawing.*

Charles W. Larned, professor. [July 25, 1876.]
First Lieut. Montgomery M. Macomb, Fourth Artillery, assistant professor.
First Lieut. Hamilton Rowan, Second Artillery; Second Lieut. George H. Cameron, Seventh Cavalry, instructors.

*Department of mathematics.*

Edgar W. Bass, professor. [April 17, 1878.]
First Lieut. John A. Lundeen, Fourth Artillery, assistant professor.
First. Lieut. Wright P. Edgerton, Second Artillery; First. Lieut. Charles R. Noyes, Ninth Infantry; First Lieut. Harry C. Benson, Fourth Cavalry; First Lieut. George F. Barney, Second Artillery; First Lieut. Alfred B. Jackson, Ninth Cavalry; Second Lieut. Henry C. Hodges, jr., Twenty-second Infantry; Second Lieut. Samuel D. Freeman, Tenth Cavalry, instructors.

*Department of chemistry, mineralogy, and geology.*

Samuel E. Tillman, professor. [December 21, 1880.]
First Lieut. John P. Wisser, First Artillery, assistant professor.
First Lieut. Erasmus M. Weaver, jr., Second Artillery; Second Lieut. William F. Flynn, Eighth Cavalry; Second Lieut. Elmer W. Hubbard, First Artillery, instructors.

*Department of history, geography, and ethics.*

William W. Postlethwaite, chaplain, professor. [December 21, 1881.]
First Lieut. Frank L. Dodds, Ninth Infantry, assistant professor.
Second Lieut. Francis J. Kernan, Twenty-first Infantry, instructor.

*Department of law.*

William Winthrop, lieutenant-colonel and deputy judge-advocate-general, U. S. A., professor. [August 28, 1886. By assignment under act of June 6, 1874.]
First Lieut. Frank L. Dodds, Ninth Infantry; Second Lieut. Francis J. Kernan, Twenty-first Infantry, instructors.

*Department of civil and military engineering.*

James Mercur, professor. [September 29, 1884.]
First Lieut, Harry F. Hodges, Corps of Engineers, assistant professor.
First Lieut. Lansing H. Beach, Corps of Engineers; First Lieut. Joseph E. Kuhn, Corps of Engineers, instructors.

*Department of tactics.*

Lieut. Col. Hamilton S. Hawkins, Twenty-third Infantry, commandant of cadets and instructor of tactics. [February 1, 1888.]

Capt. Joseph H. Dorst, Fourth Cavalry, senior assistant instructor of cavalry tactics.

First Lieut. John D. C. Hoskins, Third Artillery, senior assistant instructor of artillery tactics.

First Lieut. Charles J. Crane, Twenty-fourth Infantry, senior assistant instructor of infantry tactics, commanding company of cadets.

First Lieut. Edward E. Hardin, Seventh Infantry, assistant instructor of tactics, commanding company of cadets.

First Lieut. William W. Galbraith, Fifth Artillery, assistant instructor of tactics, commanding company of cadets.

First Lieut. John A. Johnston, Eighth Cavalry, assistant instructor of tactics.

Second Lieut. Daniel L. Tate, First Cavalry, assistant instructor of tactics, commanding company of cadets.

*Department of ordnance and gunnery.*

Capt. Henry Metcalfe, Ordnance Department, instructor. [August 28, 1886.]

Capt. Orin B. Mitcham, Ordnance Department; First Lieut. John C. W. Brooks, Fourth Artillery, assistant instructors.

*Department of practical military engineering.*

Capt George McC. Derby, Corps of Engineers, instructor. [January 4, 1889.]

First Lieut. John Biddle, Corps of Engineers, assistant instructor.

Herman J. Koehler, master of the sword.

Arthur A. Clappé, teacher of music.

*Relative rank of the officers on duty at the U. S. Military Academy.*

| Names. | Corps or regiment. | On duty at Academy since— |
|---|---|---|
| COLONELS. | | |
| Wilson, John M | Corps of Engineers | Aug. 26, 1889. |
| Michie, Peter S | Professor [Feb. 14, 1871] | Apr. 23, 1867. |
| Andrews, George L | Professor [Feb. 28, 1871] | Apr. 28, 1871. |
| Larned, Charles W | Professor [July 25, 1876] | Aug. 28, 1874. |
| Bass, Edward W | Professor [April 17, 1878] | Sept. 15, 1876. |
| LIEUTENANT-COLONELS. | | |
| Tillman, Samuel E | Professor [Dec. 21, 1880] | Aug. 28, 1879. |
| Postlethwaite, William M | Professor [Dec. 21, 1881] | Jan. 6, 1882. |
| Winthrop, William | Professor [Aug. 28, 1886] | Aug. 28, 1886. |
| Mercur, James | Professor [Sept. 29, 1884] | Oct. 7, 1884. |
| Hawkins, Hamilton S | Twenty-third Infantry, Commandant of Cadets. | Feb. 1, 1888. |
| MAJOR. | | |
| Tilton, Henry R | Surgeon, Medical Department | Jan. 26, 1889. |
| CAPTAINS. | | |
| Spurgin, William F | Twenty-first Infantry | Sept. 2, 1881. |
| Metcalfe, Henry | Ordnance Department | Aug. 28, 1886. |
| Williams, Charles W | Quartermaster's Department | July 1, 1886. |
| Dorst, Joseph H | Fourth Cavalry | Aug. 29, 1887. |
| Wood, Edward E | Eighth Cavalry | Aug. 28, 1889. |
| Derby, George McC | Corps of Engineers | Jan. 4, 1889. |
| Mitcham, Orin B | Ordnance Department | Sept. 11, 1886. |
| Kneedler, William L | Assistant Surgeon, Medical Department | June 15, 1888. |
| FIRST LIEUTENANTS. | | |
| Pratt, Sedgwick | Third Artillery | Aug. 28, 1888. |
| Lundeen, John A | Fourth Artillery | Aug. 29, 1887. |
| Hoskins, John D. C | Third Artillery | Aug. 28, 1888. |
| Crane, Charles J | Twenty-fourth Infantry | Aug. 28, 1888. |

*Relative rank of the officers on duty at the U. S. Military Academy*—Continued.

| Names. | Corps or regiment. | On duty at Academy since— |
|---|---|---|
| FIRST LIEUTENANTS—continued. | | |
| Macomb, Montgomery M | Fourth Artillery | Aug. 29, 1887. |
| Wisser, John P | First Artillery | Aug. 28, 1886. |
| Mott, Wallace | Eighth Infantry | Mar. 24, 1884. |
| Hardin, Edward E | Seventh Infantry | Sept. 7, 1887. |
| Edgerton, Wright P | Second Artillery | Jan. 28, 1889. |
| Pettit, James S | First Infantry | Aug. 28, 1888. |
| Biddle, John | Corps of Engineers | Dec. 21, 1887. |
| Hodges, Harry F | Corps of Engineers | Aug. 28, 1888. |
| Weaver, Erasmus M., jr | Second Artillery | Aug. 28, 1888. |
| Beach, Lansing H | Corps of Engineers | Aug. 28, 1889. |
| Brown, William C | First Cavalry | Aug. 1, 1885. |
| Rowan, Hamilton | Second Artillery | Aug. 29, 1887. |
| Galbraith, William W | Fifth Artillery | Aug. 29, 1887. |
| Johnston, John A | Eighth Cavalry | Aug. 29, 1887. |
| Landis, J. F. Reynolds | First Cavalry | Mar. 24, 1886. |
| Dodds, Frank L | Ninth Infantry | Aug. 29, 1887. |
| Noyes, Charles R | Ninth Infantry | Aug. 28, 1888. |
| Newcomb, Warren P | Fifth Artillery | Aug. 29, 1887. |
| Benson, Harry C | Fourth Cavalry | Aug. 29, 1887. |
| Kuhn, Joseph E | Corps of Engineers | Aug. 31, 1889. |
| Barney, George F | Second Artillery | Aug. 28, 1889. |
| Jackson, Alfred B | Ninth Cavalry | Aug. 29, 1887. |
| Hunter, Charles H | First Artillery | Aug. 28, 1889. |
| Allen, Henry T | Second Cavalry | Aug. 28, 1888. |
| Brooks, John C. W | Fourth Artillery | Aug. 28, 1889. |
| Freeman, Samuel D | Tenth Cavalry | Aug. 29, 1887. |
| SECOND LIEUTENANTS. | | |
| Tate, Daniel L | First Cavalry | Dec. 17, 1888. |
| Kernan, Francis J | Twenty-first Infantry | Aug. 28, 1888. |
| Hodges, Henry C., jr | Twenty-second Infantry | Oct. 8, 1886. |
| Alvord, Benjamin | Twentieth Infantry | Aug. 29, 1887. |
| Forsyth, William W | Sixth Cavalry | Aug. 28, 1888. |
| Flynn, William F | Eighth Cavalry | Aug. 28, 1888. |
| Cameron, George H | Seventh Cavalry | Aug. 28, 1888. |
| Bellinger, John B | Fifth Cavalry | Aug. 28, 1888. |
| Hubbard, Elmer W | First Artillery | Aug. 28, 1889. |

After the formal adjournment of this Board, and in the course of the general investigation committed to Captain King, Dr. Edwards, and such other members who might choose to remain and witness the examination of cadet candidates, the following matter was brought to the attention of Captain King, who communicated it to the secretary of the Board, who has properly embodied it in the report. We approve the suggestions, and hope the matter may receive the early and effectual attention of the authorities at West Point, and that necessary funds may be provided to make the changes. The topic properly belongs to the subcommittee on "buildings, grounds, and police administration," but we prefer to leave it here in its proper historical relations to the proceedings of the Board:

DEAR SIR: After the adjournment of the Board, and when too late to reach my associates of this committee, a matter was brought to my attention which deserves the consideration of the Board itself.

As you will remember, the cadet sinks are in the stone building on the south side of the area of the barracks and east of the guard-house. The building itself is unsightly; is plainly visible to all persons passing along the road in front of the barracks and "academic;" its adjuncts, placed along the stone revetment wall, are equally unornamental, and all of them are, or were, the sources of occasional embarrassing inquiry on the part of visitors eager to learn the purpose of every structure at the Point.

These buildings are all out of place. Much time is lost to the cadets in going to and returning therefrom; much discomfort is occasioned in stormy weather, and in

the interests of discipline they should be speedily removed. If there be a time during study hours when cadets from different divisions desire to meet, then the chosen rendezvous is the sink, and only by frequent inspections on part of the officer-of-the-day is the system kept in check.

Whatever fears may have been entertained when the cadet barracks were built that sinks in the basement would render the whole structure unhealthful, I believe that the improvements in plumbing and drainage are now such as to render it perfectly safe to place the closets there, and in this view I am sustained by prominent officers of the Academy. Each division is divided into sixteen rooms, and gives quarters for thirty-two cadets. The divisions are walled off one from the other, and the basement doors can be kept closed so as to prevent any "visiting" from division to division in study hours, but it is in the basement of each division that the water-closets for its occupants should be built. I am informed that flues for air and ventilation now extend from basement to roof, and that the drainage pipes, sewers, etc., could be directly connected with those of the present sink. It may not be possible for the Board of Visitors of this year to make anything more than a recommendation that this project should be inquired into and an estimate of the probable cost submitted, but I trust this, at least, may be done.

With those buildings out of the way, the cadet guard-house, containing the offices of the commandant, officer-in-charge, officer-of-the-day, the clerks, the arm-rooms, etc., could then be enlarged. It is now utterly inadequate. Officers commanding cadet companies have frequent occasion to see the members of their commands on business, and are compelled to "take turns," one at a time, in one room about half the size of the cadet barrack-room. All papers, correspondence, permits, explanations, etc., have to be received and indorsed there. If visitors arrive, anxious to see a cadet relative, the officer-in-charge must give up his room for the purpose. The instructors of the cavalry and artillery branches have no rooms or office in the building. I believe that an appropriation has been made for the necessary reception and retiring rooms for visitors, but the guard-house should speedily be enlarged to twice its present size.

I am, sir, very respectfully, yours,

CHARLES KING,
*Captain, U. S. Army, Retired.*

Dr. ARTHUR EDWARDS,
*Secretary of the Board of Visitors.*

## III.—ORDNANCE, ARMAMENT, AND EQUIPMENT.

*On ordnance, armament, and equipment.*—Hon. John W. Daniel, chairman; Hon. Cushman K. Davis, Hon. George W. Steele, and Capt. Charles King.

The clear, cogent report of the subcommittee tells its own story of the needs in the departments concerned. We emphasize the request already alluded to for separate horses, for cavalry and artillery use, and for the unanswerable reasons named. We have spoken of the fact that some officers favor the assignment in turn of some of the finest light field batteries to West Point, perhaps as a reward to the batteries themselves, in order that they may exemplify the drill and serve the cadets in other valuable respects.

There is a question of simple justice in the matter of better heavy and light siege guns in the water and mortar batteries. One of the guns exploded recently, and it is a marvel that no one was killed. The guns are old, dangerous, and should be replaced without unnecessary delay. They are a peril and but for that fact they would be a joke. We advise that they be relegated to poetic uses as convenient harbor for birds' nests, to exemplify the coming, but perhaps distant, reign of universal peace.

Concerning this important theme we quote the testimony of the experts whose suggestions are contained in

### THE SUBCOMMITTEE'S REPORT.

UNITED STATES MILITARY ACADEMY,
*West Point, June* 11, 1889.

To the BOARD OF VISITORS:

The committee of the Board of Visitors on "ordnance, armament, and equipment," respectfully report that they find the material embraced in this classification in good condition, and the affairs connected therewith well administered. We deem it important and respectfully recommend:

1. That horses should be provided for the cavalry school separate and distinct from those used in artillery exercises. Heavy strong horses are desirable for artillery, and quick, active horses for the cavalry. For efficient service the horse must be trained as well as the man; nor can the man acquire proper proficiency unless the horse used by him is trained to conform his movements to the commands or movements of his master.

The training of a horse for the artillery disqualifies him for proper use in the cavalry. His mouth is made hard and insensible to the bridle; and artillery horses, when ridden in a cavalry charge, throw it into disorder and confusion.

2. The committee witnessed the cavalry exercises, under Captain Dorst, and the gymnastic exercises, under Instructor Koehler, with great interest and pleasure. "The charge" was omitted from the exercises of the cavalry for the reason that artillery horses were ridden by the cadets, and could not be relied upon to execute the movement.

In the gymnasium four or five wooden horses are needed, so fashioned as to be of the same size and shape as real horses; some small and narrow through the shoulders, others round and thick, so as to be types of differently shaped horses. In these gymnastic practices, which we regard as of great importance and as admirably conducted, the cadets would thus be enabled to learn to adapt themselves to the form of the horse before learning to ride. We regard the necessity for cavalry horses, and for wooden horses assimilated in shape and size to real ones, as of such importance that we beg leave to incorporate in our report the communications of Capt. J. H. Dorst, Fourth

Cavalry, senior assistant instructor of cavalry tactics, dated, respectively, June 4, 1889, and April 3, 1888, herewith filed, marked Exhibits A and B.

3. A maxim machine gun and a Hotchkiss rapid-fire gun ought, in our opinion, to be furnished for use in the instruction of the cadets. It is estimated that $5,000 would suffice, allowing for carriages and a supply of ammunition for target practice. Remembering that West Point is a normal school in which we are educating the teachers of our armies, the importance of providing the most modern and most approved weapons for their instruction can not be exaggerated.

We respectfully invite attention to the accompanying letter of Capt. Henry Metcalfe, instructor of ordnance, dated June 4, 1889, from which may be gleaned more fully the considerations which support our recommendations. (See Exhibit C, herewith filed.)

4. The senior assistant instructor in ordnance is not allowed extra pay, although officers performing like service in other branches of instruction are. There is no just ground, as it appears to us, for this discrimination. In view of the great and constantly increasing improvements in ordnance and gunnery, and of the great part that this department must play in the event of war, it ranks second to none in importance; and, indeed, would seem to rank first in so far, at least, as instruction in it is concerned.

Our militia are trained in infantry tactics and in the use of small arms. There is scarce a county or town in the United States that could not turn out to bugle-call a respectable body of ready-made cavalry. But in ordnance and gunnery few have any opportunity whatsoever for training, even of the simplest kind.

The West Point cadets, who must become the chief, and nearly the only, instructors of our armies in this department, should certainly lack nothing in armament and equipment and instruction to prepare them. We recommend that senior assistant instructor of ordnance be given captain's pay.

5. We also invite attention to the letter of First Lieut. J. D. C. Hoskins, senior assistant instructor of artillery tactics, dated June 6, 1889, and marked Exhibit D.

From this it will be seen that the guns in use at the Academy are almost all of obsolete patterns. No two guns in the sea-coast battery are mounted on the same kind of carriage, and hence a uniform and satisfactory system of instruction is impracticable.

The "cranes" on some of the carriages are too short; others do not traverse properly, and there are other imperfections which impair accurate and efficient instruction. The siege mortars are not of uniform caliber. The field battery, as a means of instruction, is unsatisfactory. The guns are of old patterns, the horses, being used in both artillery and cavalry exercises, are spoiled for proper use in both services, and their harness does not fit them. The battery is simply what Lieutenant Hoskins styles it, "a make-shift," and as such is not capable of being made the instrument of such instruction as should be given at West Point.

6. We file, as Exhibit E, the letter of June 8, 1889, from Lieut. C. J. Crane, senior assistant instructor of infantry tactics, and concur in his recommendation that Blunt's "Firing Regulations for Small Arms" should be provided for instruction of the cadets engaged in small-arms target practice.

7. And as Exhibit F, we file the letter of First Lieut. W. C. Brown, adjutant of the Academy, in reference to the Academy band. This is the only military band recognized by law, and it would seem that the Academy should be provided with a first-class band. It is in service the year round. It is the only concomitant of the cadets' education which does not devolve on them heavy and exacting tasks. The strain upon mental and physical qualifications is great, and stimulus and relief are alike afforded by the band. We therefore recommend the statements of Adjutant Brown to the generous consideration of Congress.

8. The United States Government is not prepared off-hand to furnish the improved guns which are necessary to the complete and appropriate armament and equipment of the Academy. But the subject is of too great consequence to drop out of attention, and it is recommended that just as rapidly as circumstances permit provision be made to supply existing deficiencies.

9. A telephone system, with a central office, is needed at the Academy. The considerations in favor thereof, with estimates, are fully shown in Exhibits G and H, herewith submitted.

10. The exercises observed by your committee, whether on the drill ground, in the gymnasium, or in the examination room, have impressed them most favorably. To them the Academy appears to be in a state of thorough discipline, its officers and its cadets evincing every mark of efficiency.

Very respectfully submitted.

JNO. W. DANIEL.
CUSHMAN K. DAVIS.
CHARLES KING.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
*West Point, N. Y., June* 6, 1889.

SIR: To enable the superintendent to comply with request of chairman of committee of Board of Visitors on "ordnance, armament, and equipment," you are requested to report:

(1) What constitutes the present equipment of the cavalry, artillery, and infantry of the Corps of Cadets.

(2) What additional equipment do you consider necessary or desirable for efficient instruction?

It is suggested that a separate and distinct report be made in the case of each department of instruction above named, reference being made to the requirements of the regulations of the Military Academy in regard thereto.

Very respectfully, your obedient servant,

W. C. BROWN,
*First Lieutenant First Cavalry, Adjutant.*

The COMMANDANT OF CADETS,
*Present.*

[First indorsement.]

HEADQUARTERS UNITED STATES CORPS CADETS,
*West Point, N. Y., June* 11, 1889.

Respectfully returned to headquarters United States Military Academy. Attention is invited to the inclosed reports of Captain Dorst, Lieutenant Hoskins, and Lieutenant Crane, pertaining respectively to the cavalry, artillery, and infantry arms.

The views expressed by Captain Dorst have been given more than once and are approved. The recommendations concerning the gymnasium are easy of accomplishment and should be carried out, excepting the use of steel sabers when not under supervision of their instructor.

The importance of having separate horses for the instruction in riding can not be too strongly urged. This matter is also fully discussed by Lieutenant Hoskins, whose views are also approved.

The recommendations concerning the several batteries should be carried out, excepting that it is thought advisable in the case of the mortar battery that it shall be eventually equipped with modern breech-loading rifled mortars.

Lieutenant Crane's recommendation concerning the supply of the "firing regulations for small arms" to the third class, should be carried out, but does not need action outside of the academic board.

The sashes referred to are of silk and costly. Certain sashes are provided free of expense to the cadet, but being of worsted are not popular, and for many years cadet officers and first sergeants have been allowed to purchase silk sashes. These served as part of their equipment after graduation when they were worn by officers in the Army.

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

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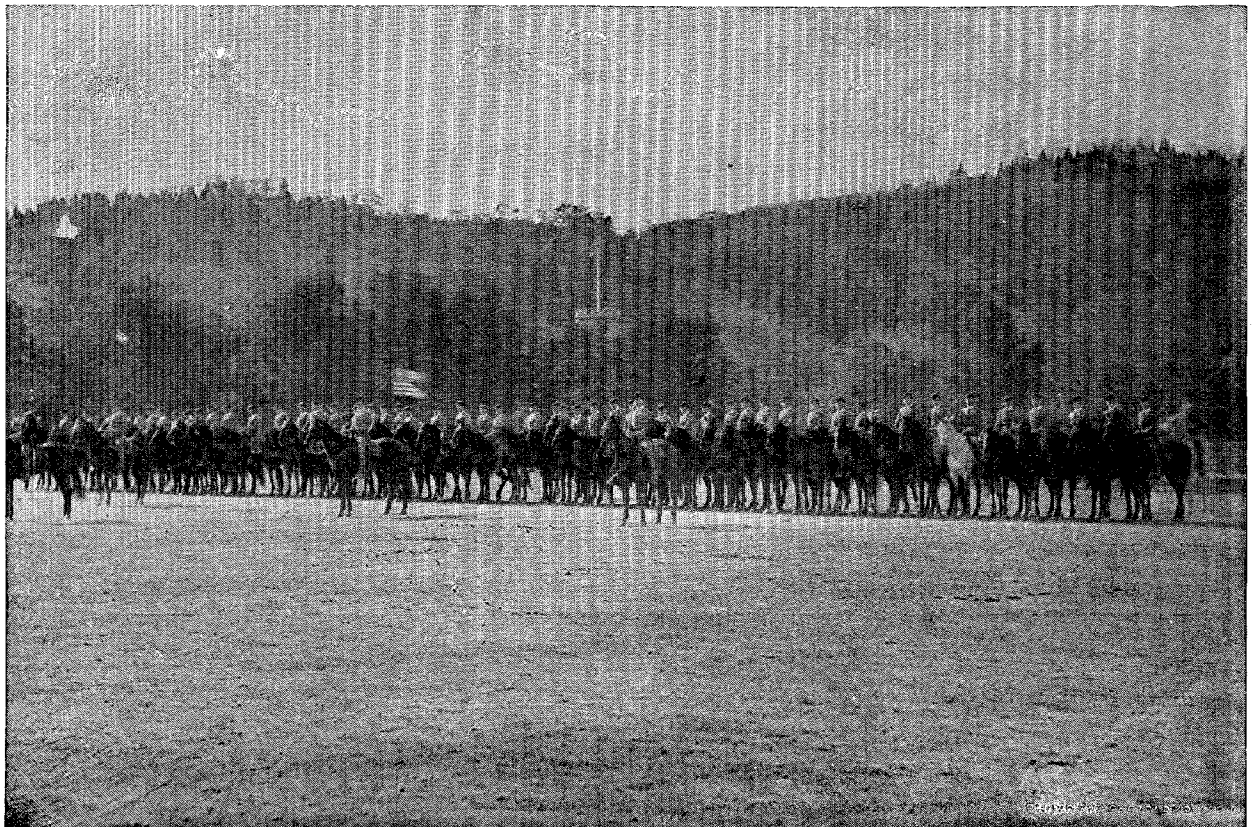
## EXHIBIT A.

### CAPTAIN DORST'S RECOMMENDATIONS AS TO CAVALRY.

WEST POINT, N. Y., *June* 7, 1889.

SIR: With reference to the request of the committee of the Board of Visitors on ordnance, armament, and equipment, I have the honor to say that I know of no recommendation to make with regard to the cavalry instruction that would come specially under that head.

I think that in the gymnasium there should be four or five wooden horses, so fashioned that they would be of the same size and shape in the body as real horses, and of different sizes, some small and narrow through the shoulders, others round and thick, so as to be types of differently-shaped horses. The cadets could thus learn in the gymnasium to adapt their limbs to the conformation of the horse before they commence to ride. In addition, I think the upper classes should be allowed, in the gymnasium, the use of sabers, either of steel or wood, just as they now are permitted to use Indian clubs and dumb-bells. Then, mounted on the wooden horses, they could practice the cuts and thrusts, especially those that are made to the ground,



CADETS AT CAVALRY DRILL—LOOKING WEST.

I learn from Mr. Koehler, the sword master, that after the second and third classes commence riding the cadets show a disposition to practice a good deal on the wooden horses. Owing to the small number of horses, they are usually monopolized by the first and second class men to the exclusion of third-class men. This tendency of the cadets shows, I think, the advantage of having wooden horses, shaped like real horses, and of having a greater number.

Captain King, U. S. Army, of the Board of Visitors, is a member of this committee and has been given a letter on the subject of cavalry matters generally, written by me to the commandant of cadets, dated April 3, 1888. In that letter I spoke of the advisability of having the cavalry detachment excused from all duty except that connected directly with the care of the horses, and of having different horses for light-battery drill. The latter subject may perhaps be considered as falling under the head of equipment. As far as I am concerned it is immaterial how horses are provided for artillery work, though in one instance I have suggested that a light battery be ordered here, and in another that the post quartermaster furnish them from his stable. I would strongly object to having additional horses for such work assigned to the cavalry detachment. In the first place, there is not stable room for them, and in the second, there are not men enough to care properly for the number on hand now. Artillery horses would require constant exercise during those months when there is no artillery drill, and to keep them in training to pull together and work smoothly, they would frequently have to be exercised in harness. The proper care of this separate detachment of horses would alone require all the time of the cavalry men.

I find that in urging any change for the future there is always a disposition to look back to the past, and to urge that what was well enough some thirty or forty years ago ought to be well enough now. But the past system has not been a good one, but simply a made-shift in the interest of economy, and if a better one can be substituted there is no argument for the retention of the old one. The cavalry branch of the Army has been making rapid improvements recently in the methods of instruction, and more improvements are certain to come. In one respect they will be based on much higher training of the horse. Instead of using him merely as a means of transportation, he will be taught to be far more docile and obedient to the rider, when ridden either alone or in ranks. The higher the training of the horse as a saddle animal, the more and more does he become unfit for draft purposes, and the more are his usefulness and docility as a saddle-horse impaired by using him for draft. The instruction here should at least be kept abreast of that in the service, but if no change is made the instruction in the service will soon surpass that of West Point. Orders have already been issued from the War Department, reducing the maximum limit of age for cavalry recruits to thirty years, and there is hardly a doubt that in time it will be reduced still more, so as to enlist only men young enough to learn riding readily. In the school of the trooper and riding-hall exercises, the cadets surpass any soldiers in the Army, but with the concentration of troops at large and permanent posts, gymnasiums and riding schools will be established, and, with limited time for instruction allowed here, it may be more difficult for the cadets to maintain their superiority. The average troop of cavalry can now drill much better in the school of the company than the cadets, for the latter have only three days in the week, during the month of April of each year, for such drill, and that drill is practiced under difficulties, for on the same days the horses are used for artillery drill in the afternoon.

Some years ago the allowance of time for cavalry exercises for the second class was reduced by nearly one-half. It is true that only three months out of nine were thus cut off, but by the former arrangement the class drilled three days in the week, and in the morning. Now they drill twice one week and three times the next, and after 4 o'clock in the afternoon, when they are fatigued after the duties of the day, and their vitality is lower than in the morning. This materially affects their interest and their progress in riding.

Very respectfully, your obedient servant,

J. H. DORST,
*Captain, Fourth Cavalry, Senior Assistant Instructor Cavalry Tactics.*

The COMMANDANT OF CADETS.

## EXHIBIT B.

### CAPTAIN DORST'S FURTHER RECOMMENDATIONS AS TO CAVALRY.

[Furnished to Board of Visitors by their request.]

WEST POINT, N. Y., *April* 3, 1888.

SIR: I have the honor to make the following recommendations upon matters pertaining to the cavalry branch of the tactical department:

In the first place, I consider it most important that the stable and riding hall be warmed in winter by some artificial means. My reasons have been given and a method suggested in a previous letter to the adjutant of the Academy, dated December 29, 1887.

In the order of importance, the next subject that demands attention is the one concerning the erection of a new barrack building, near the stable, for the cavalry detachment. The reasons for recommending this have been announced so frequently in the past eighteen years, by officers holding my present position, and by different Boards of Visitors, that it seems a waste of time to repeat them.

The distance from the present barracks to the stable must be nearly three-quarters of a mile. The men for duty travel it four times a day. The heaviest demand upon the men is made between October 1 and May 1. The morning stable duty, and necessary attention to the horses after the afternoon riding and artillery drill, require them to commence their duties earlier and remain at them later than any other troops at the post, while in winter those detailed for cadet rides are employed nearly all day, and have to travel the distance from the barracks to the stable at least six times. In the severe weather this traveling to and fro becomes a real hardship, especially as the men frequently have to break their road through the snow before daylight in going to morning stable duty.

It can not be expected that men, numb with cold, or who have just traveled three-fourths of a mile in a storm of snow, rain, or sleet, will take a hearty, cheerful interest in work then required of them. The Government interest suffers; but, this aside, no officer who has spent the past winter here can deny the propriety of quartering the detachment near the stable, on the ground of humanity alone.

It is also desirable that the men be excused from the performance of post-guard duty, from artillery duty, and from all fatigue or other duty that may cause their absence from stable and riding-hall duty. They should be required only to take proper care of the horses and cavalry equipments, to keep the stable and riding hall in order, and to perform stable-guard duty. To support this recommendation I wish to call attention to the fact that with an allowance of only two more privates these men have from 30 to 50 per cent. more horses and equipments to care for than the men of a troop of cavalry; that also during the day a detail of at least one non-commissioned officer and ten privates must be kept in attendance upon the cadets to saddle and bridle the horses required by them, and, in winter, the men thus detailed have to get horses ready four different times for as many platoons that ride at different hours, and rub off and blanket the heated horses when taken from the hall; that they have to look after the hurdles and heads during the rides; that in August, and in addition to the riding details in April and October, a permanent detail has to be made of twelve men competent to act as lead drivers at light-battery drill, while a daily detail is made of twelve more men to drive wheel-horses; that, in addition to all these things, they do their proportion of post-guard duty, and are called upon to cut ice and possibly to shovel snow in winter. Indeed, taking the duty exacted from them throughout the whole year, they do at least twice as much work as a troop of cavalry in garrison, and it is more than they can find time to do well. In consequence, through no fault of the men, the work is slurred over, the equipments are shabby, and the horses are but half groomed.

With new barracks, a warm stable, and relief from main-guard and artillery duty, I believe the detachment could be reduced, without detriment, by six or eight privates, which would admit of a proportionate increase in the artillery detachment. I wish to impress the fact that even then the detachment will still be required to perform much more work than any troop or light battery in the Army.

Owing to the absence of men on guard, only about thirty privates can be counted upon for stable duty, and for the same reason there is a change of some individuals from day to day. With an equal number of permanent men, permanent assignments of horses and equipments could be made, and each man held responsible for the care and condition of those assigned to him. Shirks could find no loop-hole to evade the consequences of their own neglect, while proper commendation and encouragement could be given the good soldier, and with it he would acquire an interest in what he now regards as merest drudgery. In a word, the men could be made to work efficaciously. I hope it will not be considered out of place for me to say that if a company

of infantry were stationed here it could relieve the cavalry detachment of guard duty. If the infantry company can not be accommodated with quarters, the building now occupied by the detachment could be given it after new cavalry barracks are built.

With reference to artillery duty, I think it is even more necessary to exempt the horses from it than the men. In the first place, cavalry horses are not suitable for that sort of work. Forty-eight horses are required for the artillery teams, and among eighty horses here there is always more or less difficulty in finding forty-eight that will work together, while some nervous and spirited ones are unsafe to work in harness at all. By using the horses alternately for draft and saddle purposes they become unfit for the latter. As an example, upon commencing cavalry drill with the first class last September I was astonished to see how restive, nervous, and disobedient the horses were, and could not account for it. They had been used at light-battery drill in August. By the end of September they became tolerably quiet, but in October the battery drill was resumed. I saw the horses made to throw themselves into the collars, charge at speed across the plains; then made to hold back suddenly while their mouths were sawed to bring them to a halt. As a consequence the mouth that had been made sensitive by delicate handling and quiet treatment was spoiled, an even, quiet, gait was replaced by a dancing, unsteady one, nervousness and fretfulness returned, and some horses would seize every opportunity to try to run away. The result of the drilling was not at all satisfactory. It was impossible to obtain the precision and accuracy I have often observed in troops of cavalry with poorer riders and less intelligent men, and it was unsafe to attempt charging by platoon. If cavalry drill on the plain is intended to instruct the cadets to perform drill maneuvers properly, its object can never be fully accomplished while the horses are used for artillery drill. If it is intended merely as a riding exercise, the cadets might nearly as well be taken to ride along the road. The result of the drill is injurious in some respects, as it gives the cadets a false notion of what a cavalry drill ought to be. Regularly, year after year, at the graduating ride, the cadets are ordered to charge across the plain, and regularly do they go to pieces before they have charged twenty yards. They and others look upon it as perfectly natural and proper. It was not till I had been in the service several years that I knew that a cavalry troop could charge in line for a hundred yards or more and then be brought back to a slow gait without a single horse bolting and with comparatively little disorder. And I have even known officers of longer service than mine to express surprise that a battalion of four troops of cavalry should move at a trot with no horse galloping nor cantering. Their ideas of cavalry movements were formed at West Point.

As an instance of the possible result of spoiling a horse, I wish to say that it was while riding a horse with a spoiled mouth that Cadet Winslow, of the second class, had his leg broken. The animal is a nervous and high-spirited mare, of excellent form and speed, and with a mouth naturally sensitive. She has been used in harness at artillery drill, and that has, doubtless, developed in her the confirmed habit of tossing up her head to escape the action of the bit and then bolting. She threw up her head and apparently had started to bolt with Cadet Winslow when she slipped or stumbled and fell on him. She had gathered so much impetus that after falling she rolled over him and broke his leg.

For the foregoing reasons, and in order to give the cadets a correct idea of what a light battery is, it would be well to have one stationed here, to be used at the proper times for their instruction. If it be out of the question to have one stationed here, it may be possible to have one camped here during the months the cadets receive practical instruction in artillery drill.

With regard to lesser matters, the stalls in the stable need flooring with some material harder than clay. The objection to clay is that the horses soon wear holes in it with their feet, and it also absorbs their liquid excrement. The vapor that arises from it creates a foul smell in the stable and is injurious to their health. It is true that the holes can be filled from time to time, but in this damp climate the clay, to the depth of several feet, ought to be removed at least three times a year and replaced by fresh clay. During the greater portion of the year the cavalry detachment has not time to remove the old nor to dig and haul fresh clay; and anyhow, as the horses are kept at the stable except for a short time in summer, there would be no opportunity to refloor the stalls in any other season. Some time ago I spoke to the post-quartermaster, Captain Williams, about laying cement floors next summer while the horses were out at pasture, but he could not promise to have it done. There are objections to hard floors, but in my opinion they are better than clay floors under the existing conditions. Permanent wooden floors might be more objectionable than those of clay, but I have seen in private stables a floor made of wooden grating so arranged as to seem less objectionable than any other I know of. Each stall was paved with concrete or asphalt. The pavement had a slight declination towards the rear of the stall for drainage. On this pavement was placed a strongly made grating of hard wood, braced with transverse pieces underneath, the ones at the rear of the stall being deeper than those in front, so that when the grating was

in place on the inclined pavement its top surface was level. To make a continuous flooring for contiguous stalls the gratings were made in sections whose length was equal to that of the stall, and which fitted snugly against each other when placed side by side. The bars of the grating were from two to three inches wide; and to prevent the horse from catching his feet between them they were not more than half an inch apart. The liquid excrement of the horse passed through the grating to the pavement below. When the stalls were cleaned the gratings could be raised, and they and the asphalt pavements washed with a hose. The washing could not be done here in the winter until after the steam pipes are put in, for the water would freeze. Still it would be advantageous to have such a floor even now; and if it is impossible to get the gratings next summer I hope preparation may be made for them by laying concrete pavements that can be used as stall floors till gratings can be gotten.

The iron hay racks fastened to the walls above the horses' heads should be taken down. In eating from them the horses get their eyes full of dust, and are liable to have them hurt by projecting straws. Wooden mangers, reaching from the point of a horse's shoulder to the ground, should be substituted. There is a horizontal rail across the head of each stall, about two feet from the wall. It supports the feed-box and could be made the top rail of the manger. This would also prevent the horses from indulging in a habit they have of getting their heads under this rail and wearing hair from their manes by rubbing their necks against it.

I understand that an estimate has been forwarded for a new wainscoting, or leg-guard, for the riding-hall. For appearances' sake, when it is put in, it should be painted, not whitewashed. The interior walls of the hall should receive a coating of plaster and have a smooth, hard finish. Visitors are apt to comment upon the forbidding appearance of the hall and condition of the galleries. The walls are covered with pulverized tan-bark, and the galleries are not fit for ladies to enter. I do not know that it is practicable to plaster the walls, but if they had a smooth finish the dust would not adhere to them so readily, and they could be cleaned more easily. On cloudy days the gallery on the north side of the hall darkens the track beneath it, and the projecting portion should be removed. The recess, or retired portion, could continue in use. The gallery on the south side should be renovated and supplied with chairs; the railing should be painted, the floor covered with oil cloth or matting, and at least that portion of the wall in its vicinity should be plastered and whitened. The last Board of Visitors recommended that the gallery space be increased. Two new and wider galleries could be put in, one at each end of the hall, and extending from side to side. To provide for more visitors at the graduating rides, temporary wooden platforms, four or five feet high, might be erected under the end galleries. Wooden sheeting, inclined like the wainscoting, should be placed in front of the platforms to prevent the horses from injuring their riders by running against them.

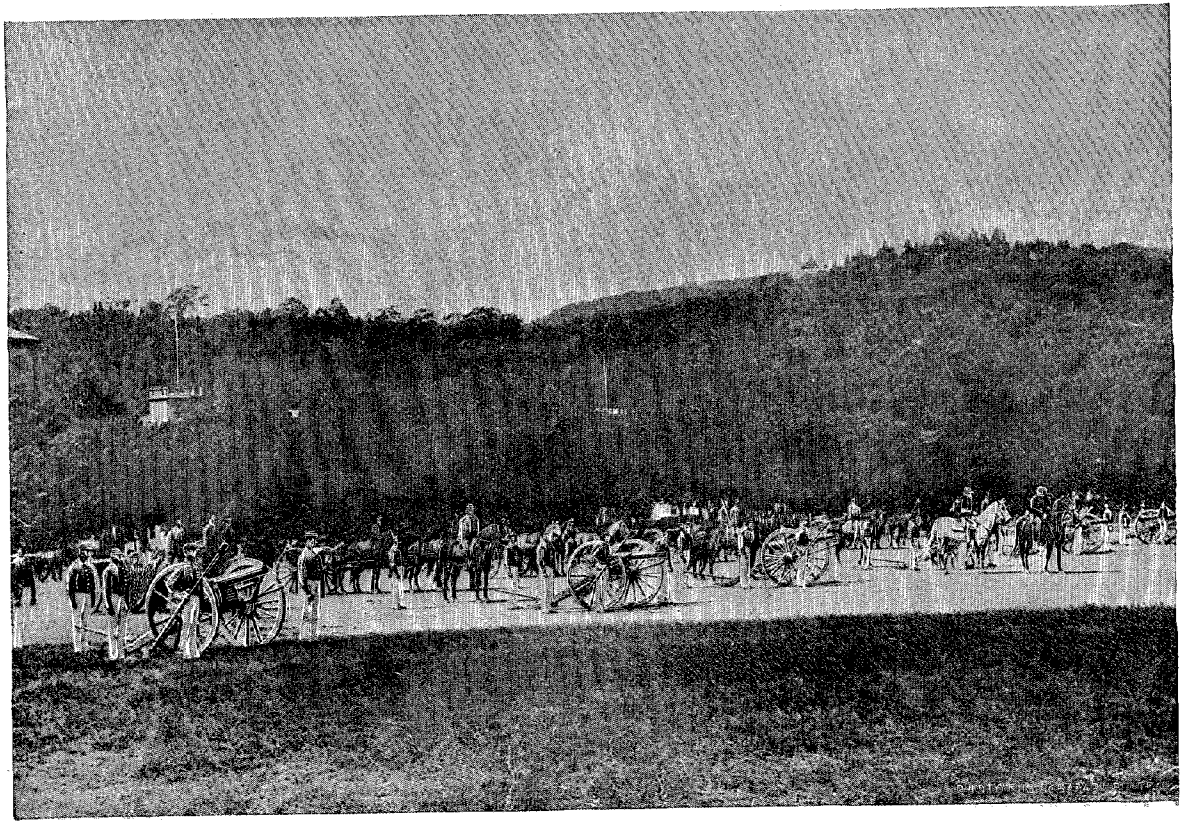
The window-casings have shrunk so much that the hall is full of draughts. The two large openings near the roof—one at each end of the hall—should have glass put in them or be closed up, preferably the former.

The amount of tan-bark supplied is insufficient. In a conversation with Mr. Newlands I learned that it has been customary every year to ask for an appropriation of $300 to purchase tan-bark without considering the amount the money will buy. In recent years the price of tan-bark has risen, and $300 now buys 3,750 bushels as against 5,000 bushels some years ago. A riding-hall in New York, with less than half the area of the cadet riding-hall, uses more than the larger amount. There is now a year's supply (3,750 bushels) on the floor of the hall, and at least that much should be put on it twice a year. The annual estimate should be for 8,000 bushels.

My last recommendation is that only horses of some one color be sent here. It is a custom of the service for troop horses to be of one color; it is prescribed by the cavalry tactics, which have the force of regulations, and it adds very much to the appearance of a mounted command.

Every foreign officer I have met here has expressed a desire to see the stable and riding-hall. I have never suggested the subject because their condition is nothing to be proud of, while the rough-looking, half-groomed lot of horses, with their rusty bits and shabby, untidy trappings, present what would be considered a disgraceful appearance if compared with the worst cavalry troop in the army.

There is no reason why a company of mounted cadets ought not to approximate as closely to a model troop of cavalry in drill, appearance, and neatness as a company of dismounted cadets does to a model company of infantry. Every horse should be so well groomed that when he is brought into the hall his coat would fairly shine; bits and metal work should be kept bright; saddles and straps should be highly polished, and all the appointments of the stable and riding-hall should be consistent with the habits of order and neatness that are imposed upon the cadets as members of the infantry battalion organization of the corps.



CADETS AT FIELD-ARTILLERY DRILL—LOOKING WEST.

If the recommendations I have made can be carried into effect, I believe there will be no difficulty in securing this result.

Very respectfully, your obedient servant,

J. H. DORST,
*Captain Fourth Cavalry, Senior Assistant Instructor of Cavalry Tactics.*

The COMMANDANT OF CADETS,
*Present.*

[First indorsement.]

HDQRS. U. S. CORPS CADETS,
*West Point, N. Y., April 5th,* 1888.

Respectfully forwarded to Headquarters U. S. Military Academy. The recommendations of the senior assistant instructor of cavalry tactics are approved. Personal inspection has verified the accuracy of the statements made and action can not be too strongly urged.

Captain Dorst was directed to prepare this letter and to set forth, as he has done, only the most important requirements needing attention.

H. S. HAWKINS,
*Lieutenant-Colonel, Commanding Corps Cadets.*

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EXHIBIT C.

LIEUTENANT HOSKINS'S REPORT ON ARTILLERY EQUIPMENT.

WEST POINT, N. Y., *June* 6, 1889.

SIR: Adverting to the letter from the Superintendent of the U. S. Military Academy, dated this instant, referred to me for report under the two interrogatories contained therein, I have the honor to submit as follows:

(1) "What constitutes the present equipment of the * * * artillery of the corps of cadets?"

No artillery equipment pertains to the corps of cadets. The equipment used by the corps exclusively pertains exclusively to the instructor of ordnance. It consists of a battery of sea-coast guns, of which the cadets use two 15-inch smooth-bore guns, three 8-inch rifles (muzzle-loading), and one 13-inch (muzzle-loading) smooth-bore mortar.

A battery of six 30-pounder muzzle-loading rifles (Parrott's), a battery of six siege-mortars, three 8-inch and three 10-inch; one field battery of six 3-inch muzzle-loading rifles, used and partially equipped as a mounted battery; one field battery of six 3-inch muzzle-loa ling rifles, and one of six 12-pounder (Napoleon) guns.

(2) "What additional equipment do you consider necessary or desirable for efficient instruction?"

The equipment of guns is ample as relates to quantity, but the pattern of most all is obsolete. In the sea-coast battery the 8-inch muzzle-loading rifles should be replaced by breech-loading rifles of equal caliber; this, however, is not practicable for the present. No two guns in this battery are mounted on the same kind of carriage; this fact renders a uniform and satisfactory system of instruction impossible. All are purely experimental carriages, and as such would be more appropriately placed if under a case in the ordnance museum. The "cranes" on some of the carriages are too short, others do not traverse properly, and still others are imperfect in details, which seriously impair the efficiency of instruction. For proper instruction at this battery the carriages should be replaced by others of the most approved construction, and the pattern should be uniform throughout.

The siege-guns now in battery are obsolete, and to be replaced, I understand, by six 4.5-inch muzzle-loading rifles of cast iron. For these, in turn, should be substituted steel breech-loading rifles as soon as the Ordnance Department of the Army is able to supply them. The siege-mortars used by the cadets should be uniform in caliber throughout the battery, otherwise the instruction thereat can not be satisfactory. I recommend the replacing of the 8-inch by three 10-inch mortars.

The 3-inch muzzle-loading rifles are obsolete and should be replaced by the modern 3.2-inch breech-loading rifles, which the Chief of Ordnance promised to the Army more than two years ago.

All of these batteries should belong to the tactical department exclusively, and be under the absolute control of the instructor of artillery. He, alone using them, should be charged with the responsibility for and care of them. This brings me to

the mounted field battery, a subject upon which more is to be said than is, perhaps, contemplated by the letter above mentioned. This battery, as a means of instruction for cadets in field artillery, is most unsatisfactory. The guns, horses, and men which compose it are contributed by two distinct branches of instruction, one remotely and the other in no way related to practical artillery. Hence all the component parts of the battery are absolutely beyond the control of the officer commanding it. The guns are obsolete, the horses unadapted to their work, the harness unsuited to horses so small and light, and the men (cavalrymen) uninstructed and not amenable to instruction as artillerymen. The horses are purchased exclusively with a view to their suitability for cavalry purposes and for the greater part of each year serve as such. For such service they are subjected to a system of training which unfits them for work in harness, and their use in artillery drills undoes all efforts expended to render them efficient as cavalry horses. The variety of uses to which they are put and the number of inexperienced persons to whose handling they are subjected disables many of them, and it frequently happens that the quartermaster has to be applied to for horses sufficient to properly horse the battery. A battery so constituted (a mere makeshift) can never be an efficient means of instruction. For this the personnel, horses, and material must be distinct, and entirely under the administration of the instructor. Men and horses must be thoroughly trained and educated before the point at which the instruction of cadets can begin is reached. For this reason much time is lost, and the season for drill passes without any satisfactory progress having been made in the instruction of the cadet. The time allotted to the instruction of cadets in this important branch of their prescribed course at the Academy is too limited; entirely so as compared with that consumed by other branches. Cavalry instruction is carried on throughout the whole academic year. It would be only a fair concession to the claims of the artillery if some of the morning's drill hour (from 11 to 12 o'clock) were given to it in the spring and fall of the year.

That cadets leave the Academy conspicuously deficient in this branch is inevitable under the prevailing system. It is therefore to be hoped that this subject may commend itself to the serious consideration of those who direct the affairs of the institution.

Respectfully, your obedient servant,

J. D. C. HOSKINS,
*First Lieutenant Third Artillery,*
*Senior Assistant Instructor of Artillery Tactics.*

The COMMANDANT OF CADETS,
*U. S. Military Academy, West Point, N. Y.*

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## EXHIBIT D.

### CAPTAIN METCALF'S VIEWS AS TO ORDNANCE.

U. S. MILITARY ACADEMY,
OFFICE OF INSTRUCTOR OF ORDNANCE AND GUNNERY,
*West Point, N. Y., June* 4, 1889.

DEAR SIR: In reply to your inquiry regarding the needs of this department of instruction I have the honor to report as follows:

(1) As far as ordnance material is concerned, our equipment, although obsolete, is the best that the country can now supply. The ordnance department is doing its best with the large appropriations granted by the Congress to supply the need of the nation, and I see no reason to doubt that the chief of ordnance will supply in the future, as he has in the past, all that the Academy requires in the way of guns, carriages, and ammunition. In time I hope to replace our equipment by approximately that following, viz:

One 12-inch breech-loading rifle, steel.
Two 8-inch breech-loading rifles, steel.
One 12-inch breech loading rifled mortar.
Four 5-inch breech-loading rifles, siege, steel.
One 7-inch breech-loading rifled howitzer, steel.
Six 3.2-inch breech-loading rifles, steel, field, and one 3.2-inch breech-loading mortar, steel, field, or larger caliber if adopted, as now seems likely.

Meanwhile I should like to procure one each of the Maxim machine-guns and of the Hotchkiss rapid-fire guns. The latter arm is the type of that now largely used abroad. These are not made by the United States, nor are they to be constructed by ordnance department, so that it would be necessary to purchase them. For this I

estimate that $5,000 would suffice, allowing for carriages and a supply of ammunition for target practice.

(2) This is the only department of instruction in which the senior assistant is not allowed extra pay. Reference to the inclosed copy of the appropriation for the current fiscal year shows that even the assistant instructors of tactics receive captain's pay.

Whatever its present condition, this department is capable of becoming as important as any here, not only in preparing the cadets for their strictly professional duties, but in affording them an opportunity of becoming acquainted with the principles of mechanical construction.

The tendency of modern education in the development of manual training schools, "slojd," etc., shows the importance of training not only the powers of reasoning but those of observation.

To prepare such a course, even more than to teach it, requires the services of the best assistants that can be procured.

The detail here of a lieutenant is often a hardship, on account of the cost of living. By placing this department on a footing with the others an inducement would exist for the best officers to seek for service here instead of shrinking from it.

(3) Carrying out this idea of reading the mind through the senses, I have thrown open the ordnance museum for the free use of the cadets. Hitherto I have had in charge a soldier who happened to be competent to explain the arms to the cadets. To-day, his enlistment having expired, he declines to re-enlist, being able to earn good wages outside. I shall be compelled to detail a man simply as a watchman, as I have no one competent to take the former janitor's place. Should your Board think it proper to recommend the annual appropriation of $900 for the pay of a competent civilian as armorer and machinist, I would be able not only to continue the manner of instruction to which I have referred but also greatly expand it, by setting up and operating for the cadets a few of the metal and wood working machines which have done so much to make our country prosperous and great.

Meanwhile men have graduated who did not know the difference between a lathe and a lath.

As an earnest of my good intentions I inclose the advance sheets of a work on ordnance which I have just prepared for the cadets, with a set of plates, all of which were drawn and printed by one of my soldiers and myself.

As I have hitherto been obliged to hear daily recitations as well as to conduct the business of both the administrative and educational branches of my department, these are not quite as complete as I hope to make them in the future, when I shall have two assistants instead of but one.

Very respectfully, your obedient servant,

HENRY METCALFE,
*Captain Ordnance, Instructor of Ordnance and Gunnery.*

Capt. CHAS. KING,
*Board of Visitors, Member of Committee on Ordnance, etc.*

P. S.—It may be proper to state in reference to the two guns for which $5,000 is estimated, that the former, the Maxim, is a gun of American invention made in England, for want of a market here, and capable of firing automatically at the rate of eleven shots a second. It uses musket ammunition. Once discharged by the trigger it continues as long as the ammunition chest is filled, so that the gunner can play it like a hose.

It has many great ballistic and tactical advantages, and promises to supplant entirely the famous Gatling gun. I consider it the most important invention in firearms within the last twenty years. This at the present rate of progress means a good deal.

The other gun, the Hotchkiss rapid-fire gun, is a cannon varying from 1 to 33 pounder caliber, which uses ammunition like that employed in small arms, but of enormous size. The largest cartridge shells are about 4 feet long. It can be fired by hand at the rate of from twenty-five to ten rounds per minute, the rapidity in this case depending mainly upon the use of the peculiar ammunition.

This gun, also an American invention, made, for the same reasons as the Maxim, in a foreign country, has almost revolutionized the construction of a large class of foreign fleets. It is eminently adapted to the transformation of a mercantile marine, and in the event of a foreign war would have an important part to play both on shore and afloat.

As another reason for the hire of the civilian armorer I would state that the greater complexity of modern cannon of the breech-loading type requires greater care and more frequent repairs than I fear that with my present force I could make.

Very respectfully, your obedient servant,

HENRY METCALFE,
*Captain Ordnance, Instructor of Ordnance and Gunnery.*

## EXHIBIT E.

### LIEUTENANT CRANE'S REPORT ON INFANTRY EQUIPMENT.

WEST POINT, N. Y., *June* 8, 1889.

SIR: In compliance with your instructions of yesterday I have the honor to submit the following report as to what constitutes the present equipment of the infantry of the corps of cadets, and as to what additional equipment may be considered necessary or desirable for efficient instruction.

The cadet privates and corporals, as they stand in ranks, are armed with the Springfield rifle, caliber 45, cadet model, and are equipped with white shoulder-belts, white waist-belts, polished belt-plates, bayonet-scabbards, and McKeever cartridge-boxes. In addition to these articles the sergeants carry another shoulder-belt and straight swords, and the first sergeants, besides all these things, have a sash each.

The cadet captains and lieutenants are equipped with shoulder-belts, belt-plates, sashes, and straight swords.

The third class while engaged in small-arms target practice use the rifles, targets, cartridges, etc., which are provided for the purpose by the post ordnance officer of this post.

The rifles, bayonet-scabbards, cartridge-boxes, belt-plates, and swords are issued to the cadets and are accounted for by the tactical officers commanding cadet companies.

The belts and sashes are bought by the cadets from the cadet commissary.

I would like to add a word or two with reference to the sashes worn by the cadet officers of the first class, and, I believe, by the first sergeants and non-commissioned staff. These sashes are sold to the cadets by the cadet commissary at a cost of about $25.

I do not believe that the cadets should be put to the expense of getting these sashes, but that, like the plumes which formerly were bought by them, the sashes should now be issued to the cadets who are required to wear them.

I am, sir, very respectfully, your obedient servant,

C. J. CRANE,
*First Lieutenant Twenty-fourth Infantry,*
*Senior Assistant Instructor Infantry Tactics.*

The COMMANDANT OF CADETS.

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## EXHIBIT F.

### ADJUTANT BROWN, RESPECTING THE BAND.

HEADQUARTERS U. S. MILITARY ACADEMY,
*West Point, N. Y., June* 5, 1889.

In reply to your courteous invitation, sent through the Superintendent of the Academy, for suggestions looking to the improvement of matters particularly under the jurisdiction of the adjutant of the Academy, I have the honor to invite attention to the necessity of an increase in the authorized strength of the Military Academy band, if it is intended that this, the only military band in the Army recognized by law, should be one worthy of the National Military Academy.

It is not asked that such an increase in numbers and pay be requested that this band shall rival that of Gilmore, Cappa, or other large and well-paid bands that might be named; but it is believed that it is most desirable from a military and from every other point of view that the band here should be in every respect a first-class military band.

That the band is even as efficient and strong in numbers as it is, is largely due to the fact that some half dozen of the members of the detachment of field musicians have been taught to play on band instruments and perform double duty.

For the instruction thus received these music boys perform all the duties of bandsmen in addition to their regular routine duties as field musicians and orderlies for the commandant of cadets and adjutant of the Academy. For this extra service—worth to the Government in each case the pay and allowances of a bandsman—they receive $1 per month each from the special contingent fund.

On the occasion of the recent visit of the battalion of cadets to New York City, to participate in the celebration of the centennial of the inauguration of Washington as first President of the United States, the efforts to make a creditable showing for the band and detachment of field musicians were carried to a degree certainly not contemplated by law or regulations.

To increase the band, some half dozen field musicians who were competent to perform on band instruments were transferred to the band to swell its numbers, but this so depleted the field music that I was obliged to recruit this organization from com-

petent drummers and fifers from the engineer company, the cavalry detachment, the artillery detachment, and even a civilian (an ex-member of the drum corps), all of whom, dressed in borrowed uniforms and voluntarily performing this extra duty, assisted in saving the reputation of the band; but I submit that we should not be compelled to resort to such measures to keep up the reputation which the band in 1876 had, when, with forty good musicians, it was able at the Centennial to compete with the best in the country.

Attention is respectfully invited to the fact that although the Board of Visitors in 1876 recommended a reduction in the strength of the band, the very next board strongly recommended its restoration to its former number of forty members.

In view of the above, I have prepared estimates of cost of a band composed as follows: One drum major at $34 per month; ten musicians, first class, at $34 per month; thirty musicians, second class, at $24 per month. The total cost to the Government per year will be, in round numbers, $22,000, of which $13,872 will come from Military Academy appropriations and the remainder from appropriations for the support of the Army.

I have quarters sufficient for the additional sixteen men.

The cost of the present band is $10,600 per annum.

The additional instruments needed in case the above increase is made will cost, approximately, $600.

A suitable practice room for the band has long been needed. Plans and estimates for such a building have been prepared; the estimate being $3,000.

Hoping that the above may receive the favorable consideration of the Board of Visitors,

I am, sir, very respectfully, your obedient servant,

W. C. BROWN,
*First Lieutenant, First Cavalry, Adjutant U. S. Military Academy, Commanding Band.*

The BOARD OF VISITORS, U. S. MILITARY ACADEMY.

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## EXHIBIT H.

### ADJUTANT BROWN'S VIEWS CONCERNING THE TELEPHONE SYSTEM.

HEADQUARTERS U. S. MILITARY ACADEMY,
*West Point, N. Y., June* 6, 1889.

SIR: In reply to your request of yesterday I have the honor to submit herewith my views in regard to the necessity of establishing at this post a telephone system with central office. The necessity of this, which is a growing one, I have observed during my entire tour of duty at the Academy.

There are now at the various offices and officers' quarters about twenty Bell telephones rented for ninety-nine years from Government funds, but these are so distributed that not more than five are connected upon any one line. If the necessary switch-board and enunciator be purchased the central office might be established somewhere in the building known as the cadet guard-house, where two orderlies are habitually on duty night and day, and who it is believed could be readily instructed in the manipulation of the switch-board. In a recent conversation with the commandant of cadets he expressed himself as willing to have the central station so located.

In carrying on the work in the adjutant's office it is frequently necessary to communicate personally with an officer with whom business is to be transacted, and this could in most cases be done by the use of the telephone without leaving the office.

Attention is respectfully invited to the following extract from the Report of the Board of Visitors for 1887:

"*Necessity for a telephone system.*—The reservation on which the Military Academy is located embraces 2,200 acres. For the most part this reservation consists of wild, rugged land, covered with forest trees and pierced by large mountains. The plain, on which are located the academic buildings, barracks, etc., stretches along the Hudson River for a distance of about 2 miles. The academic and other buildings are located on this plain, and are necessarily widely separated. The academic and headquarters buildings are one-half mile from the southern boundary of and entrance to the reservation. At the headquarters building are located the business offices of the Superintendent and military staff. Headquarters is the focal point of all business and communication. The various divisions and departments of the Military Academy and military post of West Point are located at various distances from headquarters, many being over a mile, and a few—notably the observatory—being located at inaccessible points, to reach which one must climb steep mountain roads. The method of communication between these distant points is the same as was used eighty years ago, and, strange as it may seem to persons acquainted with the great advantages afforded by the use of the telegraph and telephone, there is considerable opposition to

abandoning the stiff, formal, ceremonious, and painfully slow method of communication established at the beginning of the century. This method consists in the use of the "orderly." The orderly is an enlisted man, who is daily detailed as messenger to the several officers requiring the services of such an agent. The orderly appears in full dress, with side-arms, and is always picturesque, and particularly so when he is statuesque, standing at "attention," receiving orders or delivering messages. The continuance of this orderly system of communication at West Point is very "military," but in these days of steam and electricity is very ridiculous. The employment of messengers as a means of communication between officers in the same or contiguous buildings is necessary and economical, but to employ them to carry communications a mile or more is unwise, an unnecessary expenditure of valuable time, an inexcusable tax on human muscle, and a terrible trial of human patience and temper.

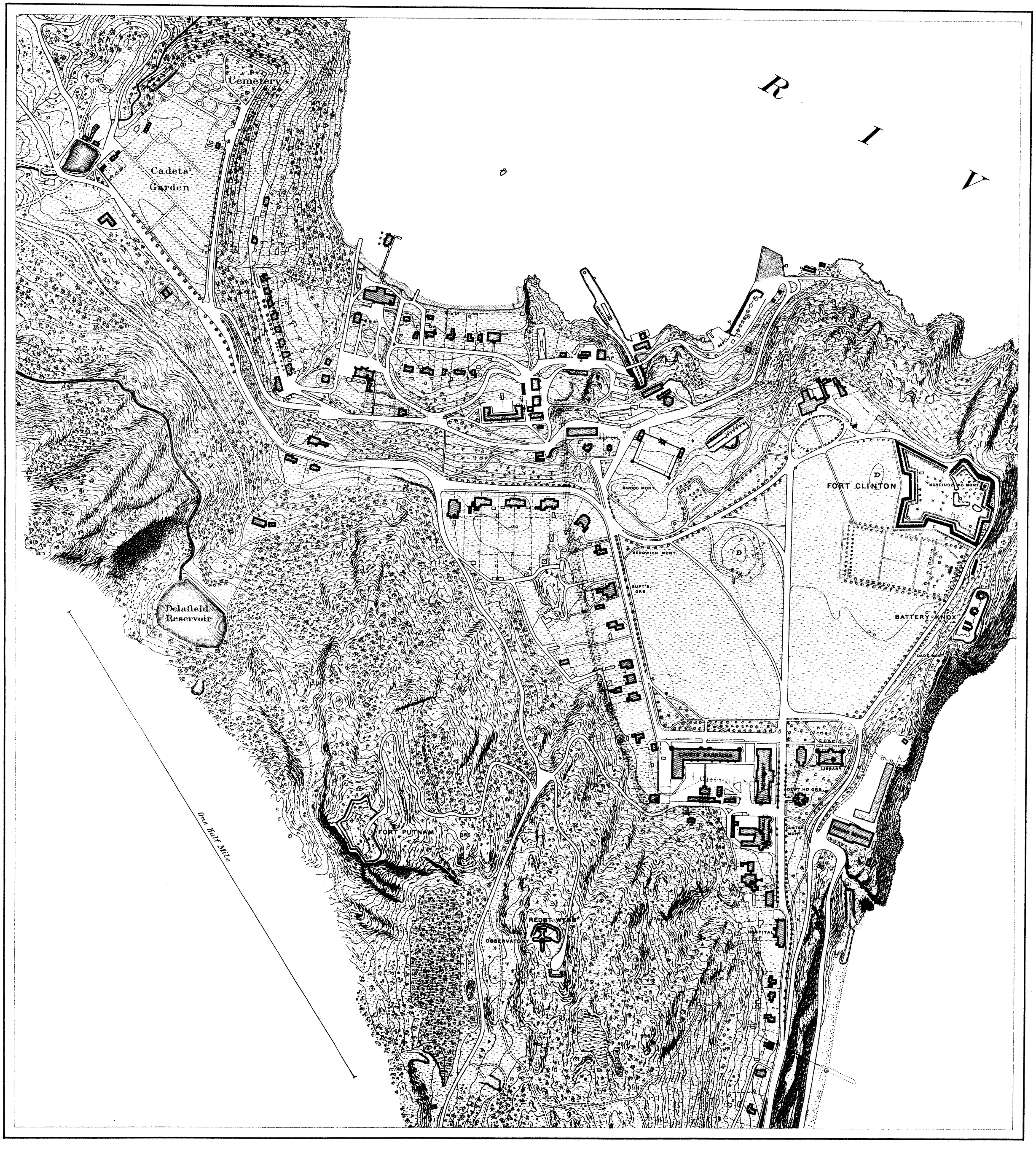
"This antique system to be condemned needs but to be seen in practical operation at West Point. Here is an illustration of its working: Cadet Doe having obtained permission from the officer in charge to visit headquarters, that he may inquire about his "wash," which was returned from the laundry minus four pairs of white gloves, appears before the quartermaster and commissary of cadets and presents his inquiry. That officer summons an orderly and thus addresses him: "Orderly, present my compliments to Mr. Mangler, at the cadet laundry, and say that I desire him to look around for four pairs of white gloves that were not returned with the wash of Cadet Doe." The cadet laundry is located more than a mile from headquarters. The orderly walks two miles to deliver the message.

"The professor of natural and experimental philosophy desires to communicate with the officer in charge of the observatory, which is located at an altitude of at least 1,000 feet above the plain, and can only be reached by climbing a mile of mountain road. The orderly is summoned. 'Give my compliments to Lieutenant Lookout, and say I desire him to have the transit circle polished up.' The orderly travels 2 miles in going and returning, and consumes an hour of time to do what the telephone would accomplish in a few minutes and without any physical effort.

"Instances might be multiplied to show the absurdity of continuing this 'orderly' system. The Board assumes that no argument will be needed by Congress to demonstrate the advantages that would attend the introduction of the telephone at West Point. The telephone is needed not only to facilitate communication between the several academic and military divisions, but as a security to the public property and as a convenience for the general public. The outlying guard-houses, the hotel, railroad station, cadet laundry, cadet hospital, cadet kitchen, band barracks, observatory, and other buildings distant from the official center of the post, should be connected by an exchange system established at the cadet guard-house and communicating with the headquarters building and the quarters of the Superintendent, commandant of cadets, surgeon, quartermaster and commissary of cadets, adjutant, and such others as might be deemed necessary by the Superintendent. The cost of a telephone system would be comparatively trifling. The original expenditure would be not more than $2,500, and the cost of maintaining it would be simply the royalty or rent required for the use of instruments. The line could be kept in repair by the enlisted men of the post, and the exchange or central office could be attended by enlisted men also. Should the telephone or electric light be introduced the Board recommend that all wires be laid under the ground."

If this system be introduced the following stations should be included:

1. Central office, with switch-board, etc.
2. Adjutant's office.*
3. Adjutant's quarters.
4. Band barracks.*
5. Commandant's office.*
6. Quartermaster's office.*
7. Quartermaster's shops.*
8. Gas works.
9. Treasurer's office.*
10. Cadet store.*
11. Cadet laundry.*
12. Cadet mess hall.*
13. Post commissary.
14. Academic building.
15. Superintendent's quarters.
16. Library.
17. Hotel.
18. Western Union telegraph office.
19. Cadet camp.
20. Livery stable.
21. South dock and railroad station.
22. Cadet hospital.
23. Main guard-house.
24. Engineer barracks.*
25. Officers' club.
26. Quartermaster's quarters.*
27. Cavalry barracks.*
28. Cavalry stables.*
29. Chemical academy.*
30. Quarters of professor of chemistry.*
31. Quarters of assistant professor of chemistry.*
32. Quarters of commanding officer Company "E," Battalion of Engineers.*
33. Observatory.
34. Philosophical department.
35. Artillery barracks.
36. Master mechanic's quarters.
37. Commandant's quarters.
38. Quarters of commanding officer department of ordnance.*
39. Ordnance laboratory.*
40. Ordnance squad room.*


R I V
Cemetery
Cadets' Garden
Delafield Reservoir
One Half Mile
FORT PUTNAM
365
REDBT. WEBB
OBSERVATORY
HOSPITAL
CUSTER MONT.
DEPT. HD. QRS.
LIBRARY
DADE MONT.
BATTERY KNOX
FORT CLINTON
KOSCIUSZKO MONT.
SEDGWICK MONT.
SUPT'S. QRS.
SWOOD MONT.

At stations marked * suitable telephones are already in place and use for local purposes.

Attention is also respectfully invited to the inclosed report and estimate of First Lieut. George L. Anderson, Fourth Artillery, an accomplished electrician.

As the number of new stations in the above list is the same as that named in Lieutenant Anderson's estimate, it is thought that an appropriation of $2,000 will cover all expenses incident to the establishment of the system.

Very respectfully, your obedient servant,

W. C. BROWN,
*First Lieutenant, First Cavalry, Adjutant.*

Hon. JOHN W. DANIEL,
*Chairman Committee of Board of Visitors on Ordnance, etc., West Point, N. Y.*

HEADQUARTERS U. S. MILITARY ACADEMY,
OFFICE TREASURER, QUARTERMASTER AND COMMISSARY CADETS,
*West Point, N. Y., June* 6, 1889.

I concur most heartily in the views and recommendations contained in this paper.

W. F. SPURGIN,
*Captain Twenty-first Infantry, Treasurer United States Military Academy, Quartermaster, etc., of Cadets.*

QUARTERMASTER'S OFFICE,
*West Point, June* 6, 1889.

I concur as above. The improvement is one demanding immediate attention.

CHAS. W. WILLIAMS,
*Captain and Asst. Quartermaster, Quartermaster Military Academy.*

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## EXHIBIT G.

### LIEUTENANT ANDERSON'S PLAN FOR ENLARGED TELEPHONE SYSTEM.

WEST POINT, N. Y., *May* 4, 1888.

SIR: In obedience to verbal instructions received from the Superintendent of the U. S. Military Academy, I have the honor to transmit herewith an estimate of material and cost of a telephone system at this post, connecting those offices which now employ considerable messenger service. A system of this kind was recommended by the Board of Visitors in June, 1887, as being less expensive, more efficient, and rapid between offices as remote from each other as those at West Point. Since that date the construction of long-distance telephone lines from Albany to New York along the west side of the river has been undertaken, and these wires extend now as far as Rondout. When they are completed, persons having telephones may communicate directly with any important business house or other place in New York or Albany for a small charge.

Another consideration is that the entire cost of construction of the proposed installation will be about the same as the amount paid each year in towns in this country for the use of the same instruments. This is owing to the liberal offer made by the Bell Telephone Company, whose general manager wrote to the adjutant of the Academy, January 31, 1887, as follows:

"This company will furnish the Military Academy at West Point with telephones and transmitters of any of its standard patterns stamped, in addition to the regular property and patent stamps, 'For use at the U. S. Military Academy, West Point, only,' upon condition that such licensed telephones are only to be used at the Government post of West Point, at $25 for each transmitter and $25 for each receiving telephone, payable at the time of delivery as full rental for the life of the instruments or patents (if the instruments last so long), with the understanding that the instruments when worn out or unfit for further use shall be returned to this company."

The lease of an instrument during its life is practically all that can be desired. As soon as the Bell patents expire better instruments will no doubt be used. Better instruments exist now.

The following-named offices and places at the post are regarded as those which it would be desirable to connect:

1. Central office.
2. Adjutant's office.
3. Adjutant's quarters.
4. Band barracks.
5. Commandant's office.
6. Quartermaster's office.
7. Quartermaster sergeant and shops.
8. Gas works.
9. Cadet commissary.
10. Cadet commissary building.
11. Cadet laundry.
12. Cadet mess-hall.
13. Post commissary.
14. Academic building.
15. Superintendent's residence.
16. Library.
17. Hotel.
18. Western Union telegraph office.
19. Cadet camp.
20. Denton's.
21. South dock.
22. Hospital.
23. Rugertown.
24. Engineer barracks.
25. Officers' club.*

If officers who now have telephones of recent pattern shall place them in the system, the following places may be added without additional cost:

26. Observatory.
27. Professor Tillman's house.
28. Chemistry department.
29. Philosophy department.
30. Captain Price's house (at or near).
31. Lieutenant Reed's house (at or near).

Stations are placed at Rugertown and at or near Captain Price and Lieutenant Reed's quarters with the view of having the proposed plant supplement the present fire-alarm system.

The estimate is made for the equipment of a central station at the cadet guard-house, the life lease of receivers and transmitters, the purchase of magneto call boxes, poles, line and office wire, etc., and the employment of an efficient line-man from one of the telephone companies for putting in the wires.

For the central office there is directly over the office of the officer in charge an unoccupied room, which is sufficiently well lighted and commodious. From this room the wires may run to the rear of the building, thence on cross arms fixed to poles which extend in a single row behind the mess-hall, barracks, and officers' quarters to the quartermaster's shops below the hill, as shown in the accompanying map. They will thus be hidden from view and be free from interference. The polls and cross arms are large enough to carry all the wires, fire-alarm, private, and others, which may be required at the post in future, and it is arnestly recommended that all of the wires at the post shall be removed from the public buildings and as far as practicable be placed on the telephone poles so that there may be less mutual interference, less liability to fire from lightning or electric-light currents, greater facilities for testing and repairing, and a more presentable appearance.

The poles of cedar, or pine, 50 yards apart, 33 feet long (not less), tapering toward the top to 6 inches diameter or 5 inches by 5 inches cross-section, should have not less than 4½ feet in the ground; every eighth pole to have a lightning-rod of No. 6 iron galvanized wire; cross-arms to be of well-seasoned white pine, planed and painted with rubber paint and to be bolted by two bolts to the poles; the wires not to be nearer each other than 22 inches; the switch-board to be of the pattern now issued by the Western Electric Company, New York, in which the bearing of the plugs is maintained by springs, and the call-box to be the same as that sent out only by the Western Electric Company.

Indoors copper-covered wire is to be used exclusively, and out of doors No. 10 galvanized-iron wire bare. Whenever the line enters a building, the end of the iron wire is to pass around the insulator outside near the window or door and to double back on itself; the insulated wire inside will pass through a hard-rubber or porcelain tube fixed in the casing and be wrapped around the iron wire two or three inches and soldered. Every wire joint in the circuit is to be carefully twisted and soldered.

An outside ground connection, a cut-out, and a lightning-arrester are to be provided for each station.

After the wires are in place there will be required for the efficient service of the exchange a man whose sole business it will be to answer calls at the central office and to keep the circuits in order. He can be obtained for the wages that is paid any one of the artillery detachment. A clerk whose desk may be in the central office can relieve him during a part of each day.

In the estimate allowance is made for five complete sets of instruments, now on hand, each set consisting of one receiver, one transmitter, one back-board, box, and cell. One hundred and ten poles will be required, but only ninety are estimated for,

*A pencil note added to this estimate suggested also post surgeon and police sergeant. (Sec. Board of Visitors.)

as twenty poles now on hand may be used at extreme points where only one wire is required.

The estimate of cost amounts to $2,008.05 for the following articles, to wit:

| | |
|---|---|
| 20 receivers (life lease) at $25 | $500.00 |
| 20 transmitters (life lease) at $25 | 500.00 |
| 20 magneto call-boxes at $11.25 | 225.00 |
| 20 back-boards with boxes for cells at 75 cents | 15.00 |
| 30 cells Leclanché porous cup at $1 | 30.00 |
| 1 switch-board | 120.00 |
| 10 miles galvanized-iron wire No. 10 | 110.00 |
| 90 33-foot poles, 5 by 5 inches section at top, at $2.50 | 225.00 |
| 50 pounds No. 18 office wire, paraffined cotton and linen double covered, at 35 cents | 17.50 |
| 120 cross-arms (3½ by 4½ inches, four bracket, painted) | 36.00 |
| 40 cross-arms (3½ by 4½ inches, two bracket, painted | 10.00 |
| 30 feet one-fourth-inch tubing for window casings | 6.00 |
| 750 glass insulators | 30.00 |
| 750 brackets, oak | 15.00 |
| 4 kegs spikes | 20.00 |
| 20 ground-plates, copper, 15 by 15 inches | 30.00 |
| 500 feet No. 12 galvanized-iron wire for tie-wires | 2.50 |
| 30 pounds sal ammoniac at 20 cents | 6.00 |
| 3 lbs. metallic staples for office wire | 1.25 |
| 24 flexible cords for receivers | 5.00 |
| 500 feet No. 6 galvanized-iron wire for lightning-rods | 4.00 |
| 6 pounds staples for same | .60 |
| 320 bolts for cross-arms | 12.00 |
| 1 lineman's pliers and wire-cutters | 2.50 |
| 1 stubs best pliers | 1.00 |
| 1 6-inch vise | 2.00 |
| 1 screw-driver | .70 |
| 1 pocket-tool case for lineman | 6.00 |
| Thirty days' services lineman at $2.50 | 75.00 |
| Total estimate | 2,008.05 |

Very respectfully, your obedient servant,

GEO. L. ANDERSON,
*First Lieutenant, Fourth Artillery.*

The ADJUTANT, U. S. MILITARY ACADEMY,
*West Point, N. Y.*

It is unavoidable that this general report must contain many cross-divisions, however carefully the subcommittee work has been distributed.

Under the first topic, of "buildings and grounds," we have discussed the band practice-room, which is needed for the sake of the band, and in that behalf Lieutenant Brown, the adjutant, has spoken effectively. Our estimate of this want has already been expressed.

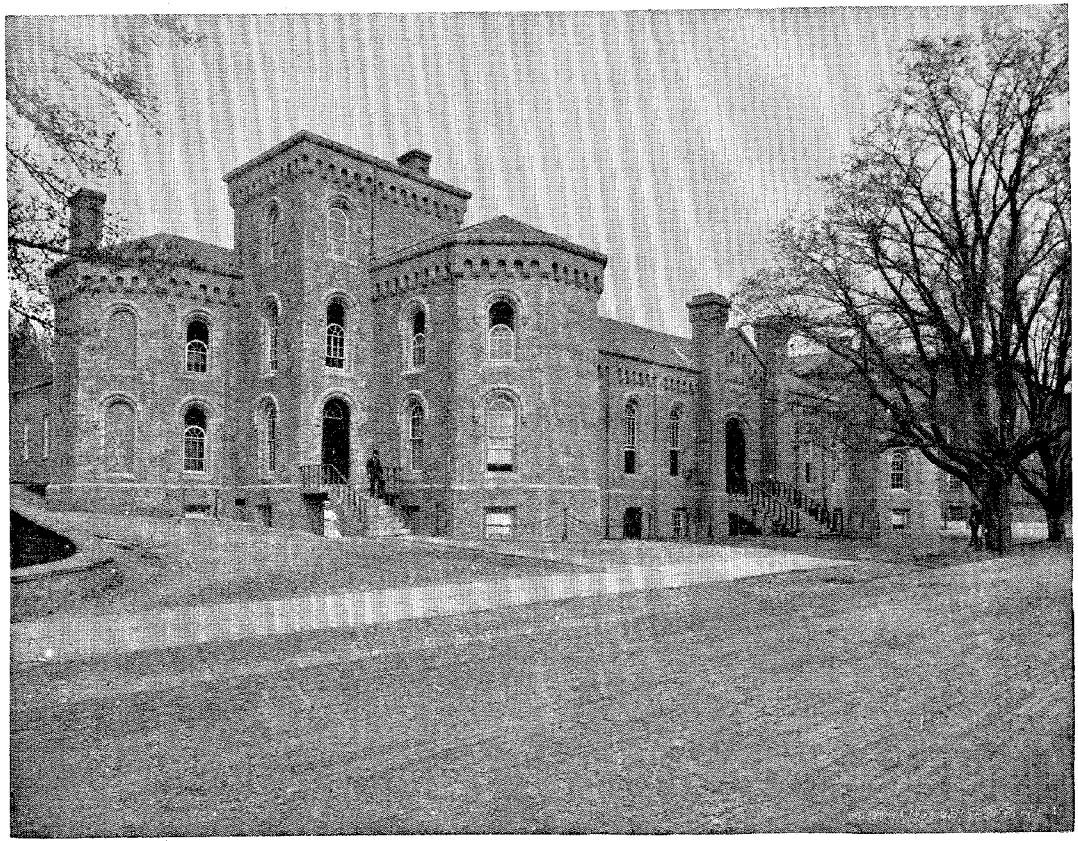
The second topic, respecting discipline and instruction, has suggested the need of better equipment in mortars, heavy siege guns, and general equipment for artillery, cavalry, and infantry. Captain Dorst contributes two comprehensive papers; Captain Metcalfe's statement will command attention; Lieutenant Hoskins' clear report tells its own story, and Lieutenant Crane's statement shows that the cadets are well equipped as to small-arms.

We repeat our conviction that West Point ought not to lack an equipment which will convince all who visit the Academy that if our national armories are not full of guns of most recent model, each arm is illustrated by the presence of specimens of the latest and the best. We note that Captain Metcalfe asks for the purchase abroad of some arms not made in our own armories. We approve the suggestion, since it will argue that, while we may not care to forge guns to-day which may be superseded to-morrow, we are alert as to the products

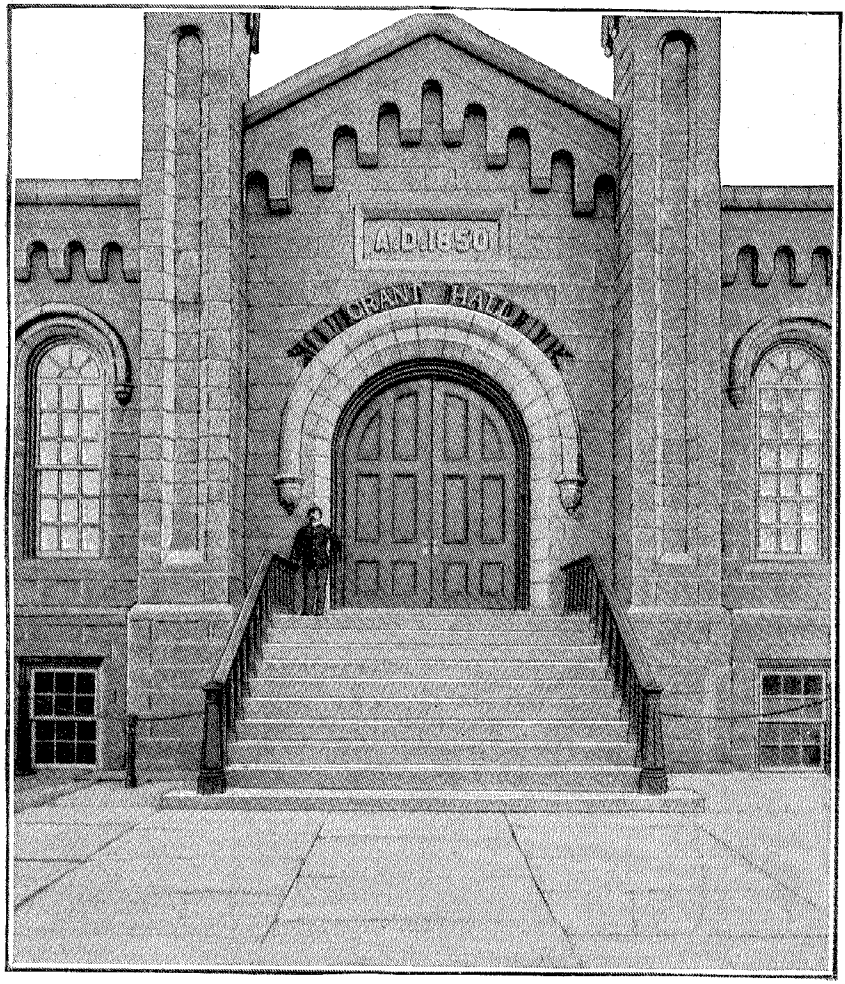
of other nations, and know just how to lay those nations under contribution in case of need.

The Academy museum is valuable, since it suggests the evolution of the newest out of the older arms and equipments. We are pleased to see this collection of antiques, and this tribute to the genius of former generations. Since, however, the Academy is for the instruction of living cadets, we should like to see the newest specimen of the modern soldier actually handling the newest specimen of the most modern arm, be that arm a siege gun, an improved mortar, a rifled cannon for mere temporary field fortifications, light horse artillery, a breech-loading rifle, a revolver, or indeed any weapon with which the cadet ought to be familiar. There ought not to be an obsolete arm at West Point outside the "*Museum*," and we prefer that that room should be distinctly marked so that it may not be mistaken for an armory. All Europe is military in spirit, and foreign visitors at West Point are frequent. The fact that they may travel across the continent without seeing a soldier should be an argument why West Point and Annapolis should serve as proof that we as a nation are not unarmed as to all possible warlike hints and possibilities, if the latter are forced upon us. The wrath of peaceable men when aroused in a just cause is terrible. It is not necessary that our coasts should bristle with cannon, and that our armories should be ablaze night and day. At the same time thorough scientific preparation, and constant readiness for defensive war are but the suggestions of sensible statesmanship. Our two Academies are representative of the two fields of our physical warlike power, and on that account we regard the foregoing papers and reports as entitled to the earliest and most exacting attention of Congress.

We ask fullest attention to the adjutant's views respecting the need of an extended telephone system at the Academy, and to Lieutenant Anderson's estimates for the same. The buildings at West Point are widely scattered, and mere protection from fire alone is sufficient argument for the improvement, since in that respect the cost for the same represents no more than a constructive insurance value, by means of the increased facilities to summon help to any point threatened by fire. The documents last named present the issue clearly, and we wonder that repeated requests could have been unanswered so long. The transaction of ordinary daily routine duty would seem to justify the outlay, particularly since some facilities already exist for whose reasonable extension we ask an appropriation. The saving of the time of the orderlies who now carry messages is enough to justify the expense. In addition to that, it should be stated that messages often request the personal voice and communications of busy officers who by the telephone can often dispatch their needed services in a moment or two, and then be at liberty to continue their work, without the long walks and interruptions required in the absence of the telephone. "Time is money," they say, and sometimes more than money, as business men in civil life can testify. Amid the crowded duties at West Point it is beyond controversy that the telephone system will be a valuable saving, not easily estimated. The Adjutant is the executive officer of the institution, and the amount of work and multiplicity of details to be attended to in his office, especially during the examinations, render it necessary that every facility be given for the rapid and accurate transaction of business. The Board of Visitors hopes that this improvement in facilities may be realized immediately. The map submitted by Lieutenant Anderson fully explains the location of the proposed new lines.



CADET MESS IN GRANT HALL—LOOKING NORTHWEST.




ENTRANCE TO GRANT HALL—FACING EAST.

## IV.—CADET SUPPLY DEPARTMENTS AND EXPENDITURES.

*On cadet supply departments, and expenditures.*—Prof. LeRoy D. Brown, chairman; Rev. Dr. Arthur Edwards, General Lew Wallace, Rev. Dr. B. W. Chidlaw, and Hon. John W. Daniel.

One of the masters of war has said that an army marches on its stomach. One other has said that "if there was but one man in the world, that man would want his dinner." The internal peace and prosperity of the Military Academy depend greatly upon the circumstances of food and clothing, and the supply of articles hinted at in the blanks which are included as parts of the subreport below. The inspections into the departments concerned were thorough, and opinions from all quarters were freely invited. The Board found no traces of discontent or any evidences of dissatisfaction. Clothing is well made and is of good materials. The food is of prime quality, and, as if cooked at home, is brought to tables whose very appearance tempts a man to eat. An English tourist in this country, who had visited all foreign national military schools, thought it of sufficient importance to say that he could "only wish that England had such an institution, and that English cadets had such a variety of wholesome food so well cooked." It will be noted that at one of its sessions the Board unanimously voted to request the President of the United States to revoke the order returning Capt. W. F. Spurgin to his regiment. The captain had already served at West Point as quartermaster and commissary of cadets eight years—a tour of duty twice as long as is usual for officers ordered to West Point in other departments. It is difficult to name a position in the Academy which affects more constantly and more vitally the comfort, health, and habitual cheerfulness of the cadet corps. When the order for removal came there were universal lament and fear for the future, and when the order was at last revoked there was corresponding universal satisfaction. It were not well that Boards of Visitors should interfere in the scope and customs of the Service, but in this instance the Board felt that it was serving the very Service itself to inform the President of the fact in this exceptional case. It would seem that the detail in question should be made permanent, or as long as the administration of that department continues to give such universal satisfaction. Captain Spurgin has greatly cheapened the cost of cadet subsistence, and, curiously enough, the excellence has kept pace with the cheapened cost. A traveler could well afford to contract with some universal provider that he might be insured as excellent a *menu* for the remainder of his natural life. The cadet is an active and normally hungry individual, whose appetite needs no provocation and whose commissary demands appear limitless. It certainly is well when hunger proves not to be the only sauce among such a vigorous corps of active young men. It is well that cadet approval of food is as ready after, as it was before, dinner. The department in question is conducted by an officer who loves his work, and that work touches and facilitates the work of every officer and cadet in the corps.

The report on this subject is brief and expressed in general terms,

but the Board hereby expresses its approval of the departments involved. It is a credit to all concerned that the hospital was, during our stay at West Point, substantially empty. The fact speaks volumes for overseeing surgeons, sanitary regulations, quarters, food, and cheerful attention to cadet duties.

The appended forms and description of other forms will serve to instruct the earnest men who, in the various States are conducting military schools, or military departments in schools not exclusively military. That matter will incidentally suggest how minute are the regulations to protect public property and secure responsible administration.

## THE FOURTH SUBCOMMITTEE'S REPORT.

WEST POINT MILITARY ACADEMY, *June* 12, 1889.

The committee on cadet supply departments and expenditures beg leave to report:

Your committee have made a thorough examination of all the departments of the Academy which are connected with cadet supplies and expenditures.

We find that the supplies for cadets are sufficient for all their actual needs; that they are of good quality and furnished at reasonable prices.

We find that good order and perfect system are the rule in all the departments which we have examined.

The building occupied by the cadet quartermaster's department is inadequate for the requirements of the Academy, but this is a matter which will receive the attention of the committee on buildings and grounds.

The accompanying papers are herewith submitted as a part of the report of the committee.

LE ROY D. BROWN,
*Chairman.*
ARTHUR EDWARDS.
LEW. WALLACE.
B. W. CHIDLAW.
JNO. W. DANIEL.

THE BOARD OF VISITORS U. S. MILITARY ACADEMY.

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## REQUEST FOR INFORMATION.

ROOMS OF THE BOARD OF VISITORS TO THE U. S. MILITARY ACADEMY,
*West Point, N. Y., June* 6, 1889.

SIR: In order to obtain some information desired by the committee on cadet supply departments and expenditures, I have the honor to request you to reply to the following questions:

1. What departments relating to cadet supplies are under your management?
2. What supplies, in general terms, are purchased for each cadet?
3. How are said supplies obtained?
4. What is the total income of each cadet?
5. How is said income expended?
6. Is said income sufficient for all the actual needs of the cadets?
7. Have you any suggestions to make relative to the cadet supply department?

In addition to the replies to the foregoing questions, the committee will be obliged if you will supply them with such blank forms as are now used in the cadet supply department at this time, and for a schedule of general supplies, with the present price of each article.

Yours, very respectfully,

LE ROY D. BROWN,
*Chairman of Committee on Cadet Supply Departments and Expenditures.*

Capt. WILLIAM F. SPURGIN,
*Treasurer and Quartermaster and Commissary of Cadets.*

CAPTAIN SPURGIN'S REPLY.

HEADQUARTERS U. S. MILITARY ACADEMY,
OFFICE TREASURER, QUARTERMASTER, AND COMMISSARY CADETS,
*West Point, N. Y., June 7*, 1889.

SIR: In compliance with the foregoing communication, I have the honor to submit the following, replying to your interrogatories seriatim:

1. I perform the duties of treasurer of the Military Academy, and have the management of all affairs appertaining to the cadet quartermaster's department, cadet subsistence department, and cadet laundry. The treasurer handles all moneys appertaining exclusively to cadets personally and to the above-named departments. The receipt and disbursement of such moneys requires twenty-eight separate and distinct accounts.

2. The cadet quartermaster's department supplies everything required by a cadet for his personal service (excepting his subsistence), and which is paid for out of his pay.

In the paper herewith appended, marked "A," is enumerated all articles and their cost to the cadet at this date supplied by the department.

The cadet subsistence department supplies the cadet his food, which is well cooked, wholesome, and in variety according to season.

3. All supplies are purchased in open market, wherever the best article at least cost may be obtained.

4. The pay of each cadet is $45 per month, or a total of $540 a year. In addition he receives medical attendance and medicines, quarters, fuel for heating same, and coal for gas, free; he also derives benefit from all general appropriations for the Academy.

5. The income of a cadet is expended for his subsistence, clothing, text-books, for services of all persons connected with the domestic branch of the Academy, such as the barber, shoe-blacks, those engaged in policing the barracks, for laundrying and in defraying all of his necessary expenses at the Academy.

Four dollars of his monthly pay is set aside each settlement, and constitutes what is known as his equipment fund, amounting during the four years to $192; which sum he receives on graduation, or in case his connection with the Academy is severed prior to graduation, the accrued amount, whatever it may be.

Cadets found deficient receive whatever may be due to date of discharge, and in addition a sum equivalent to one day's pay as a cadet for every 20 miles of the distance from West Point to their homes as determined by the official table of distances published by the Paymaster-General U. S. Army; he also receives through the disbursing officer of the Academy, from Congressional appropriation, the actual cost of his traveling expenses, including sleeping-berth, to his home.

6. I consider the income of a cadet, taken in connection with the sum which he deposits on entering the Academy—viz, $100, and which defrays the cost of his first outfit—sufficient, but no more than sufficient, for all of his actual necessities under economical management.

7. The supply departments are in excellent condition; the laundry, having been enlarged from funds appropriated by the last Congress, is ample and well equipped with all necessary machinery.

The building occupied by the cadet quartermaster's department is, however, inadequate for the requirements of the department; an estimate for either a new building or for an enlargement of the present one will be submitted at the proper time.

I have the honor to transmit herewith copies of some of the blank forms in use in each department, briefed to show to which department they appertain and their purposes.

I trust that the foregoing may furnish the information desired; should further information be desirable, I will take the greatest pleasure in furnishing it.

Very respectfully, your obedient servant,

WM. F. SPURGIN,
*Captain, Twenty-first Infantry, Treasurer U. S. Military Academy,*
*Quartermaster and Commissary of Cadets.*

Prof. LE ROY D. BROWN,
*Chairman of Committee on Cadet Supply Departments*
*and Expenditures, Board of Visitors, West Point, N. Y.*
(Through the Adjutant U. S. Military Academy.)

*Price-list of cadet quartermaster's department.*

| Quantity. | Articles. | Price. | Quantity. | Articles. | Price. |
|---|---|---|---|---|---|
| 1 | Astronomy | $2.15 | 1 | Mechanics, Michie | $3.15 |
| 1 | Art of War | .40 | 1 | Mineralogy and Petrography | 1.27 |
| 1 | Bourdon | 1.40 | 1 | Ordnance and Gunnery | 4.20 |
| 1 | Calculus | 1.53 | 1 | Ordnance pamphlets, chapters 1 and 2 | .29 |
| 1 | Chemistry, Bloxam | 3.94 | 1 | Ordnance pamphlets No. 3 | 1.38 |
| 1 | Dictionary, French | 3.50 | 1 | Ordnance pamphlets, Ballistics | 1.00 |
| 1 | Engineering Note | .21 | 1 | Odnance pamphlets No. 5 | .29 |
| 1 | English Lessons | 1.05 | 1 | Reader, Keetels | 1.20 |
| 1 | Field Fortifications | 1.50 | 1 | Reader, Knapp | 1.50 |
| 1 | Permanent Fortifications | 5.92 | 1 | Reader, Roemer's, 2 volumes | 2.40 |
| 1 | French plays, 2 vols | 2.60 | 1 | Record Book | .63 |
| 1 | Logarithmic Tables | 1.05 | 1 | Rhetoric, Hart's | 1.05 |
| 1 | Geology | 3.25 | 1 | Stone-cutting | 1.20 |
| 1 | Geometry, Analytical | 1.53 | 1 | Surveying | 1.53 |
| 1 | Geometry, description and plates | 2.18 | 1 | Tactics, Artillery | 1.40 |
| 1 | Grammar, Borel's | 1.30 | 1 | Tactics, Cavalry | 1.40 |
| 1 | Grammar, Keetels | 1.44 | 1 | Tactics, Infantry | 1.40 |
| 1 | Grammar, Whitney | .90 | 1 | Tactics, Tulball | 2.48 |
| 1 | Grammar, Knapp | 1.50 | 1 | Trigonometry | 1.57 |
| 1 | "How to Write Clearly" | .48 | 1 | Wave Motion | 4.20 |
| 1 | Law, Cooley | 2.63 | 1 | Physiology | .60 |
| 1 | Law, Woolsey | 1.85 | 1 | Atlas, Labberton | 1.70 |
| 1 | Law, Winthrop | 2.63 | 1 | History, Swinton | 1.44 |
| 1 | Legendre | 1.22 | 1 | Engineering, Civil | 3.15 |
| 1 | Least Squares | 1.28 | 1 | Topog., book, Reed | 3.94 |
| 1 | Magnetism and Electricity | 1.03 | 1 | Determinants, Peck | .53 |

STATIONERY.

| | | | | | |
|---|---|---|---|---|---|
| Packages | Blotters | $0.06 | 1 | Pens, steel | $0.0½ |
| Packages | Envelopes, Linne | .15 | 1 | Penholders | .03 |
| Packages | Envelopes, white | .06 | 1 | Pencils, lead (Faber's Siberian Graphite) | .08 |
| Bottles | Ink, indellible | .18 | 1 | Postal-cards | .01 |
| Bottles | Ink, writing | .04 | 1 | Slate-pencils | .0½ |
| Bottles | Mucilage | .07 | 1 | Slates, silicate (Silicate) | .27 |
| 1 | Pads | .09 | 1 | Stamps, 2 cents | .02 |
| Quire | Paper, letter | .13 | 1 | Stamps 1 cent | .01 |
| Quire | Paper, note, linen | .15 | 1 | Portfolio | .96 |
| Quire | Paper, note, plain | .07 | | | |

DRAWING MATERIALS.

| | | | | | |
|---|---|---|---|---|---|
| 1 | Brushes, No. 6 B | $0.22 | Sheets | Paper, tinted | $0.04 |
| 1 | Brushes, No. 16 B | .90 | 1 | Paint, boxes of | 3.60 |
| Sets | Instruments, (Swiss, hand made, best quality) | 20.94 | Bottles | Ink, India, liquid | .25 |
| 1 | Leads | .05 | Sticks | Ink, India, sticks | .53 |
| 1 | Needle-points | .15 | 1 | Pens, crow quill | .03 |
| Sheets | Paper, card-board | .07 | 1 | Pens, Swiss, large (Swiss) | 1.25 |
| Sheets | Paper, charcoal | .03 | 1 | Pens, Swiss, small (Swiss) | .98 |
| Sheets | Paper, demy, C. P. | .04 | 1 | Pens, Swiss, curve (Swiss) | 1.50 |
| Sheets | Paper, D. Elephant (best quality, selected) | .25 | 1 | Penknives | .50 |
| Sheets | Paper, envelope | .01 | 1 | Rubber, artists' | .03 |
| Sheets | Paper, royal, H. P. (best quality, selected) | .08 | 1 | Rubber, curves | .35 |
| | | | 1 | Rubber, triangles | .35 |
| | | | 1 | Thumb tacks | .03 |
| | | | 1 | Triangular rulers (boxwood) | 1.40 |

CLOTHING AND EQUIPAGE.

| | | | | | |
|---|---|---|---|---|---|
| 1 | Blouses, gray | $13.00 | Pairs | Drawers, jean | $0.55 |
| 1 | Belts, shoulder | .21 | Pairs | Drawers, wool | .85 |
| 1 | Belts, waist | .15 | Pairs | Gloves, uniform | .25 |
| 1 | Belts, sword | .30 | Pairs | Gloves, lisle | .44 |
| 1 | Breast plates | .33 | Pairs | Gloves, riding | 1.55 |
| 1 | Caps, forage | 3.02 | Pairs | Trousers, gray | 6.98 |
| 1 | Clothes-bags | .38 | Pairs | Trousers, white | 3.60 |
| 1 | Coats, dress | 16.66 | Pairs | Trousers, flannel | 4.78 |
| 1 | Coats, over | 23.25 | Pairs | Gloves, winter | 1.12 |
| 1 | Collars | .07 | Pairs | Garters | .35 |
| 1 | Collar-buttons (gold plated) | .10 | Pairs | Handkerchiefs | .25 |
| Pairs | Cuffs | .22 | 1 | Jackets, riding | 9.90 |
| 1 | Eye-shades | .10 | 1 | Jackets, shell | 6.00 |
| 1 | Hats, dress, complete | 2.90 | 1 | Jackets, white | 4.00 |
| 1 | Helmets, complete | 4.75 | 1 | Sashes, silk | 25.00 |

*Price list of cadet quartermaster's department*—Continued.

CLOTHING AND EQUIPAGE—Continued.

| Quantity. | Articles. | Price. | Quantity. | Articles. | Price. |
|---|---|---|---|---|---|
| 1 | Sashes, worsted | $2.10 | 1 | Socks, white | $0.25 |
| 1 | Undershirts, wool | 1.10 | Pairs | Socks, winter | .48 |
| 1 | Undershirts, gauze | .35 | Pairs | Socks, colored | .27 |
| 1 | Shirts, white | .65 | Pairs | Suspenders | .66 |
| 1 | Shirts, night | .65 | Pairs | Trousers, riding | 9.00 |
| Pairs | Shields, dress | .16 | Pairs | Buttons, cuffs (gold plated) | .65 |
| 1 | Shirts, white | .65 | 1 | Bathing suits | 1.20 |
| 1 | Shirts, night | .78 | | | |

TAILORS' MATERIALS.

| | | | | | |
|---|---|---|---|---|---|
| 1 | Buckles, black | $0.01 | Yards | Cloth, black | $3.00 |
| 1 | Buckles, brass | .01½ | Yards | Cloth, hair | .37 |
| Yards | Braid, mohair | .12 | P'ckages | Cord, black silk | .53 |
| 1 | Buttons, ball | .06 | Yards | Crape | 1.40 |
| 1 | Buttons, overcoat | .05 | Boxes | Crayons | .30 |
| 1 | Buttons, vest | .03 | Yards | Duck, white | .87 |
| Dozen | Buttons, pants | .02 | Yards | Farmers' satin, white | .80 |
| Dozen | Buttons, eyelets | .02 | Yards | Farmers' satin, black | 1.40 |
| Yards | Cr wn, duck | .25 | Yards | Flannel, gray | 1.70 |
| Yards | Canvas, French | .15 | Yards | Gold lace | .80 |
| Yards | Cassimere | 1.05 | Gross | Hooks and eyes, black | .35 |
| Pairs | Chevrons, adjutant (made from gold lace) | 4.30 | Gross | Hooks and eyes, swan | .25 |
| Pairs | Chevrons, quartermaster (made from gold lace) | 4.30 | Yards | Holland, white | .32 |
| Pairs | Chevrons, lieutenant's (made from gold lace) | 2.80 | Yards | Holland, brown | .32 |
| Pairs | Chevrons, quartermaster's sergeant (made from gold lace) | 3.30 | Yards | Muslin, tailors' | .14 |
| Pairs | Chevrons, sergeant-major (made from gold lace) | 3.30 | Yards | Muslin, P. case | .14 |
| Pairs | Chevrons, first sergeant (made from gold lace) | 3.00 | Papers | Needles | .05 |
| Pairs | Chevrons, color sergeant (made from gold lace) | 3.60 | Yards | Red padding | .75 |
| Pairs | Chevrons, sergeant (made from gold lace) | 2.15 | Yards | Pocketing | .11 |
| Pairs | Chevrons, corporal | 2.00 | Yards | Sateen | .25 |
| Yards | Cloth, gray | 3.25 | Yards | Silesia | .17 |
| Yards | Cloth, kersey | 4.00 | P'ckages | Stay-binding | .05 |
| | | | Pairs | Shears | .60 |
| | | | Pairs | Stars, gold | 1.45 |
| | | | Spools | Thread, cotton | .05 |
| | | | Spools | Thread, black silk | .60 |
| | | | Spools | Thread, linen | .09 |
| | | | Yards | Velvet (silk back) | 7.00 |
| | | | Sheets | Wadding | .03 |
| | | | Yards | Webbing | .07 |

FURNITURE.

| | | | | | |
|---|---|---|---|---|---|
| 1 | Argand burners | $0.75 | 1 | Mattresses 25 pounds (best South American curled hair) | $8.40 |
| Pairs | Blankets, woolen (California mission) | 7.35 | 1 | Pillows 3½ pounds (live geese feathers) | 2.50 |
| 1 | Brooms | .27 | 1 | Pillow cases | .22 |
| 1 | Brooms, whisk | .18 | 1 | Sheets | .57 |
| 1 | Buckets | .48 | 1 | Table covers | 1.25 |
| 1 | Chairs | 1.95 | 1 | Towels | .20 |
| 1 | Chairs, camp | 1.31 | 1 | Towels, bath (Turkish) | .85 |
| 1 | Comfortables | 1.80 | 1 | Tubs, foot | .65 |
| 1 | Dippers (cocoanut) | .20 | 1 | Tumblers | .03 |
| 1 | Gas shades | .25 | 1 | Wash-stands | 1.31 |
| 1 | Looking-glasses | .65 | 1 | Wash-bowls | .40 |

TOILET ARTICLES.

| | | | | | |
|---|---|---|---|---|---|
| Bottles | Bay rum | $0.78 | Cakes | Soap, shaving | $0.05 |
| 1 | Brushes, hair | 1.00 | 1 | Soap, dishes | .09 |
| 1 | Brushes, nail | .40 | 1 | Sponges | .37 |
| 1 | Brushes, shaving | .49 | Bottles | Tooth-powder | .15 |
| 1 | Brushes, tooth | .27 | Pairs | Slippers, opera | 1.55 |
| 1 | Brushes, shoe | .49 | Pairs | Slippers, gymnastic | 1.05 |
| Bottles | Cologne | .80 | Pairs | Shoes (French calf.) | 5.25 |
| 1 | Combs | .13 | Pairs | Pumps, patent leather | 1.40 |
| 1 | Mugs | .99 | Pairs | Overshoes, high | 1.90 |
| Bottles | Oil-cosmetic | .14 | Pairs | Overshoes, low | .90 |
| Packages | Paper, toilet | .11 | 1 | Shoe-horns | .10 |
| Papers | Pins | .05 | Bundle | Shoe-laces | .08 |
| 1 | Razors | 1.18 | Pounds | Candles | .10 |
| 1 | Razor-strops | .53 | 1 | Chimneys | .06 |
| Cakes | Soap, toilet | .12 | Boxes | Matches | .03 |

OFFICE TREASURER OF THE MILITARY ACADEMY,
QUARTERMASTER AND COMMISSARY OF CADETS,
*West Point, N. Y., October* 17, 1889.

SIR: In obedience to your indorsement on communication of the Adjutant-General of the Army dated October 16, requesting a descriptive statement of certain blanks used in cadet supply department, appended to the report of the committee on "cadet supply departments and expenditures" Board of Visitors, 1889, I have the honor to submit the following:

*Form No.* 1, a requisition and receipt, is a blank $3\frac{3}{4}$ by $4\frac{3}{4}$ inches, headed as follows:

"WEST POINT, N. Y., ——— —, 188–.

"Received from cadet Q. M. department the following articles."

This, when signed by an officer of the Academy, is his receipt to the storekeeper for articles received, and is a subvoucher to the monthly bills for purchases made by the officer at the cadet quartermaster's department store.

*Form No.* 2, bill-head, cadet quartermaster department, is a blank $7\frac{1}{2}$ by 5 inches, headed as follows:

"WEST POINT, N. Y., ——— —, 188–.

"———, ———

"To the cadet quartermaster's department, Dr."

This, when accomplished, exhibits the abstracted total of articles sold to officers, price at which charged, and total of charges. When the officer pays the bill, it is receipted by the treasurer, who credits the cadet quartermaster department fund with the amount so paid.

*Form No.* 3, bill-head, cadet subsistence department, is of the same size as No. 2, and of the same wording, substituting the word "subsistence" for "quartermaster." It bears the same relation to the cadet subsistence department as No. 2 does to the cadet quartermaster department.

*Form No.* 4, voucher, cadet quartermaster department, is a blank made on regular letter-sized paper, about 8 by 10 inches, headed:

"Cadet quartermaster's department, U. S. M. A.,
"To ——— ———, Dr.,"

and which sets forth the indebtedness of the department because of purchases of supplies from any one commercial firm or person, stating on its face the date of purchase, articles purchased, cost price, extensions, discounts, and total. It bears the certificate of the quartermaster and commissary of cadets as to its correctness, and also the following receipt:

"Received, West Point, N. Y., ———, —, 188–, of the treasurer of U. S. M. A., ——— dollars, in full of the above account, per check No. — on assistant treasurer U. S., N. Y.

"——— ———."

When accomplished this paper is a complete record of a commercial transaction, and becomes a voucher to the cash accounts of the treasurer.

*Form No.* 5, voucher, cadet subsistence department, is identical with No. 4 in every respect, having substituted the word "subsistence" for the word "quartermaster" wherever it appears.

*Form No.* 6, pay-roll, cadet quartermaster department, is a blank 21 inches long and $15\frac{3}{4}$ inches wide, headed as follows:

"We, the subscribers, do hereby acknowledge to have received from the treasurer of the United States Military Academy the amount set opposite our names, in full of the annexed account for making cadet clothing and services rendered in the cadet quartermaster's department from ——— 1 to ——— 31, 18—."

This blank exhibits the names of employés, how employed, period employed, stoppages, amount due, with the signatures of payees and remarks, all on the same line, the blank being spaced by perpendicular lines, to meet necessary requirements.

*Form No.* 7, issues to cadets, is a blank 30 inches long and 18 inches wide, ruled horizontally into sixty spaces for reception of names of cadets, and ruled perpendicularly into one hundred and five spaces, for reception at head of blank of the names of articles issued by the cadet quartermaster's department to the cadets of any class, showing, when accomplished, the total issues to each cadet of each class of all articles supplied him by the cadet quartermaster's department for the given period of four months; showing the total issues of each article during the same period, and thus becoming a voucher to the triannual return of cadet quartermaster's stores received, issued, and remaining on hand at West Point, N. Y., for the period ending on the ——— day of ———, 18—

*Form No.* 8, pay-roll in subsistence department. This blank is 20 inches long and 17 inches wide, headed as follows:

"Pay-roll of persons employed at the cadet subsistence department during the month of ———, 18—. We, the undersigned, acknowledge to have received from the treasurer of the U. S. M. A. the amount set opposite our names, respectively, in full payment for our services for the time specified."

This blank is ruled horizontally and perpendicularly, the spaces formed by the perpendicular lines being headed so as to exhibit the name, occupation, and service during the month of each employé, with rate of pay, additions, deductions, amount due, signatures of payees, witnesses, if necessary, and remarks. When accomplished, it is a voucher for the treasurer's cash papers.

*Form No.* 9, pay-roll in cadet laundry. This blank is almost identical with No. 8, and bears the same relation to the cadet laundry that Form No. 8 does to the department to which it appertains.

*Form No.* 10, bill of fare, cadets' mess, is a blank 14 inches long and 4½ inches wide. It exhibits the soup, relishes, meat, vegetables, and dessert for dinner of any particular day, the bill of fare for supper on same day, and for breakfast the following morning; only one copy is made out, and t. at one is for the guidance of the employés of the mess. Cadets are not furnished a copy of the bill of fare; they never know prior to coming to table what they will have to eat, and not then until the food is served.

*Form No.* 11, triannual return of cadet quartermaster's stores. This blank, in book form, consists of nine interior pages, each page 8¾ inches by 11⅝ inches, so plotted by horizontal black lines and by red lines, perpendicular to them, as to divide each full page into forty-four equal columns, each one-fourth inch wide, each column having printed at its head the name of some article of property, and being divided by the horizontal black lines, which are spaced one-fourth inch into fifteen equal 1-inch squares. The numbers entered in these squares record the reception or issuance (from whence received or to whom issued) of each article of property heading the column, and the return exhibits the text-books, stationery, drawing materials, clothing and equipage, tailors' materials, furniture and bedding, toilet articles, shoemakers' materials and findings, and miscellaneous articles received, issued, and remaining on hand for the period of four months.

Forms Nos. 1, 2, 3, 4, 5, and 10 are inexpensive, and copies of them can be furnished here. Forms Nos. 6, 7, 8, 9, and 11 are expensive blanks, the cost of which is defrayed by the funds of the department to which they appertain; they can be had of the publishers, whose names will be given on application.

Very respectfully, your obedient servant,

WM. F. SPURGIN,
*Captain, Twenty-first Infantry, Treasurer of the Military Academy,*
*Quartermaster and Commissary of Cadets.*

The ADJUTANT OF THE MILITARY ACADEMY,
*West Point, N. Y.*

## V.—FISCAL AFFAIRS OF THE ACADEMY.

*On fiscal affairs of the Academy.*—Hon. Cushman K. Davis, chairman; Prof. LeRoy D. Brown, Hon. S. S. Yoder, and Prof. C. M. Pinkerton.

The Board can not add anything to the clear statements made by this subcommittee respecting the fiscal affairs of the Academy. We direct particular attention to Captain Williams' exact setting forth of the cost of the Military Academy almost since its birth. Though the sums run into the early millions, it is a wonder how much has been accomplished with comparatively so little money. One of the products of this expenditure is a corps of officers whose total of graduates, from 1802 to and including 1889, is 3,329. The distribution of the total of 3,173 graduates from 1802 to 1886 as officers in the different arms of the service has been as follows:

| | | | |
|---|---|---|---|
| Corps of Engineers | 232 | Mounted riflemen | 35 |
| Topographical engineers | 32 | Mounted rangers | 5 |
| Ordnance | 72 | Infantry | 1,230 |
| Light artillery | 49 | Rifles | 5 |
| Artillery | 972 | Marines | 5 |
| Light dragoons | 1 | Not commissioned | 9 |
| Dragoons | 136 | | |
| Cavalry | 390 | | 3,173 |

We have not the particularized statement for the past three years. The value of this trained brain and brawn is beyond estimate. As a contemplative corps of scholars who should study alone the theory of war, they are worth ten times their cost; as students, writers, experimenters, and authors of books, or as mere observers of the tactics and strategy of foreign nations who should merely report the substance of their criticisms for the guidance of others, they are worth once more, ten times their cost. Added to these services are their personal presence and leadership on hundreds of battle fields where their dutiful service has been entirely beyond human estimate.

The matters involved in this topic were closely investigated and volumes are implied in favor of the officers concerned in these departments.

### THE FIFTH SUBCOMMITTEE'S REPORT.

U. S. MILITARY ACADEMY, *West Point, June* 10, 1889.

The BOARD OF VISITORS:

The fifth committee, appointed to examine into the fiscal affairs of the Military Academy and the administration thereof have performed that duty and submit the following report:

Your committee were informed by a communication addressed by the Superintendent to the chairman, dated June 5, 1889, that the fiscal affairs of the Academy are twofold

First. Those relating to the estimates, appropriations, and application thereof to the support and maintenance of the Military Academy.

This duty, excepting that coming under the head of pay of officers and enlisted men is performed under my directions, by Capt. Charles W. Williams, quartermaster of the Academy.

Second. Those relating to the clothing, equipment, and subsistence of the cadets, including purveying and supervision of the cadet mess, and all matters relating to the pay and accounts of cadets. These duties are now carried on by Capt. William

F. Spurgin, Twenty-first Infantry, the commissary and quartermaster of cadets and treasurer of the Academy.

Your committee examined the office and the books and papers of Captain Williams and received from him a full and clear verbal explanation of his method of administering the fiscal affairs of his department. At our request he afterwards transmitted to the chairman a written statement upon the same subject, accompanied by sundry other writings, all of which are hereto annexed and marked respectively A, B, C, and D.

It appears from the verbal and written statements thus made to your committee that the funds arising out of the several appropriations for the support of the Military Academy are supplied through the Secretary of War upon the requisitions of the superintendent of the Academy, made from time to time as the exigencies of the service demand.

The disbursements of these funds are reported quarterly to the Secretary of War, supported by vouchers which are entered upon abstracts and upon an account current and then forwarded to the Secretary, by whom, if found correct, they are transmitted to the Treasury Department for audit.

All disbursements are made upon the order of the superintendent, and, except as allowed by law in certain exceptional cases, only after public competition has been secured.

The competition of bidders is secured by public newspaper advertisement and posters and the contract is awarded to the lowest bidder, in compliance with the general method of procedure in the purchase of army supplies.

In very exceptional cases, when the exigencies of the service demand early delivery of a small quantity of supplies, competition is invited by notices publicly posted. When immediate delivery of supplies is necessary purchase is made from dealers of good standing and at regular market prices. Open-market purchases are very rare and only for small quantities.

The system of purchase by advertisement does not apply to the purchases of technical or scientific supplies required for instruction. These, under the act approved February 12, 1889, "shall be purchased by contract or otherwise, as the Secretary of War shall direct," and he has directed that all such purchases shall be made in the open market.

It appears that the $3,500 annually appropriated by Congress, and which constitutes the fund known as the Gas Fund, is not sufficient to pay for the cost of the production of the gas. The cadets are compelled to pay a part of the deficit thus caused, which they do at the rate of 30 cents each per month.

The cadets thus paid $997.30 for the fiscal year ending June 30, 1889. This is an unjust tax upon them, and the appropriation above referred to should, in the opinion of your committee, be adequately increased.

The special contingent fund derived from the rent of the hotel ($3,500) and other small structures, amounted in the total during the year to $3,937.50. This fund is authorized by law to be expended under the supervision of the superintendent of the Military Academy and to be accounted for annually, supported by proper vouchers, to the Secretary of War.

Your committee has no exceptions to take to the administration of Captain Williams. It is, in every way, excellent.

Your committee who visited the office of Captain Spurgin, examined his records and books of account and received from him a full verbal explanation of the way in which he conducts his exceedingly interesting and important department. At the request of the committee this officer subsequently addressed to the chairman a written communication upon these topics, which is annexed and marked E.

From this and the examination of the office made by your committee the following appears:

The pay of a cadet is $45 per month. Every two months a muster-roll of each company of cadets is made out and these rolls are forwarded by Captain Spurgin to the proper paymaster. They are then paid by placing to the credit of Captain Spurgin, as treasurer of the United States Military Academy, with the assistant treasurer of the United States at the city of New York, the entire sum of the rolls.

In Captain Spurgin's office twenty-eight separate accounts are kept. (See exhibit.) His office is the bank of the cadets. Their personal deposits consist of the sums deposited by them when they first report and their regular bi-monthly pay.

The cadet never handles any part of his pay excepting when he goes on furlough or severs his connection with the Academy. Captain Spurgin keeps an account with each cadet. Each cadet has an account-book and can see at any settlement just how his account stands and the items of debit and credit of which it is composed.

Out of the monthly pay ($45) of the cadet there is withheld the sum of $4 monthly. This is under no circumstances to be expended prior to his graduation. It makes what is termed the equipment fund, and in four years amounts to $192. It is expended by the cadet upon his graduation in buying his equipment as an officer.

Out of the $41 thus remaining as the available monthly pay of the cadet all of his expenses are paid through Captain Spurgin. The cadet thus pays for his subsistence, clothing, text-books, washing, policing barracks, gas, barber, shoe-black, baths, etc. His subsistence costs him upon an average about $16 per month. It is a close matter to live upon $41 per month, but it is done under this system and the cadet is taught that invaluable lesson, to live within his means.

Captain Spurgin's system of purveying and his management of the cadet mess are admirable in every way. The young men are well fed. This is the result of careful system and close personal attention to details by Captain Spurgin. He possesses great natural aptitude for his present position and it is the opinion of your committee that he should be retained in it.

Contained in Exhibit E is a statement of the amounts paid to the cadets as pay from January 1, 1818, to May 1, 1889, $7,213,230.77.

Exhibit F, hereto annexed, presents a summary of Congressional appropriations for current and ordinary expenses, miscellaneous and incidental expenses, buildings, grounds and public works, for the support of the Academy from 1837 to 1890, inclusive, and statement of amount covered into the Treasury since 1862, the same being $4,537,343.58 less $91,819.12 covered into the Treasury.

C. K. DAVIS,
*Chairman.*

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EXHIBIT A.

HEADQUARTERS U. S. MILITARY ACADEMY, QUARTERMASTER'S OFFICE.
*West Point, N. Y., June* 10, 1889.

SIR: In accordance with the Superintendent's instructions of the 5th instant, I have the honor to inclose herewith for the information of the Board of Visitors an abstract showing the amounts appropriated, disbursed, and remaining unexpended under the several heads of appropriations for the support of the Military Academy during the fiscal year 1888–'89.

The funds shown on abstract as received have been supplied by request to the Honorable Secretary of War upon requisitions of the Superintendent of the Military Academy, forwarded at such times as the necessities of the service demanded.

The amount reported as disbursed is supported by vouchers which are abstracted for each quarter of the year, entered on proper "account-current" and then forwarded to the Honorable Secretary of War, through proper military channels. Upon reaching the War Department these papers are examined and, if found correct, are approved and then transmitted to the Treasury Department for audit.

All of the foregoing papers are made in duplicate, one copy being retained in this office for reference and for examination by such officials as may be properly designated for the purpose.

All disbursements, whether for labor or material, are made upon the order of the Superintendent and, except as prescribed by law, only after competition has been secured.

The method of securing competition is as follows: When time permits and the quantity of supplies needed justifies the expenditure, an advertisement enumerating classes of stores desired and inviting proposals is inserted six times in two or more newspapers designated by the War Department; public notices of the same purport are posted in conspicuous places, and thirty days are allowed to elapse between date of advertisement and opening of bids. Every applicant is supplied with complete schedules of stores desired, and in addition schedules are sent to all firms known to be reliable and desirous of competing. For this purpose a book is kept in the office, in which the names of all such firms are carefully entered.

After bids are opened they are abstracted and the items are, as a rule, considered separately, and contract is in every case awarded to the lowest bidder. These abstracts together with bids, etc., are forwarded to the Treasury Department and are examined along with vouchers to which they relate.

When the exigencies of the service demand an early delivery of a small quantity of supplies, public posters only are used. When the immediate delivery of supplies is necessary, purchase is made from dealers of good standing and at regular market prices. However, such care has been taken by officers needing supplies to anticipate the necessities of the service that I can state that open-market purchases are very rare and only for small quantities.

In submitting this report it is proper to state that the above system is believed to be strictly in accordance with law and decisions of the United States Treasury officials.

The above method of purchasing applies only to such stores as are required to be purchased after advertisement inviting competition. The Military Academy appro-

priation bill for the present fiscal year contains a proviso allowing the Secretary of War to direct the purchase, by contract or otherwise, of all technical and scientific supplies required by departments of instruction at the Military Academy. The Honorable the Secretary of War subsequently directed that all such purchases should be made in open market, which regulation has since then governed.

The amount reported as unexpended is deposited to my official credit as disbursing officer, in the subtreasury of the United States in New York City. At the end of the fiscal year such funds as are not needed to cancel outstanding indebtedness will be transferred to the Treasurer of the United States.

In addition to funds referred to in Abstract A, herewith, I inclose an abstract of the fund known as the "gas fund." Congress annually appropriates $3,500 for gas-coal oil, candles, lanterns, matches, chimneys, and wicking for lighting the Academy, chapel, library, cadet barracks, mess-hall, shops, hospital, offices, stables, and riding-hall, sidewalks, camp, and wharves. The gas consumed in these places costs more than the amount appropriated. A tax, therefore, becomes necessary. Gas consumed at all places not enumerated in the act is sold at actual cost of manufacture with a small increase for contingencies, which includes a portion of the deficiency above-named, and, also, provides for contingent repairs, which experience has shown to be necessary from time to time. The remainder of the deficiency is charged to cadets. They pay for gas at the rate of 30 cents per month for the time they are actually present. This is about 80 per cent. cheaper than they have ever received gas for before.

Attention is invited to the amounts paid by the several classes of persons consuming gas.

I also inclose an abstract of the fund known as the "special contingent fund U. S. Military Academy," which is derived from the rent of certain public structures at this post. Congress authorizes its expenditure under the supervision of the Superintendent of the Academy, the same to be accounted for annually, accompanied by proper vouchers, to the Secretary of War.

Very respectfully, your obedient servant,

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster, U. S. Army, Disbursing Officer.*

Hon. CUSHMAN K. DAVIS,
*Chairman Subcommittee of Board of Visitors*
*On the Fiscal Affairs of the Academy, West Point, N. Y.*

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EXHIBIT B.

*Abstract of appropriations made for the support of the Military Academy for the fiscal year ending June 30, 1889, disbursed by Capt. Charles W. Williams, assistant quartermaster, U. S. Army, disbursing officer of the U. S. Military Academy.*

| | Amount received. | Expended to include June 7, 1889. | Unexpended on hand. |
|---|---|---|---|
| Current and ordinary expenses | $57,484.80 | $45,591.19 | $11,893.61 |
| Miscellaneous items and incidental expenses | 17,120.00 | 16,701.77 | 418.23 |
| Buildings and grounds | 16,970.20 | 10,289.18 | 6,681.02 |
| Total | 91,575.00 | 72,582.14 | 18,992.86 |

I certify that the above abstract is correct, and that the expenditures reported have all been made by the undersigned on vouchers approved by the Superintendent of the U. S. Military Academy.

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster, Disbursing Officer.*

WEST POINT, N. Y., *June* 10, 1889.

## EXHIBIT C.

*Abstract of receipts, expenditures, etc., pertaining to the U. S. Military Academy gas-fund during the fiscal year ending June 30, 1889, disbursed by Capt. Charles W. Williams, assistant quartermaster, U. S. Army, director of gas-works U. S. Military Academy.*

| | | |
|---|---|---|
| On hand July 1, 1888 | | $2,250.00 |
| Receipts: | | |
| From sale of coke | $314.75 | |
| From sale of gas to officers | 1,601.06 | |
| From sale of gas to civilians | 567.29 | |
| From sale of gas to buildings | 99.12 | |
| From sale of gas to cadets | 997.30 | |
| | | 3,579.52 |
| Total | | 5,830.36 |
| Expended, to include June 8, 1889 | | 2,725.10 |
| Balance | | 3,105.26 |
| Outstanding debts | | 435.65 |
| Amount on hand available | | 2,669.61 |

I certify that the above abstract is correct, and that the expenditures reported have all been made by the undersigned on vouchers approved by the superintendent of the U. S. Military Academy.

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster, U. S. Army,*
*Director of Gas-Works.*

WEST POINT, N. Y., *June* 10, 1889.

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## EXHIBIT D.

*Abstract of receipts, expenditures, etc., pertaining to the special contingent fund, U. S. Military Academy, disbursed by Capt. Charles W. Williams, assistant quartermaster, U. S. Army, treasurer of the above fund.*

| | | |
|---|---|---|
| On hand July 1, 1888 | | $828.22 |
| Receipts: | | |
| By rent of West Point Hotel, for year 1888–'89 | $3,500.00 | |
| By rent of post-office cottage for year 1888–'89 | 150.00 | |
| By rent of public stables for year 1888–'89 | 100.00 | |
| By rent of brick market for year 1888–'89 | 150.00 | |
| By rent of brick market for quarter ending April, 1888 | 37.50 | |
| | | 3,937.50 |
| Total | | 4,765.72 |
| Expended, to include June 10, 1889 | | 3,369.64 |
| Unexpended balance on hand | | 1,396.08 |

I certify that the above abstract is correct, and that the expenditures reported have all been made by the undersigned on vouchers approved by the superintendent of the U. S. Military Academy.

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster, U. S. Army,*
*Treasurer Special Contingent Fund.*

WEST POINT, N. Y., *June* 10, 1889.

## EXHIBIT E.

*Summary of Congressional appropriations on estimates made by the superintendent for current and ordinary expenses, miscellaneous items, and incidental expenses, buildings and grounds, and public works, for the support of the United States Military Academy from* 1837 *to* 1890, *inclusive, and statements of amounts covered into the Treasury of the United States from* 1862 *to* 1888, *inclusive.*

| Year. | Amounts appropriated. | Covered into Treasury. | Year. | Amounts appropriated. | Covered into Treasury. |
|---|---|---|---|---|---|
| 1837 | $71,466.94 | | 1864-'65 | $79,820.00 | $1,135.37 |
| 1838 | 74,491.39 | | 1865-'66 | 98,027.00 | |
| 1839 | 49,497.09 | | 1866-'67 | 141,900.00 | 1,342.58 |
| 1840 | 28,486.95 | | 1867-'68 | 208,867.00 | 15,456.95 |
| 1841 | 35,268.90 | | 1868-'69 | 87,805.00 | |
| 1842 | 27,436.00 | | 1869-'70 | 83,630.00 | 4,472.87 |
| 1843 to July 1 | 12,455.10 | | 1870-'71 | 102,850.00 | 4,649.91 |
| 1843-'44 | 56,241.20 | | 1871-'72 | 87,494.00 | 12,072.09 |
| 1844-'45 | 28,769.00 | | 1872-'73 | 103,163.82 | 3,943.85 |
| 1845-'46 | 22,000.00 | | 1873-'74 | 123,938.06 | 3,592.10 |
| 1846-'47 | 37,000.00 | | 1874-'75 | 10[illegible],835.00 | 2,656.98 |
| 1847-'48 | 20,000.00 | | 1875-'76 | 129,740.00 | 4,258.51 |
| 1848-'49 | 31,655.00 | | 1876-'77 | 63,465.00 | 5,177.48 |
| 1849-'50 | 36,960.00 | | 1877-'78 | 62,425.00 | 2,997.56 |
| 1850-'51 | 34,884.00 | | 1878-'79 | 85,726.00 | 3,340.20 |
| 1851-'52 | 30,635.00 | | 1879-'80 | 112,755.00 | 3,578.51 |
| 1852-'53 | 37,100.00 | | 1880-'81 | 96,640.00 | 3,705.70 |
| 1853-'54 | 54,780.00 | | 1881-'82 | 99,347.84 | 2,603.61 |
| 1854-'55 | 69,865.00 | | 1882-'83 | 147,724.54 | 119.47 |
| 1855-'56 | 50,370.00 | | 1883-'84 | 101,225.00 | |
| 1856-'57 | 64,880.00 | | 1884-'85 | 86,345.00 | 3,268.43 |
| 1857-'58 | 67,165.00 | | 1885-'86 | 78,757.14 | 5,017.03 |
| 1858-'59 | 66,068.00 | | 1886-'87 | 76,970.00 | 6,046.26 |
| 1859-'60 | 59,505.09 | | 1887-'88 | 94,845.00 | 1,306.96 |
| 1860-'61 | 62,135.00 | | 1888-'89 | 91,575.00 | |
| 1861-'62 | 61,500.00 | $188.79 | 1889-'90 | 686,311.61 | |
| 1862-'63 | 50,550.00 | | | | |
| 1863-'64 | 61,997.00 | 887.81 | Total | 4,537,343.58 | 91,819.12 |

I certify that the above is correct.

CHAS. W. WILLIAMS,
*Captain and Assistant Quartermaster, U. S. Army, Disbursing Officer.*

WEST POINT, N. Y., *June* 11, 1889.

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## EXHIBIT F.

HEADQUARTERS U. S. MILITARY ACADEMY,
OFFICE TREASURER, QUARTERMASTER, AND COMMISSARY CADETS,
*West Point, N. Y., June* 8, 1889.

SIR: I have the honor to submit the following relative to the fiscal affairs of the Academy in so far as they appertain exclusively to cadets, as requested by you verbally when your committee inspected the accounts of this office.

The pay of a cadet is $45 per month. At each regular muster, viz, February 28, April 30, June 30, August 31, October 31, and December 31, muster-rolls of each company of cadets are made out by the commanders of cadet companies the same as such rolls are made throughout the service. These rolls are forwarded by me to the chief paymaster, Department of the East, who either pays them or designates some one of his assistant paymasters to pay them. The entire sum of the rolls is placed to my credit, as treasurer U. S. Military Academy, with the assistant treasurer of the United States at New York City, to be drawn against by me in settling all indebtedness in connection with cadets personally and on account of the different departments under my charges; but one account is kept at the subtreasury.

Twenty-eight separate accounts are kept in this office, with, viz:

1. Assistant treasurer.
2. Balances paid.
3. Barber and shoe-black.
4. Cadet laundry.
5. Cadet quartermaster's department.
6. Cadet subsistence department.
7. Cadet hospital.
8. Cadet cash.
9. Confectioner.
10. Corps of cadets.
11. Damages, ordnance.
12. Dancing.
13. Dentist.
14. Deposits.
15. Dialectic society.
16. Equipment fund.
17. Expressage.
18. Gas account.
19. Hops and German.
20. Miscellaneous fund.
21. Miscellaneous items.
22. Oath.
23. Paymaster.
24. Periodicals.
25. Photographs.
26. Policing barracks, etc.
27. Trust funds.
28. Cash.

The treasurer's office is like a bank, the cadets being the depositors, the deposits being sums deposited by candidates when first reporting, the regular bi-monthly pay of the cadets, and moneys appertaining to the cadet quartermaster's department, cadet subsistence department, cadet laundry, and other accounts.

The disbursements by the treasurer are all on account of the cadets, either personally or as a body, and are attested by proper vouchers setting forth the transaction.

Each cadet has an account-book, which is accomplished in the treasurer's office, setting forth every charge made against him during each settlement, and which is in his possession constantly, excepting when turned in to be settled. He can at any time see the state of his account.

Accounts Nos. 1, 4, 5, 6, 10, 20, and 28 are, from their nature, continuing accounts; the remainder are usually balanced each statement. The accounts of the treasurer are inspected regularly after each settlement. The following statement exhibits the receipts and disbursements made by the treasurer U. S. Military Academy for the period May 10, 1888, to May 16, 1889, the date of last settlement:

*Statements of receipts and disbursements made by the Treasurer, U. S. Military Academy, from May 10, 1888, to May 16, 1889.*

1. *Assistant treasurer.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to debit | $34,301.90 |
| Deposited (through Paymaster) | 152,638.18 |
| | 186,940.08 |
| Amount credited (checks drawn) | 155,511.93 |
| 1889, May 16. | |
| Balance to debit | 31,428.15 |

2. *Balances paid.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to —— | |
| Amount received | $17,884.39 |
| Amount disbursed | 17,884.39 |

3. *Barber and shoeblack.*

| | |
|---|---|
| Balance to —— | |
| Amount received | $528.45 |
| Amount disbursed | 528.45 |

4. *Cadet laundry.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | $4,961.22 |
| Amount received | 8,810.70 |
| | 13,771.92 |
| Amount disbursed | 9,191.06 |
| 1889, May 16. | |
| Balance to credit | 4,580.86 |

5. *Cadet quartermaster's department.*

| | |
|---|---|
| 1889, May 10. | |
| Balance to credit | $10,210.34 |
| Amount received | 64,303.84 |
| | 74,514.18 |
| Amount disbursed | 68,897.43 |
| 1889, May 16. | |
| Balance to credit | 5,616.75 |

6. *Cadet subsistence department.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | $1,883.89 |
| Amount received | 56,976.33 |
| | 58,860.22 |
| Amount disbursed | 58,443.60 |
| 1889, May 16. | |
| Balance to credit | 416.62 |

7. *Cadet hospital.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to —— | |
| Amount received | $1,439.10 |
| Amount disbursed | 1,423.17 |
| 1889, May 16. | |
| Balance to credit | 15.93 |

8. *Cadet cash.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to debit | $120.00 |
| Amount received | 14,042.69 |
| | 13,922.69 |
| Amount disbursed | 13,922.69 |

9. *Confectioner.*

| | |
|---|---|
| Balance to credit, —— | |
| Amount received | $342.70 |
| Amount disbursed | 342.70 |

10. *Corps of cadets.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | $14,195.02 |
| Amount received | 175,139.34 |
| | 189,334.36 |
| Amount disbursed | 174,897.69 |
| 1889, May 16. | |
| Balance to credit | 14,436.67 |

*Statements of receipts and disbursements made by the Treasurer, U. S. Military Academy, etc.—Continued.*

11. *Damages ordnance.*

| | |
|---|---|
| 1888. | |
| Balance to —— | |
| Amount received | $17.73 |
| Amount disbursed | 17.73 |

12. *Dancing.*

| | |
|---|---|
| Balance to —— | |
| Amount received | $615.00 |
| Amount disbursed | 615.00 |

13. *Dentist.*

| | |
|---|---|
| Balance to credit, —— | |
| Amount received | $897.00 |
| Amount disbursed | 897.00 |

14. *Deposits.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | |
| Amount received | $17,851.31 |
| Amount disbursed | 17,638.31 |
| 1889, May 16. | |
| Balance to credit | 213.00 |

15. *Dialectic society.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | $103.74 |
| Amount received | |
| | 103.74 |
| Amount disbursed | 101.82 |
| 1889, May 16. | |
| Balance to credit | 1.92 |

16. *Equipment funds.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | $25,696.00 |
| Amount received | 11,946.00 |
| | 37,642.00 |
| Amount disbursed | 9,990.00 |
| 1889, May 16. | |
| Balance to credit | 27,652.00 |

17. *Expressage.*

| | |
|---|---|
| Balance to credit, —— | |
| Amount received | $26.45 |
| Amount disbursed | 26.45 |

18. *Gas fund.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to —— | |
| Amount received | $997.30 |
| Amount disbursed | 831.40 |
| 1889, May 16. | |
| Balance to credit | 165.90 |

19. *Hops and German.*

| | |
|---|---|
| 1889, May 16. | |
| Balance to credit, —— | |
| Amount received | $1,588.57 |
| Amount disbursed | 1,588.57 |

20. *Miscellaneous fund.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | $145.56 |
| Amount received | 9.07 |
| | 154.63 |
| Amount disbursed | 148.79 |
| 1889, May 16. | |
| Balance to credit | 5.84 |

21. *Miscellaneous items.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to —— | |
| Amount received | $368.84 |
| Amount disbursed | 368.84 |

22. *Oaths.*

| | |
|---|---|
| Balance to credit —— | |
| Amount received | $46.00 |
| Amount disbursed | 46.00 |

23. *Paymaster.*

| | |
|---|---|
| Balance to —— | |
| Amount charged to paymaster | $150,615,27 |
| Amount received from paymaster | 150,615.27 |

24. *Periodicals.*

| | |
|---|---|
| Balance to —— | |
| Amount received | $115.72 |
| Amount disbursed | 115.72 |

25. *Photographs.*

| | |
|---|---|
| Balance to —— | |
| Amount received | $218.50 |
| Amount disbursed | 218.50 |

26. *Policing barracks.*

| | |
|---|---|
| 1888, May 10. | |
| Balance to credit | $35.07 |
| Amount received | 5,095.78 |
| | 5,130.85 |
| Amount disbursed | 5,204.24 |
| 1889, May 16. | |
| Balance to debit | 73.39 |

27. *Trust funds.*

| | |
|---|---|
| 1888, May 10. | |
| Amount on hand | $20,000.00 |
| 1889, May 16. | |
| Amount on hand | 20,000.00 |

28. *Cash.*

| | |
|---|---|
| 1888, May 10. | |
| Cash on hand | $2,808.94 |
| 1889, May 16. | |
| Cash on hand | 1,603.95 |

*Recapitulation, May* 10, 1888.

| | |
|---|---|
| **Debit:** | |
| Assistant treasurer | $34,301.90 |
| Cadet cash | 120.00 |
| Trust funds | 20,000.00 |
| Cash | 2,808.94 |
| | 57,230.84 |
| **Credit:** | |
| Cadet laundry | 4,961.22 |
| Cadet quartermaster department | 10,210.34 |
| Cadet subsistence department | 1,883,89 |
| Corps of cadets | 14,195.02 |
| Dialectic society | 103.74 |
| Equipment fund | 25,696.00 |
| Miscellaneous fund | 145.56 |
| Policing barracks | 35.07 |
| | 57,230.84 |

*The following exhibits the state of the account when last inspected, May* 16, 1889.

| | |
|---|---|
| **Debit:** | |
| Assistant treasurer | $31,428.15 |
| Policing barracks, etc | 73.39 |
| Trust funds | 20,000.00 |
| Cash | 1,603.95 |
| | 53,105.49 |
| **Credit:** | |
| Cadet laundry | $4,580.86 |
| Cadet quartermaster | 5,616.75 |
| Cadet subsistence department | 416.62 |
| Cadet hospital | 15.93 |
| Corps of cadets | 14,436.67 |
| Deposits | 213.00 |
| Dialectic society | 1.92 |
| Equipment fund | 27,652.00 |
| Gas fund | 165.90 |
| Miscellaneous fund | 5.84 |
| | 53,105.49 |

The following is a statement of amounts paid to the Corps of Cadets as pay from the 1st of January, 1818, to 1st of May, 1889

| Fiscal year ending— | Amount. | Fiscal year ending— | Amount. | Fiscal year ending— | Amount. |
|---|---|---|---|---|---|
| 1818 | *$31, 819. 11 | 1843 | $81, 365. 73 | 1868 | $134, 705. 26 |
| 1819 | 72, 592. 59 | 1844 | 73, 805. 78 | 1869 | 133, 737. 33 |
| 1820 | 83, 028. 21 | 1845 | 73, 849. 30 | 1870 | 143, 916. 96 |
| 1821 | 78, 951. 11 | 1846 | 64, 975. 43 | 1871 | 129, 753. 20 |
| 1822 | 78, 185. 49 | 1847 | 65, 920. 15 | 1872 | 138, 046. 56 |
| 1823 | 89, 056. 18 | 1848 | 69, 047. 60 | 1873 | 136, 187. 87 |
| 1824 | 85, 374. 61 | 1849 | 66, 593. 30 | 1874 | 154, 652. 38 |
| 1825 | 85. 293. 99 | 1850 | 66, 355. 20 | 1875 | 156, 645. 71 |
| 1826 | 87, 394. 64 | 1851 | 69, 690. 61 | 1876 | 179, 918. 43 |
| 1827 | 81, 019. 31 | 1852 | 67, 239. 20 | 1877 | 157, 021. 32 |
| 1828 | 78, 158. 10 | 1853 | 71, 153. 60 | 1878 | 141, 867. 00 |
| 1829 | 79, 878. 30 | 1854 | 64, 096. 80 | 1879 | 154, 606. 50 |
| 1830 | 83, 017. 93 | 1855 | 66, 259. 20 | 1880 | 146, 512. 50 |
| 1831 | 83, 916. 45 | 1856 | 64, 911. 80 | 1881 | 128, 202. 00 |
| 1832 | 80, 220. 61 | 1857 | 64, 137. 52 | 1882 | 121, 255. 50 |
| 1833 | 80, 112. 77 | 1858 | 79, 364. 00 | 1883 | 135, 624. 00 |
| 1834 | 87, 268. 71 | 1859 | 86, 529. 00 | 1884 | 155, 833. 50 |
| 1835 | 85, 702. 47 | 1860 | 92, 269. 25 | 1885 | 159, 029. 16 |
| 1836 | 78, 751. 09 | 1861 | 85, 708. 00 | 1886 | 154, 768. 00 |
| 1837 | 78, 835. 86 | 1862 | 66, 201. 00 | 1887 | 154, 894. 07 |
| 1838 | 84, 122. 88 | 1863 | 74, 839. 00 | 1888 | 153, 064. 59 |
| 1839 | 84, 459. 14 | 1864 | 116, 893. 58 | 1889 | †126, 221. 37 |
| 1840 | 83, 624. 36 | 1865 | 127, 486. 94 | | |
| 1841 | 80, 205. 15 | 1866 | 117, 197. 86 | Total | 7, 213, 230. 77 |
| 1842 | 80, 235. 19 | 1867 | 148, 643. 46 | | |

* From January 1 to July 1. † From July 1, 1888, to May 1.

Very respectfully, your obedient servant,

W. F. SPURGIN,
*Captain Twenty-first U. S. Infantry, Treasurer U. S. Military Academy,*
*Quartermaster and Commissary of Cadets.*

Hon. CUSHMAN K. DAVIS,
*Chairman Committee on Fiscal Affairs of the Academy*
*Board of Visitors, West Point, N. Y.*

(Through Adjutant-General, U. S. Military Academy.)

## VI.—APPOINTMENTS, EXAMINATIONS, AND MISCELLANEOUS BUSINESS.

*On appointments, examinations, and miscellaneous business.*—Prof. C. M. Pinkerton, chairman; Dr. Nathan S. Lincoln, Rev. Dr. Arthur Edwards, and Hon. S. S. Yoder.

The Board of Visitors are agreed that the matters of appointment of cadet candidates and of examinations for entrance to the Academy are among the most vital with respect to the excellence and success of the nation's only military school. However perfect the standards of admission, and however excellent the consequent present material in the cadet ranks, a depressed or defective standard of admission can in four years change the entire aspect of scholarship in the Academy. The subcommittee on this subject has well said that the requirements for admission are not beyond those prescribed by a good high school. Just as we have said that a recitation in the Academy is not intended to enable the cadet to learn his lesson therein, but rather to clear up possible misconceptions respecting the lesson itself, so do we also think that as far as preparatory scholarship is concerned, the candidate should appear for his preliminary examinations with a clear, definite, and thorough understanding of the studies required. We doubt not that the sometimes alleged "severity" of those who examine the candidates consists chiefly in exacting just that definite knowledge of subjects required for entrance. It is no part of the examiner's duty to teach those subjects to the new-comers, but simply to be sure that those topics are already mastered so that deficient knowledge may and shall not retard the student in his future exacting academic studies. This point is entirely distinct from the question of a heightened standard for admission. The subcommittee has said wisely as follows, on several related topics:

### THE SIXTH SUBCOMMITTEE'S REPORT.

The BOARD OF VISITORS:

Your committee on entrance examination and appointment have the honor to submit the following:

First, on entrance examinations much has been said by the annual Boards of Visitors, but their recommendations have rarely received due consideration, and the suggestions offered by them have usually been buried in the published reports.

No doubt these boards have made some mistakes and at times have been at variance with each other, but as the boards are largely composed of distinguished men of almost all professions, including men of high position in our Government, graduates of the Academy, presidents and professors in our most prominent educational institutions, it should seem that their opinions, at least in regard to matters upon which for a great many years the successive boards have been in accord, are entitled to more weight than are the crude notions of many that criticise the Academy.

We have thought it well in this report to offer some reasons why we believe that none of the requirements for admission to the Academy are unreasonable and that present requirements should be not only maintained, but increased.

It has been argued that the son of the poor can not enter equally with the son of the rich man. This is a mistake, for the records show that the son of the poorest man can and does now enter the Academy on equal terms with the son of the richest and take his place in his class according to his personal merit without regard to his pecuniary circumstances. It is further the fact, shown by the records of the Academy,

that a very small proportion of the cadets are sons of men in independent circumstances.

We believe it will be found true that most of those who complain of the severity of the Academic Board are interested in some one that has failed to be admitted or to be graduated, or they have been influenced by one-sided statements, with no inquiry as to the grounds of the action of the Academic Board. It is true they may not always be conscious of their bias, but nevertheless it exists and affects their judgment. While this is no good ground for not giving due consideration and weight to facts and arguments, it is a sufficient reason for receiving with cautious scruti y mere dogmatic expressions of adverse opinion.

We do not pretend to say that the Academy is above criticism or improvement, but we do affirm that the system of the Academy is the result of many years of experience, all pointing in the same direction.

We wish to emphasize the fact that such experience ought not lightly to be set aside in favor of hastily conceived opinions on the part of those who take little or no pains to inform themselves of the reason of the course pursued at the Academy, who have had little or no experience in matters of education, and who often show by appeals to passion and prejudice that they are by no means willing to rest their case on its merits.

It may well be asked whether the Military Academy was established and is supported to educate young men irrespective of their merits. Of all young men who can by any influence obtain an appointment as cadet to be trained for the military service of the country only those having sufficient natural ability and due preparation before admission should be allowed to enter.

Is the institution intended for the benefit of a few individuals or for the benefit of the nation?

The answer to this question is obvious, and may well be answered in the language of the Board of Visitors of 1867:

"The United States Military Academy is not an institution for the benefit of the favored few; nor should it be an experimental arena of the youth of our country. It belongs to the nation, and is supported for the nation's welfare."

It is not, then, the personal interest of candidates or cadets that is mainly to be considered, but what is demanded, in order best to attain the object of the institution.

The present requirements for admission, as enforced by the Academic Board, do not amount to the reasonable requirements to enter an ordinary high school, and are still altogether too low to make sure of sufficient ability and preparation to enable the cadet, without more than ordinary energy, to meet what ought to be required in the course at the Academy.

We have noticed a very marked difference between the recitations of those in the lower and those in the higher divisions. This great difference can not be accounted for simply by supposed difference in native ability, but evidently arises from difference in preparation before entering the Academy. The highest efficiency of any system of education depends upon the amount of preparation and the equality of preparation with which the student enters upon it; and we feel satisfied that, owing to the low standard of admission of cadets at West Point, the inequality of preparation marks the downfall of those who fail to keep abreast of their classes.

The United States through her splendid system of common schools has made ample provision for elementary instruction. No institution whatever can in four years teach all that can be learned of a profession and in addition find time for a considerable amount of preparatory study when the standard of admission is low. The idea of crowding into a term of four years nearly the entire school education of a young man, appears ridiculous to any one who has had much experience in educational matters.

We are firmly of the opinion that the reason why so many fail at their first January examination is to be found in the limited examination on entrance. The fact is unquestioned that those cadets whose previous education has been generous and severe have very great advantages in the competition of the Academy. It is no more than just to the young men themselves, as it is to the country, that the cadets should not only enter upon the competition of academic life with the best possible preparation for their subsequent studies, but that they should prosecute their competitions upon as nearly equal terms as possible.

It is not to be forgotten that in this age of progress not to advance is to retrograde. Other institutions, military and civil, are emulously pressing forward in the onward march of improvement, and we believe that the rear is no place for West Point.

After a careful consideration by your committee upon this whole subject in its every detail it is their unanimous opinion that the requirements for admission as cadets at West Point shall include, in addition to those studies already established by law, the subjects of physical geography, elementary algebra, and plane geometry.

JUNE AND SEPTEMBER ADMISSIONS.

Upon this point of two periods of admission we submit the following, taken from the proceedings of the Academic Board, December, 1887.

[Extract from the proceedings of the Academic Board of December 5, 1887.]

"UNITED STATES MILITARY ACADEMY,
" *West Point, N. Y., December* 5, 1887.

"MONDAY, 11.15 o'clock a. m.

[Extract.]

* * * * * * *

"The following report of the committee appointed on the 30th of August last to consider and report upon the disadvantages of having candidates report at the Academy at any other time than June, was then read and upon motion adopted:

"'*The Secretary of the Academic Board:*

"'SIR: The committee appointed to consider and report upon the disadvantages of having candidates report at the Academy at any other time than June, has the honor to submit the following report:

"'Section 1317, Revised Statutes, provides that "cadets shall be appointed one year in advance of the time of their admission to the Academy, 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."

"'Section 1319, Revised Statutes, provides that "appointees shall be examined under regulations to be prescribed from time to time by the Secretary of War, before they shall be admitted to the Academy."

"'The time of the examination has accordingly been prescribed by the Secretary of War, by a regulation, as follows:

"'Paragraph 17, Regulations U. S. Military Academy: "Candidates selected by the War Department will be ordered to report in person to the Superintendent between the 1st and 20th of June annually, and shall be examined immediately after the annual examination of the cadets. No candidate shall be examined at any other time unless prevented from presenting himself by sickness or some other unavoidable cause, in which case he shall be examined during the last three days in August."

"'The large number of candidates annually ordered to report in August indicates that perhaps the proviso clause in paragraph 17, U. S. Military Academy Regulations, is liable to different interpretations.

"'Your committee does not understand that the proviso clause has for its object the possible filling in August of vacancies still existing after the June examination; or, in other words, that its object is to afford a double opportunity to fill a vacancy.

"'Your committee believes that the sole object of the clause is to afford an opportunity to a candidate appointed for June to be examined in August, provided "sickness or some other unavoidable cause" has, in fact, prevented his presenting himself in June.

"'That a different understanding, however, of the object of the clause exists at Washington is apparent from the fact that of the forty-four candidates examined last August thirty or more were appointed after June 1, and the greater part of them were appointed after the result of the June examination.

"'Several of the candidates examined in August had been examined and failed in June.

"'The principal disadvantages of having candidates report at other times than June, are:

"'(1) They lose the summer course of practical military instruction, which includes the most thorough setting-up drill that the class receives. This instruction is more essential to the making of the soldier than any other of a similar character given at the Academy.

"'(2) They are necessarily subjected to extra and severe drills at the same time that their academic duties, generally require the most diligent study on their part. This combination, together with the rigid discipline imposed upon them and to which they are, as a rule, entirely unaccustomed, is more than ordinary young men can stand, or should be subjected to.

"'(3) Owing to the combination of tasks so suddenly imposed upon them, a large proportion fail within the first year.

"'(4) The disadvantageous circumstances surrounding such candidates render it necessary for the authorities at the Academy to extend to them some consideration

not due to those who enter in June, thus forming a division within a class. Such consideration extends necessarily over a greater portion of the first two years.

"'(5) They generally receive but short notice before reporting, and in consequence a large number of them fail upon the elementary examination for admission.

"'The records show that during the past ten years, including 1887, 27 per cent. of those examined in June failed, while 38 per cent. of those reporting in August failed to qualify.

"'The appended extracts from previous reports bearing upon the subject are presented for the consideration of the Academic Board.

"'Your committee are therefore of opinion that the best interests of the Military Academy would require a strict construction of the terms of paragraph 17, Regulations U. S. Military Academy, as above recited.

"'E. W. BASS,
"'*Professor of Mathematics, U. S. Military Academy.*
"'S. E. TILLMAN,
"'*Professor, Chemistry, etc., U. S. Military Academy.*
"'W. WINTHROP,
"'*Lieutenant-Colonel U. S. Army, Professor of Law.*

"'WEST POINT, N. Y., *November* 18, 1887.'

"Official:

"W. C. BROWN,'
"*First Lieutenant, First Cavalry,*
"*Adjutant, U. S. Military Academy, Secretary Academic Board.*"

In view of the facts and arguments stated in these proceedings by this Academic Board, it is evident that the spirit of the law has been misunderstood and misconstrued, and therefore we recommend that there shall be but one time of entrance, and that in the month of June following graduation, and only those students who may have been detained by sickness or other unavoidable circumstance shall be examined and admitted in September.

THE NUMBER OF CADETS AND METHOD OF APPOINTMENT.

There is allowed by law the appointment of one cadet by each United States Representative, and ten additional by the President, making the legal number 344. There are in actual attendance only 265, and this is about the average attendance in past years. We believe that the blessing to the country at large received from the great value of this military and scientific education can not be overestimated. As the number who annually graduate is not sufficient to fill the military vacancies, therefore we recommend that the governor of each State in this nation shall be allowed to keep one cadet at this institution appointed from his State.

C. M. PINKERTON, *Chairman.*
N. S. LINCOLN.
ARTHUR EDWARDS.
S. S. YODER

The theory is that every Congressional district is always represented by a cadet and that the President shall constantly keep the ten cadets "at large," allowed by law, in that institution. The totals would be 345. It is said that the average number present is about 265. The pay of a cadet is $540 each year. If the legal maximum number were present it would require $186,300 for the mere pay of the corps. Reference to the statements made by Captain Williams, under a previous topic in this report, shows the large sums invested in the "plant," and the large additional sums to pay other expenses of the Academy. It is, therefore, but simple justice that the Academy should require certain rigid qualifications, all of which should be literally enforced. The cadet receives his education as a free gift from the Government, and no one citizen can claim, even if he offers to pay for them, the privileges of the Academy as his individual right. If he seeks this gratuitous benefit he and his friends are under obligations to meet the reasonable antecedent conditions.

## PHYSICAL CONDITIONS.

The cadet must have a sound body to contain whatever mind he has. He must be neither "lame, halt, nor blind." The three distinguished surgeons, Drs. Heger, Skinner, and Merrill, who were ordered to West Point this year, as a special board according to law, to examine cadet candidates, performed that duty thoroughly, as the writer of this general report of the Board of Visitors can testify. One hundred and thirty-nine were thus examined in June and fifty-six in September. Of these, fourteen were rejected in June and eleven in September. That is to say, of the total of one hundred and ninety-five thus examined a total of about twenty-five were rejected for physical reasons, or nearly 13 per cent.

The surgeons properly hold that a candidate is, or is not, qualified in body. There is no middle ground. The writer of this report will not soon forget the disappointment of some of the rejected candidates. One who passed last year physically but was then rejected as to scholarship, returned this year with great confidence. Being stripped for the ordeal as to his body, he was rejected at a glance, varicocele having developed during the past year. This young man might have been saved the expense of the trip to West Point, could an Army surgeon have made the most casual prior examination. His family physician might have done him the service, but an Army surgeon's verdict would have been conclusive. It is our opinion that a cadet candidate should have the privilege of applying for a preliminary examination at the recruiting station for the Army nearest to his home. These skilled Army surgeons know the precise tests applied to recruits for the Army, and are sure to know whether or not a young man can pass physically the precisely identical tests applied at West Point. The right of appeal to the Academy surgeons should remain. The recruiting surgeon should not be allowed to reject the candidate finally, but his presumptive and tentative verdict might be of value to the not rich family which can not well afford the expenses of a fruitless long journey to West Point. A candidate may conceivably be "conditioned" as to studies, but there can be no "condition" respecting organic disease of the heart, color-blindness, varicocele, or defective sight or hearing, or other disabling defects.

The district from which a candidate has been appointed has a right to demand that he must be perfectly sound in body, since there may be a score or two of others thoroughly sound ready to pass the most rigid tests. The same is true respecting the academic tests. A circular addressed to West Point candidates remarks as follows as to the double tests applied to all would-be cadets. It were well if all would consent to be guided thereby.

Every candidate is subjected to a rigid physical examination, and if there are found to exist in him any of the following causes for disqualification to such a degree as would immediately, or at no very distant period, impair his efficiency, he is rejected:

(1) Feeble constitution and muscular tenuity; 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, extenuation, 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), sarcocele, 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.

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. 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 decisions of the Academic and Medical Examining Boards at West Point.

We promise to candidates the most rigid physical examinations. They will be stripped and investigated from the crown of their heads to the soles of their feet. They will be tested inside and outside. Teeth, hair, scalp, eye, nose, mouth, lungs, heart, arms, fingers, legs, toes, joints, veins, and every accessible organ and function will be searched for organic or functional infirmity. With this in view, we advise all candidates to secure a thorough examination at home both as to physical and academic tests, just as the above circular suggests. No candidate should expect any discrimination in his favor in either regard, for he will not and should not receive it. That discrimination would defraud the many who have a right to compete for the place. If by any method an appointed candidate secures the place, he should be held closely and impartially to the conditions. No one has any right to the place. He who receives an appointment to appear to undergo the tests, must undergo them in every particular.

## TIME OF APPOINTMENT.

The Board of Visitors holds that the law governing the time of appointments should be more strictly construed and rigidly observed. It is required by law that candidates must be appointed one year in advance of their reception into the Academy, unless by death or otherwise a vacancy is caused which can not be provided for by such advance appointment. We direct attention to the argument made in the proceedings of the Academic Board, December 5, 1887, quoted above by the subcommittee, on this topic of appointments and examinations. The law provides that alternates also must be examined at the same time when their principals are examined, and that the former should be appointed, like their principals, as nearly a year in advance as is possible. Both should be appointed as the law directs.

## TIME OF REPORTING FOR EXAMINATION.

The law prescribes that appointees shall be admitted under regulations made by the Secretary of War. The Secretary of War accordingly

has expressly ordained that candidates must be examined in June, unless sickness or other unavoidable cause prevents that test in the month named. It is argued, correctly we believe, that it is not contemplated that there shall be a double opportunity in the same year to fill a given vacancy. At the same time it appears that another construction of the law is held by some, inasmuch as, for instance, of the forty-four examined in August, 1887, more than three-fourths were appointed as cadets after the June examinations of that year. These instances would seem to prove that the law requiring candidates to be appointed a year in advance is not strictly enforced, since it does not appear probable that death or other unavoidable causes could have justified so many post-June appointments.

It certainly does not appear just that candidates who have appeared for and have failed in the June examinations should be re-appointed and permitted to re-appear for examinations only two months later in the same year. The sickness named in the law has not robbed them of a June appearance; they certainly are not dead, and incompetence in June should not be reckoned or recognized as among the legal "unavoidable causes" at a time when so many other eligible young men are ready and competent to undergo the prescribed tests for admission in the month designated by law.

The evils of avoidable August examinations are brought into prominence in the light of the facts that in the decade ending in and including the year 1887, about 20 per cent. of applicants failed academically in the June examinations, whereas of those who were examined in August, 38 per cent. failed to pass. The figures for this present year tell their own story and enforce their own lesson, as follows:

Of candidates in 1889, 139 were examined in June. Of these, 14 were rejected by the surgeons, leaving 125 for academic examination, in which latter tests 41 failed, or about 33 per cent. of the 125.

Of candidates in 1889, 56 were examined in August. Of these 11 were rejected by the surgeons, leaving 45 for academic examination, in which latter tests 28 failed, or about 63 per cent. of the 45.

Thus it will be seen that the candidate mortality as result of contact with the Academic Board was almost twice as great in September as it was in June. Incidentally we suggest that it is incredible that the Academic Board, refreshed as it is after its summer vacation, is more savage and exacting in September than it is in June. We have no doubt that the comparative figures expressing the relative academic rejections are conclusive proof that the preparation of candidates is twice as poor in September as it is in June. Granting that all might be admitted as result of both the June and September examinations, it is clear that the grade of scholarship in the Academy must decline. We recommend that emphasis stronger than ever before be put upon the legal requirements relating to the time for reporting for examinations in June and that none but unavoidable exceptions be tolerated.

Even if the candidate's preparations were as good in September as they are in June, instead of being twice as poor, there is an additional reason why the candidate should be at the Academy and ready to begin his work in June. The cogent additional reason is as follows:

The June admittees are kept busy by their exclusive military duties and novitiate as soldiers. Though utterly exempt from academic study, they are engrossed and absorbed, until after personal drill, "setting-up," and minute individual instruction, they are admitted into the corps for service on guard and police duty, battalion drill and parades, and guard-mounting. Those who enter in September are raw, awkward, un-

drilled, and profoundly ignorant of all that which has fully occupied the time of the June admittees during half of June, all of July, and all of August. The September comers must begin academic study with those who have been instructed in camp all summer, and it is wonderful that one-quarter of the "Seps." outlive the combined academic and military tests of the coming half year. These practical considerations make it appear certain that the law anticipated the direful double dangers of entrance in September, and therefore contemplated the admission of cadets in June as a rule, and provided entrance in September for the exceptional, unfavored, and belated comers. The Board, therefore, advises the stricter construction of the wise law, as but simple justice to the Academy, and to the competing, eager, and well-equipped, would-be candidates who are defrauded by the looser construction of regulations on the subject.

If, now, the September admittee is really below grade in preparation to enter the Academy, how fearfully he is handicapped in the race after entrance, and beneath the burden of his double duties. Little wonder that so many of the "Seps." ultimately fall out of the race and resign or are dismissed. When that distinguished officer and successful Superintendent, General Wesley Merritt, was in charge of the Academy, he said confidently, and correctly:

> The records show that in nine cases out of ten cadets who are of doubtful proficiency at the January examination fail outright before the end of the second year's course; and in cases where cadets weak in their studies have been turned back to resume the course after failure the first year, they seldom succeed in completing more than one step beyond the stage of their original failure. In other words, the first six months' course is a fair test of a youth's ability to succeed, and generally, if his position in his class is doubtful at this time, his deficiency is sure, sooner or later, to find him out.

That is to say, during the fifth month after the admission of the new September candidate, he is subjected to the examination which will determine whether or not he is to be promoted from the number of "candidates admitted" to take rank among "cadets appointed." The candidates examined in August for admission are tested in January, after they have been doing the double duty above sketched, and under very adverse circumstances. General Merritt says that nine out of ten who are of doubtful proficiency in January fail outright before the end of the second year. In the light of such testimony it would seem but simple justice to insist that not less than 90 per cent. of candidates shall appear for examination in June and not more than 10 per cent. in August. This Board directs attention to the fact that of the whole number examined this year, on the two occasions, after deducting those who were rejected on physical grounds, 33 per cent. were examined in August. It ought not so to be. It would seem that violations of law are increasing.

After this industrious but just discounting of September admissions, we cheerfully admit the excellence of the rare individual who succeeds in conquering all difficulties, and finally receives his diploma. We discuss simply the policy concerned, and after appending the names of those who were received in 1889, we wish them all possible success. The following is the list of candidates admitted this year, those names to which a star is prefixed belonging to the September admittees. All others were admitted in June:

*List of cadets admitted in* 1889.

| Names. | Whence appointed. | Names. | Whence appointed. |
|---|---|---|---|
| Ames, Butler | Massachusetts. | Kutz, Charles Willauer | Pennsylvania. |
| Andrews, Lincoln Clarke | New York. | Laws, Albert | Maryland. |
| *Arnold, Claude Sidney | Missouri. | Lawton, Frederick George | Mississippi. |
| Babcock, Walter Crosby | Massachusetts. | Lawton, Louis Bowen | New York. |
| Bash, Louis Hermann | Illinois. | LeComte, Henry Charles | Switzerland. |
| Bassette, Buell Burdett | Connecticut. | Lewellen, Emerson Calvin | Kansas. |
| Battle, John Somerville | North Carolina. | Mann, Fred Eugene | Wisconsin. |
| Beattie, Herbert | Illinois. | Martin, Amos H. | Pennsylvania. |
| Bell, Edwin | New York. | Mathews, James Davenport | Ohio. |
| Berkeley, Hugh Douglas | Mississippi. | McKenna, Frank Bornemann | California. |
| Beyer, Walter Fred | Michigan. | McLewee, William Beresford | New York. |
| * Brown, Allen Percy | Nebraska. | McManus, George Henry | Iowa. |
| Brown, William, jr | Illinois. | * Monroe, William Harrison | West Virginia. |
| Carpenter, John Stewart | New Jersey. | Morgan, John | Ohio. |
| Cassatt, Edward Buchanan | At large. | * Morgan, Robert Edmund Lee | Mississippi. |
| Clark, Elmer Wright | Iowa. | Nelson, Hunter Bithal | Tennessee. |
| * Cochen, Frank Sherwood | New York. | Parke, Francis Neal | Maryland. |
| * Cole, Secor Quick | New York. | Pattison, Harry Howard | Indiana. |
| Colt, William Wesley | Illinois. | Penick, Harry Otho | Iowa. |
| * Connell, Thomas Walter | New York. | Perry, Howard Rand | Illinois. |
| Coppock, Wilson Clark | Ohio. | Pool, Solomon Clifton | North Carolina. |
| * Cox, Edwin Luther | Texas. | Punch, Andrew Martin | Missouri. |
| Crosby, Herbert Ball | Illinois, | Raymond, Robert Rossiter | New York. |
| Cruikshank, William Mackey | Dist. Columbia. | Read, James Charles | Pennsylvania. |
| Davenport, Joseph Andrews | Louisiana. | Rice, John Hodgen | Missouri. |
| Edwards, Arthur Morris | Nebraska. | Rogers, William Cauldwell | New York. |
| Farr, Otho Williard Burnham | Maine. | Sawtelle, Charles Greene, jr | At large. |
| * Forrer, Charles Daniel | Virginia. | Schindel, Samuel John Bayard | Pennsylvania. |
| Geleerd, Myer | Ohio. | Shortz, Robert Packer | Pennsylvania. |
| Graham, Malcolm Kintner | Texas. | Smedberg, William Renwick, jr | California. |
| Guthrie, James Morris | Kentucky. | Smith, Hamil Allen | Georgia. |
| Hart, Verling Kersey | Wyoming. | Smith, Mathew Charles | Alabama. |
| * Hartwick, Edward Edgar | Michigan. | * Smith, Thomas Allison | New Jersey. |
| Hazzard, Samuel Chrisman | Pennsylvania. | Smith, Thomas Lee | Indiana. |
| Heiner, Gordon Graham | Pennsylvania. | Taylor, Edward | Idaho. |
| Heywood, Edwin Jerome | New Hampshire | Thrasher, Norman Samuel | New York. |
| Holther, Louis Jenson, jr | Utah. | * Timberlake, Edward Julius, jr | Tennessee. |
| Honey, Robertson | Rhode Island. | Urtecho, José Andrés | Nicaragua. |
| Houle, George Edmund | Massachusetts. | Vidmer, George | Alabama. |
| Howell, George Pierce | North Carolina. | Waite, Harrison, jr | Virginia. |
| * Hunt, Ora Elmer | California. | Walker, Meriwether Lewis | Virginia. |
| Hyer, Benjamin Bremner | New York. | Whipple, Allen Pugh | Georgia. |
| Jamerson, George Hairston | Virginia. | Whitworth, Pegram | Louisiana. |
| Johnston, Robert Pulliam | North Carolina. | * Williams, Andrew Erwin | Texas. |
| Kilbourne, Lincoln Fay | At large. | Wilson, Frank Edwin | Ohio. |
| Kilburn, Dana Willis | Illinois. | * Wise, Hugh Douglas | At large. |
| King, David Matson | Ohio. | * Wolfe, Orrin Rawson | Kansas. |
| Krouse, Harry Augustus | Pennsylvania. | Wood, Charles Drury | Tennessee. |

Under joint resolution of Congress, Henry Charles LeComte, of Switzerland, and José Andrés Urtecho, of Nicaragua, appear in the above list.

## APPOINTING CANDIDATES AND THEIR NUMBER.

The President is authorized to appoint candidates "at large," so that there may be ten cadets in the Military Academy thus appointed all the time. In other words, His Excellency appoints ten in each quadrennium. As a rule, these go to West Point to be tested for admission simply because they are so authorized. As one other rule, these appointees are sons or nephews of army officers.

This Board would gladly see the President of the United States invested with the authority to appoint ten cadets each year, and, in addition, to make a place at West Point for a stated sufficient number of army or navy officers' sons, the young men to be tested as usual. The subcommittee on this topic suggests that the governors of States be permitted to appoint one cadet each, so that the vacancies at West Point may be supplied; that is to say, abolished. We direct attention

to the fact that Representatives in Congress are permitted to designate candidates only as a courtesy, since, in law, the power to appoint belongs to the President, and is exercised by the Secretary of War as the head of the War Bureau, under the President. Others have recommended that United States Senators have power to select rather than the governors.

We are content to leave this point in administration to Congress, with the expression of the hope that the recurring vacancies ought to be promptly filled.

At the same time, we direct attention to the fact that examinations sometimes result in rejecting both the principals and their alternate cadets from a given district while bright boys are passed triumphantly by the Academic Board, and it immediately appears that there is no vacancy to reward those competent and efficient candidates. That very contingency was realized six times in the June and once in the August examinations this year. This Board does not feel free to recommend that in such instances the President should be authorized to appoint the passed candidates and charge them up against the quota of States whose candidates have failed, but the successful, yet portionless, young men should be enabled to enter the Academy, on whose rolls there are many vacancies. We heartily recommend that the President be allowed by law to appoint young men "at large" in such instances, and particularly when they exhibit exceptional ability and industry, these latter tests to be witnessed to the President by the Academic Board of the Academy at West Point.

Many members of this Board of Visitors give much respect to the well-known view of General Grant, who said that there should be at least one thousand cadets at West Point, only the better of the graduates to receive commissions in the Army. At any rate, the Board as such favors the filling of all vacancies, and some prefer the enlargement of the corps beyond that, allowing service in the Army after graduation to be voluntary on the part of the cadet.

There is an impression abroad that there are already more annual graduates from the Military Academy than vacancies in the Army to be filled. On this last point we cite the evidence to the contrary contained in a paper prepared by Lieutenant Simpson, who at our request has brought his figures down to date, for use in this report:

RELATIVE GRADUATES AND VACANCIES—NUMBER OF VACANCIES OCCURRING ANNUALLY IN THE ARMY THAT ARE OPEN TO GRADUATES OF THE MILITARY ACADEMY COMPARED TO NUMBER OF SUCH GRADUATES.

[Prepared by First Lieut. W. A. Simpson, Second Artillery.]

Below will be found a table showing the number of casualties, making, directly or indirectly, vacancies which the graduates of the Military Academy may be assigned to fill, and the number of such graduates for the last fourteen* years. The table does not cover a longer period, because, in 1871, there was completed a considerable reduction in the number of regiments in the Army, and its strength since has been nearly uniform.

The number of casualties, taken from the official Army Registers, has been obtained as follows:

First. By counting the actual number of casualties in the Corps of Engineers and line of the Army, and in those staff departments (Adjutant-General's, Inspector-General's, and Ordnance) in which vacancies are filled by appointment from the line, and excluding the Signal Corps, and the Medical, Quartermaster, Subsistence, and Pay Departments, as vacancies in these either can not or need not be filled by appointment from the line. In cases where vacancies in the latter have been filled from the line such vacancies have been counted.

*Lieutenant Simpson has extended his tables so that their valuable figures apply to the years 1872 to 1889, inclusive.—[Note by secretary of Board of Visitors.]

Second. By counting the casualties on the retired list. As there are always more subjects for retirement than places for them on the list every vacancy on this list is soon filled by taking an officer from the active list. The retired list is open to the whole Army. The number of officers, vacancies among whom would cause vacancies among the second lieutenants of the line or Corps of Engineers is 1,830. The number of vacancies among whom would not do so, is 380. The proportion is, therefore, about 4.8 to 1. Supposing that retirement is equal in the different branches of the service, forty-eight officers of the former class go upon the retired list to ten of the latter, and therefore forty-eight fifty-eighths of the casualties on the retired list give rise to vacancies open to graduates, non-commissioned officers, and appointees from civil life.

The number of each graduating class is taken from the Official Military Academy Register of the corresponding year.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Year. | Number of graduates in class corresponding to year. | Casualties causing vacancies available for graduates Military Academy. | Total number of casualties on the retired list. | Forty-eight fifty-eighths of preceding column. | Sum of columns 3 and 5, giving total number of casualties providing vacancies for graduates. |
| 1872 | 57 | 60 | 13 | 11 | 71 |
| 1873 | 41 | 69 | 9 | 7 | 76 |
| 18 4 | 41 | 79 | 9 | 7 | 86 |
| 1875 | 43 | 47 | 9 | 8 | 55 |
| 187 | 48 | 57 | 13 | 11 | 68 |
| 1877 | 76 | 64 | 10 | 8 | 72 |
| 1878 | 43 | 53 | 6 | 5 | 58 |
| 1879 | 66 | 25 | 5 | 4 | 29 |
| 1880 | 52 | 37 | 9 | 7 | 44 |
| 1881 | 53 | 44 | 12 | 10 | 54 |
| 1882 | 37 | 51 | 12 | 10 | 61 |
| 1883 | 52 | 47 | 23 | 20 | 67 |
| 1884 | 37 | 44 | 13 | 10 | 54 |
| 1885 | 39 | 37 | 21 | 18 | 55 |
| 1886 | 77 | 40 | 23 | 19 | 59 |
| 1887 | 64 | 36 | 22 | 18 | 54 |
| 18 8 | 44 | 30 | 23 | 19 | 49 |
| 1889 | 48 | 36 | 19 | 16 | 52 |
| Total | 918 | 856 | 251 | 208 | 1,064 |
| Yearly average | 51 | ..... | ..... | ..... | 59 |

Comparing columns 2 and 6, we see that the average number of vacancies annually exceeds by eight the average number of graduates.

It will be forever impossible to compute the influence and value of the infiltration into American social and business life of numbers of young men educated at West Point. The habits there formed and the definite scholarship acquired make the graduate a marked man. Unlike as in almost all other countries, these graduates are not dissimilar from their fellows educated in citizen schools. The distribution of such graduates among the people give the latter more knowledge of and sympathy with the Military Academy. It is not generally known that the Naval Academy at Annapolis has not expected to find places in our Navy for all graduates, but after certain examinations diplomas are granted, and some of the graduates have been relegated to citizen life, after payment to them of about $1,000 each.

The full valuation of such graduates from the Military and Naval Academies, in case of unavoidable, sudden war is, of course, impossible. Such a war may prove to be unavoidable, even though it may be one of the closing series to precede the abolition of all wars among nations sensible and humane enough to arbitrate their differences. At the same time, it may appear that such a reign of common sense and enlightened humanity is be the fruit of our manifest readiness to take the field against whatever foe. The exercise of good conscience often has its

substantial basis and correlative in palpable, solid muscle owned by some one whom it is not entirely safe to insult or wise to strike. Arbitration has its antithesis in powder and steel, and our enemies may feel it more convenient to reason together with those who may not be conveniently swallowed or partitioned. At any rate, we, as a nation, will probably not cease to be interested in the latest tactics, and to continue investigation into military subjects, as well as into peaceful navigation and thrifty commerce. We will continue to train our theoretical soldiers, and it may be thought best even to increase their number at West Point. We recommend that at least all vacancies be filled, and the Academy outfitted as this report recommends.

## SELECTING CANDIDATES BY COMPETITION.

Examination for admission is as important to scholarship in the graduated cadet as spring planting is to autumnal harvests. How shall the best would-be candidate be identified and selected from among those who ought not to be at West Point as the nation's chosen and invited pupils?

We have reason to approve the method of selecting candidates by competitive examinations, in all cases conditioning that approval on the rigid proviso of honest competition. We condemn and reject the use of the strategic competitive method when employed to discharge a Congressman from responsibility to his constituents, and at the same time with the understanding that whosoever excels, a previously and privately designated favorite shall receive the appointment.

There are two modes of selecting. One is by the "direct" method of appointment and the other by competition.

By comparisons, it has been determined that during a period of about fourteen consecutive years, of cadets who were selected by competition, 63 per cent. graduated at West Point, while of cadets selected directly, without competition, only 37 per cent. graduated.

As to the special point affecting entrance to this Academy, it has been ascertained by comparison extending over a dozen consecutive years, that of candidates selected by competition, 79 per cent. passed the entrance examination at West Point, while of those directly appointed, without competition, 60 per cent. passed the corresponding entrance examination at West Point. While thus favoring competition under just conditions, we prefer that the competitive examination papers should be prepared by the Academic Board at West Point, since even examination papers for use in that competition should be correlated to the tests to which the candidate will later be subjected at West Point. As the board named will shape the finished product in the Academy, it would seem that it should have its hand on the raw material from the very beginning, provided always, of course, that this initial influence shall shape only the tests for all candidates, and shall not affect in the slightest degree the personal selection of the individual candidate. One of the practical difficulties in this suggestion is the danger that the examination papers thus prepared at West Point may be seen in advance by those who compete in said competition. It is scarcely too much to assume that honorable gentlemen and cadet candidates will be far above and beyond such temptations in the respect named. At all events, the home competition should be fair, and far removed from possibility of favoritism. We again emphasize the recommendation, in the circular quoted above, respecting some rigid home tests as to the academic and physical qualifications of the would-be cadet.

## VII.—WHAT THE SPECIAL SUBCOMMITTEE SAW AFTER GRADUATION DAY.

As before recited, the first class received its diplomas June 12, and on the afternoon of that day it suddenly disappeared from West Point, in company with the "furlough class," which had just finished its second year of study. That joyful Hegira left at West Point only the three-year old and the one-year old classes. Immediately the parade, and indeed all formations, shrunk to one rank. The gray-coated *personnel* of the Academy was reduced to one-half the corps, and the Visitor, or the loiterer who spelled his relations to West Point with a small "v," fell to wondering whether or not there were means provided whereby the corps should be re-enforced.

Certain familiar provisions, some of which we have already discussed in this report, began to take effect. Squads, and groups, and larger bodies of young men who had been masquerading for days in citizens' clothes divided themselves into pre-appointed divisions, and on June 13, 14, 15, and 17, made their way to the adjutant's office, where, seated in the hall, and waiting their turn, they quietly read the following which had been handed to them:

INSTRUCTIONS TO CANDIDATES.

Each candidate on arrival at the Military Academy will—

1. On reporting to the adjutant present for examination his letter of appointment; subsequently he will be called upon to—

2. Register.

(1) Name clearly and in *full*, age (in years and months); place of residence, (post-office, county, and State); district from which appointed; where born (State or Territory); name and address of parent for guardian; date of birth.

(2) Are both parents living, nationality of each, etc.; profession or occupation of parent or guardian; circumstances of parent or guardian—whether affluent, moderate, reduced, or indigent; whether candidate is from the country, town or city. Appointment, how obtained, whether by competitive examination, or direct appointment; if by competitive examination how many competitors (including self); also whether he has ever previously reported as a candidate at the Military Academy?

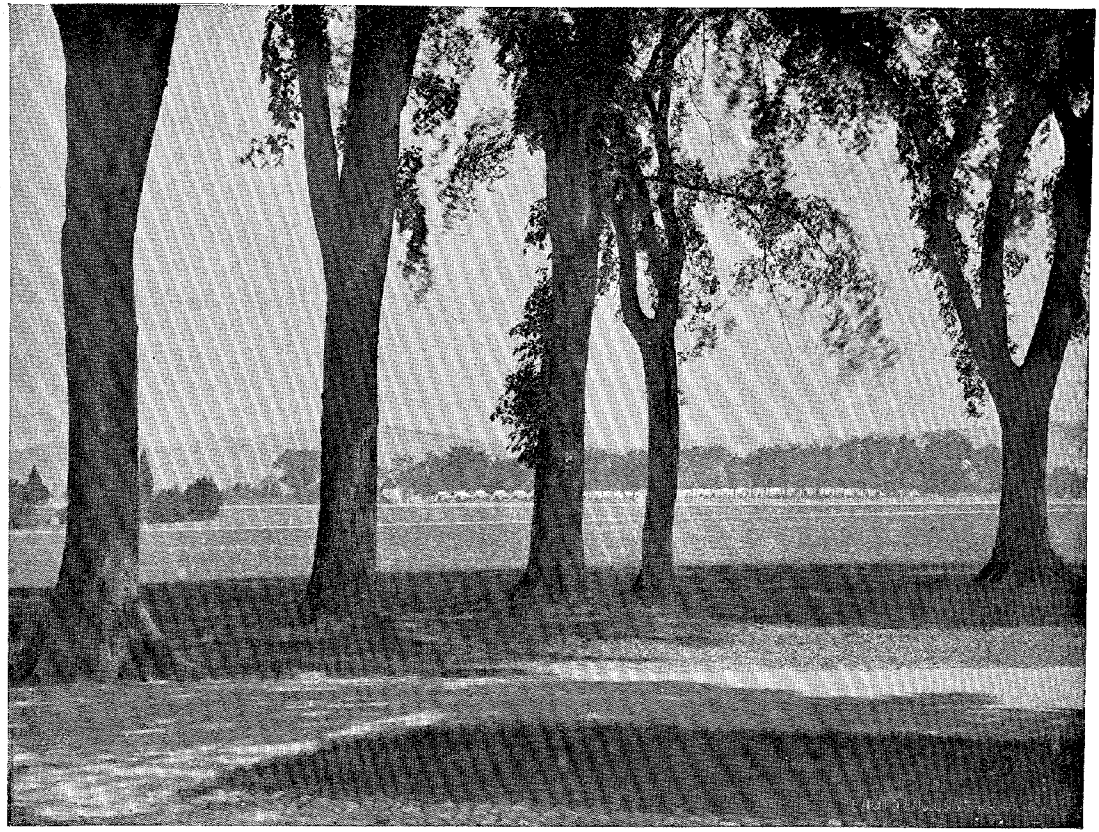
(3) Time in years and months of attendance at—
- public school
  - common school.
  - high school.
- private school
  - common school.
  - high school.
- normal school or academy.
- college.
- time employed in private study within the last five years.
- time engaged as teacher.

3. The candidate will then be sent under charge of an orderly to the medical board for physical examination, and upon returning will present to the adjutant the report of the same; should this be satisfactory—

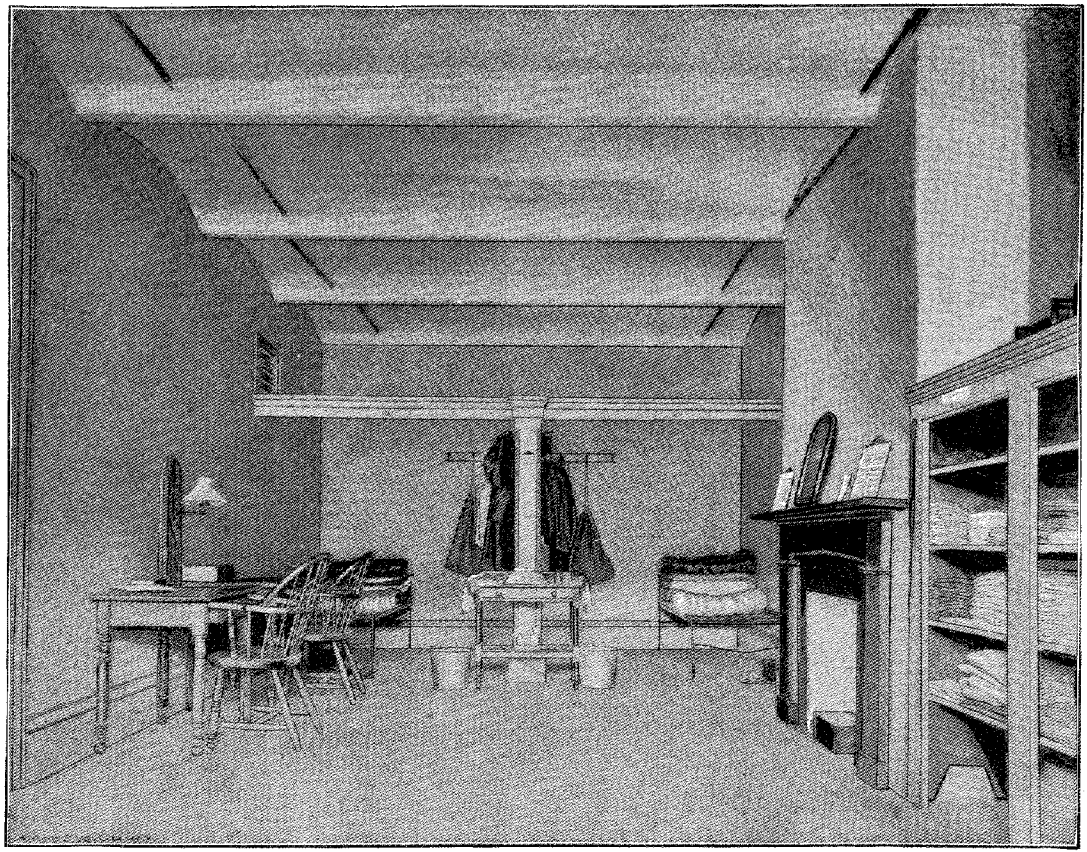
4. The candidate will then be sent to the treasurer to deposit all the funds in his possession. The memorandum received from the treasurer will be presented to the adjutant.

5. The candidate will then be sent to the cadet barracks to report to the officer in charge of new cadets.

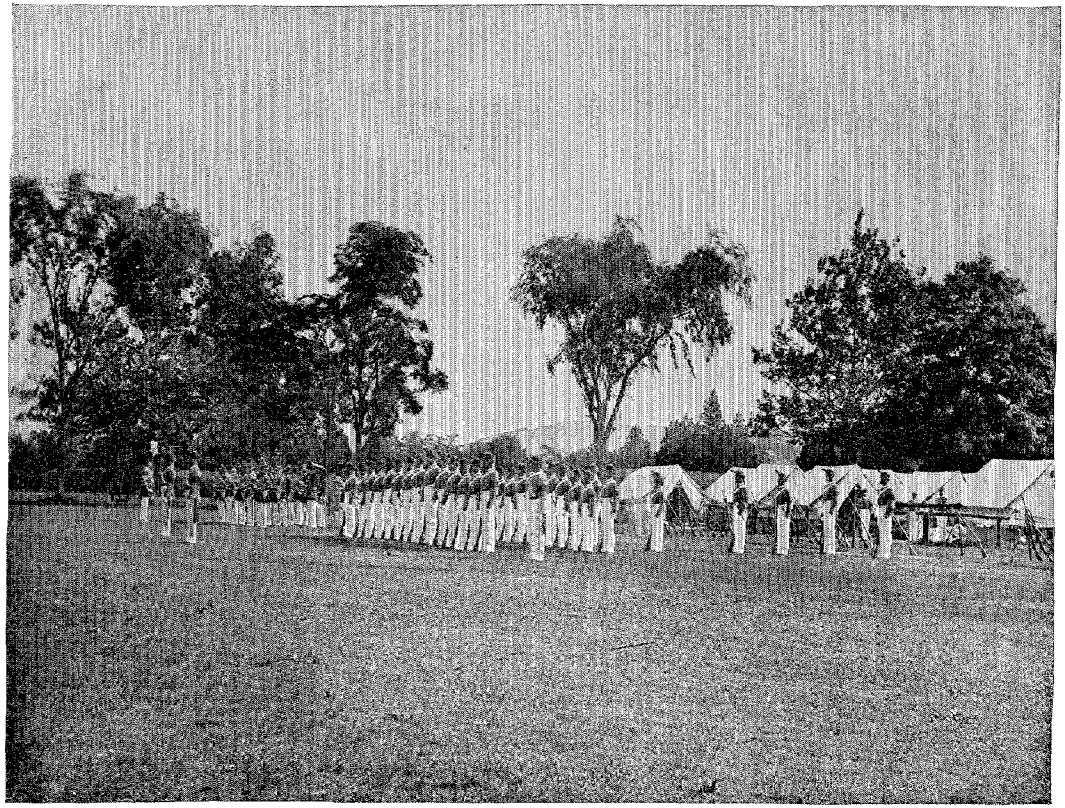
N. B.—It is important that the data called for in registering be given *truthfully* and as *accurately* as possible. This information, so far as it relates to the individual candidates, is not for publication—these records being considered confidential.



THE PLAIN, WITH ENCAMPMENT IN THE DISTANCE—LOOKING EAST.



A ROOM IN CADET BARRACKS.



GUARD-MOUNTING IN CAMP—LOOKING NORTHEAST.

Each candidate entered the office in turn when summoned by name and filled out the above blanks. When a squad of about eight was collected after making the above record it was marched in charge of an orderly to the rooms of the medical examining board, who sat in the hospital. Each candidate bore a copy of the following blanks properly filled out, thus:

A.

No. [So and So.] WEST POINT, N. Y., *June* 15, 1889.

Candidate John G. Blank is authorized to present himself before the medical board for examination.

W. C. BROWN,
*First Lieutenant First Cavalry, Adjutant.*

B.

No. [So and So.] WEST POINT, N. Y., *June* 15, 1889.

Candidate John G. Blank has been examined by the medical board and is accepted.*

ANTHONY HEGER,
*Surgeon U. S. Army, President of the Board.*

The candidate, on arrival at the examining rooms, was stripped utterly and subjected to most searching tests, which continue for about forty minutes, unless some decisive test sooner decides the case against him. The blanks last quoted are perforated horizontally, and after the medical examination the parts are separated, the surgeon retaining the upper half (A) and sending the other half (B) sealed to the adjutant by the hand of the candidate. The young man does not know the result until it is announced to him by the adjutant. If the candidate is rejected he is given a detailed statement of the reasons; while if it is favorable the candidate goes to the treasurer, who receives all the money in the cadet's possession and gives his receipt therefor. That being attended to, the candidates are marched by an orderly to the cadet barracks, where they are received by two cadet lieutenants and two cadet corporals and sent to their rooms, after receiving instructions in their immediate duties as candidates in barracks. Thus in turn all are received and are drilled in the simplest company movements in the school of the Soldier, so that they may be marched to meals and to other immediate duties.

After all are received, which, in this instance, occupied three days, comes the ordeal of academic examinations, which are held in the cadet mess hall, the remaining cadet corps meantime having gone into camp near Fort Clinton, where it is kept separate from the "plebes," as the new-comers are called traditionally.

On the dread examination morning all are assembled in the mess hall and are given seats at the many tables, with instructions that no one is to hold communication of whatsoever kind with any person in the room, the officers excepted, and with them only when something is specially desired. We give the papers on the various subjects, which are the ones actually used in the last June examinations this year. At our request "the poorest paper submitted" and the "poorest paper submitted by a candidate who passed," on each subject, have been copied and are herein printed. Where the written replies are not given together with the questions the latter are pre-printed.

* Or rejected.

The following is the letter from Adjutant Brown, who transmits the papers:

HEADQUARTERS U. S. MILITARY ACADEMY,
*West Point, N. Y., July* 31, 1889.

SIR: Agreeably to your request, I have the honor to forward herewith a list of the questions used at the examination of candidates for admission in June of this year. I send also copies of examination papers submitted by certain of these candidates.

It has been thought best to send in each subject a copy of the poorest examination paper submitted, as well as a copy of the poorest examination paper of those pronounced duly qualified for admission.

These papers will therefore demonstrate to the public not only the great lack of preparation displayed by some of the candidates who report, but will also show that the academic board can not be considered as being by any means unduly severe in the amount of proficiency required for admission.

Very respectfully, your obedient servant,

W. C. BROWN,
*First Lieutenant First Cavalry, Adjutant.*

Rev. ARTHUR EDWARDS, D. D.,
*Secretary Board of Visitors, Chicago, Ill.*

COPY OF POOREST EXAMINATION PAPER IN ENGLISH GRAMMAR SUBMITTED BY ANY CANDIDATE WHO PASSED.

[Errors are indicated by heavy-faced type.]

[No. —. June 17, 1889.]

*Examination in English grammar.* (*Time allotted, two and one-half hours.*)

DIVISION I.

[N. B.—Write the answers below, numbering them to correspond with the questions.]

1. What is a *conjunction?* What are the two great classes of *conjunctions,* and how are these classes distinguished? Give examples.
2. What is a *pronoun?* What are *personal pronouns? relative pronouns? demonstrative pronouns?* Give examples.
3. What is a *noun?* For what are nouns *inflected?* Give the *general rule* for the *formation of the plural* of nouns, and give the *exceptions* to the rule.
4. Give the *principal parts* (present, past, and past participle) of the following verbs: *Lose, steal, tear, tread, fight, smite, loose, leap, smell, meet, mistake, lend, catch.*
5. What is an *adjective?* How are adjective *compared?* Compare *bad, little, many, strong, beautiful.*

1. A conjunction is a word used to connect sentences or parts of sentences. The two great classes of conjunctions are co-ordinate and subordinate. These classes are distinguished by the kind of sentences they connect. **[Incomplete.]**
Example: Wood will burn and air will not burn.
Example: I believe **that** is right.
2. A pronoun is a word used for or instead of a noun. Personal pronouns are pronouns used to denote **some person or thing.** Relative pronouns are pronouns used **to show relation.** Demonstrative pronouns are pronouns used **to demonstrate** some thing.
Example: I saw you. I know of whom you speak. I saw that was a fair question.
3. A noun is a name. Nouns are inflected **to give their proper form, meaning, use, and relation.** Nouns form their plural by adding "s" or "es" to the singular. Nouns ending in f or fe. Nouns ending in "y," preceeded by a consonant **[do what?].**

4.

| Present. | Past. | Past participle. |
|---|---|---|
| Lose. | Lost. | Lost. |
| Steal. | Stole. | Stolen. |
| Tear. | Tore. | Torn. |
| Thread. | Threaded. | Threaded.* |
| Fight. | Fought. | Fought. |
| Smite. | Smote. | Smitten. |
| Loose. | Loosed. | Loosed. |
| Leap. | Leaped. | Leaped. |
| Meet. | Met. | Met. |
| Smell. | Smelt [or smelled.] | Smelt [or smelled.] |
| Mistake. | Mistook. | Mistaken. |
| Lend. | Lent. | Lent. |
| Catch. | Caught. | Caught. |

* Wrong verb.

5. An adjective is a word used to limit or qualify the meaning of some noun or pronoun. Adjectives are compared regularly by prefixing the words more and most; [use of suffixes *er*, *est* omitted]; more for the comparative and most for the superlative. Bad, worse, worst; little, less, least; many, more, most; strong, stronger, strongest; beautiful, more beautiful, most beautiful.

## Division II.

[N. B.—Write quite across both pages, if necessary. In parsing, give no rules, declensions, comparisons, or principal parts; but, in other respects, parse fully, being careful to give the subject of each verb, the governing word of each objective case, and to state precisely what each conjunction connects, between what words each preposition shows the relation, and to what each pronoun refers. Important omissions will be taken to indicate ignorance. Intelligible abbreviations are allowed.]

Parse the words in *italics* in the following paragraph: *Men's minds* are *as variant as* their *faces*. *Where* the motives *of* their actions *are pure*, the operation of the *former* is no *more to be imputed* to them *as* a *crime than* the *appearance* of the latter: *for* both, *being* the *work* of nature, are alike unavoidable.

Men's is a noun; common; third; plu.; masculine; possessive case, because it denotes poss. [modifies?]

Minds is a noun; common; third; plu.; neuter; nominative case, subject of clause "minds are variant."

As is an adverb of degree; modifies variant.

Variant is an adj., limiting, as the attribute complement.

As is a conj. adverb; connects clauses "minds are variant" and faces are variant.

Faces is a noun; common; third; plu.; neuter gender; objective case.

Where is a pronoun; relative; third person; singular number; neut. gender; nom. case, subject of clause faces are variant.

Of is a preposition; shows the relation between motives and actions.

Are is a verb; intransitive; irreg.; ind. mode; pres. tense; plu. num., subj. motives.

Pure is an adjective; comparative; positive degree, complement of pred. are.

Former is a noun; common; third person; plu. num.; neut. gen.; object of prep. of [refers to?]

More is an adverb; belongs to "is to be imputed."

To be imputed is a verb; intransitive; reg. infinitive; third person; sing. number; subject crime.

As is a conjunctive adverb; connects "crime [to] to be imputed."

Crime is a noun; common; third per.; sing. num.; neut. gen.; nom. case; subject of "crime is to be imputed."

Than is a conjunctive adverb; modifies more.

Appearance is a noun; common; third person; sing. number; neuter gender; nominative case; subject of (appearance is to be imputed).

For is a preposition; connects clause "are unavoidable" to "crime is to be imputed."

Being is a participle, formed by adding ing to be. [Incomplete.]

Work is a noun; common; third; sing.; neut.; obj. case. [Incomplete.]

DIVISION III.

Correct all errors that occur in the following sentences:
1. Agreeable to my promise, I now write.
1. Agreeably to my promise, I now write.
2. Fondness for display is of all other follies the most ridiculous.
2. Fondness for display is of all follies the most ridiculous.
3. We cannot have but one week's vacation.
3. We can have but one week's vacation.
4. We are neither acquainted with the doctor or his family.
4. We are not acquainted with the doctor or [**with**] his family.
5. The soldiers had laid on the ground all night.
5. The soldiers had lain on the ground all night.
6. The two John Smiths are not related to one another.
6. The two John Smiths are not related to each other.
7. Charles is a timid, nervous child, like his father was.
7. Charles is a timid, nervous child, like his father.
8. Most people think that lawn tennis is a real healthy game.
8. Most people think that lawn tennis is a very **healthy** game.
9. Two thousand dollars were divided between the five children.
9. Two thousand dollars was divided among the five children.
10. The sum of these angles are one hundred and eighty degrees.
10. The sum of these angles is one hundred and eighty degrees.
11. No memoranda of the transaction was kept.
11. No memorandum of the transaction was kept.
12. Every one was dressed alike.
12. All were dressed alike.
13. Most any piece of old silk will answer for the lining.
13. Any piece of old silk will answer for the lining.
14. He asked me would I lock the door.
14. He asked me if I would lock the door.
15. Let you and I look over these books.
15. **Let's** you and **I** look over these books.
16. Fire is a better servant than a master.
16. Fire is a better servant than **a** master.
17. I am one of those who can not describe what I do not see.
17. I am one of those who cannot describe what **I** see.
18. Plato believed that the soul was immortal.
18. Plato believed that the soul is immortal.
19. It was my intention to have arranged the parts in a different order.
19. It was my intention to arrange the parts in a different order.
20. Who should I see but my old friend?
20. **Who shall** I see but my old friend.
21. Leave a blank line between each of your answers to the examination question.
21. Leave a line between **each answer** to the examination questions.
22. You may go if you wish too.
22. You may go if you wish.
23. Review the first and the second pages.
23. Review the first and second pages.

True copy.

JOHN R. TOTTEN,
*First Lieutenant Fourth Artillery, Assistant Professor of Spanish.*

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[No. — June 17, 1889.]

COPY OF POOREST EXAMINATION PAPER IN ENGLISH GRAMMAR SUBMITTED.

[Errors are indicated by heavy faced type.]

*Examination in English Grammar.* (*Time allotted, two and one-half hours.*)

DIVISION I.

[N. B.—Write the answers below, numbering them to correspond with the questions.]

1. What is a *conjunction?* What are the two great classes of *conjunctions,* and how are these classes distinguished? Give examples.

2. What is a *pronoun?* What are *personal pronouns? relative pronouns? demonstrative pronouns?* Give examples.

3. What is a *noun?* For what are nouns *inflected?* Give the *general rule* for the *formation of the plural* of nouns, and give the *exceptions* to the rule.

4. Give the *principal parts* (present, past, and past participle) of the following verbs: *lose, steal, tear, tread, fight, smite, loose, leap, smell, meet, mistake, lend, catch.*

5. What is an *adjective?* How are adjectives *compared?* Compare *bad, little, many, strong, beautiful.*

1. A conjunction is a word used to connect words, phrases, clauses or sentences. The two great classes of conjunctions are subordinate and co-ordinate. **Subordinate conjunctions connect similar elements, and co-ordinate connect dissimilar elements. "And" is a subordinate and "or," "nor," or "but" are co-ordinate conjunctions.**

2. A pronoun is a word used instead of a noun. A personal pronoun is one which denotes **some person**, as I, he, she. A relative pronoun is one which **denotes some relation**, as which, what, that.

3. A noun is the name of a person or object. Nouns are inflected for **person** [number], and case. The plural of nouns is regularly formed by s [**or es**]. Some nouns form plurals irregularly, as mouse, mice. Foreign plurals change the termination of the singular, as genus, genera. [Incomplete.]

4.

| Present. | Past. | Past participle. |
|---|---|---|
| Lose. | Lossed. | Lossed. |
| Steal. | Stole. | Stolen. |
| Tear. | Tore. | Tore. |
| Tread. | Trod. | Trod [or trodden]. |
| Fight. | Fought. | Fought. |
| Smite. | Smote. | Smitten. |
| Loose. | Lost. | Lost. |
| Leap. | Leaped. | Leaped. |
| Smell. | Smelled [or irreg.]. | Smelled [or irreg.]. |
| Meet. | Met. | Met. |
| Mistake. | Mistook. | Mistook or mistaken. |
| Lend. | Lend. | Lend. |
| Catch. | Caught. | Caught. |

5. An adjective is a word used to modify or limit a noun. Adjectives are compared by adding er and est to the positive degree; by prefixing more and most; and irregularly.

| Positive. | Comparative. | Superlative. |
|---|---|---|
| Bad. | Worse. | Worst. |
| Little. | Less. | Least. |
| Many. | More. | Most. |
| Strong. | Stronger. | Strongest. |
| Beautiful. | More beautiful. | Most beautiful. |

## DIVISION II.

[N. B.—Write quite across both pages if necessary. In parsing, give no rules, declensions, comparisons, or principal parts; but in other respects parse fully, being careful to give the subject of each verb, the governing word of each objective case, and to state precisely what each conjunction connects, between what words each preposition shows the relation, and to what each pronoun refers. Important omissions will be taken to indicate ignorance. Intelligible abbreviations are allowed.]

Parse the words in *italics* in the following paragraph: *Men's minds* are *as variant as* their *faces. Where* the motives *of* their actions *are pure*, the operation of the *former* is no *more to be imputed* to them *as* a *crime, than* the *appearance* of the latter; *for* both, *being* the *work* of nature, are alike unavoidable.

Men's, noun, common, masculine gender, 3d person, plural number, possessive case [**modifies?**]

Minds, noun, common, neuter gender, 3d person, **singular** number, subjective case [**to ?**]

As, adverb, **degree.**

Variant, adjective, **discriptive**, used as attribute complement.

As, **preposition, connects faces with variant.**

Faces, noun, common, neuter gender, 3d person, plural no., **objective case**, governed by **variant.**

Where, conjunction, connects "motives of their actions are pure" with "the operation of former, etc."

Of, preposition, connects "actions" with "motives."

Are, verb, intransitive, indicative mood, present tense, 3d person, plural number [subject?]

Pure, adjective, discriptive, used as attribute complement.

Former, noun, common, neuter gender, 3d person, sing. number, obj. case, governed by operation.

More, adverb, degree, modifies to be imputed.

To be imputed, infinitive, used as an adjective, as attribute complement.

As, preposition, connects "crime" with "to be imputed."

Crime, noun, common, neuter gender, 3d person, singular no., obj. case, governed by "to be imputed."

Than, preposition, shows relation between "appearance" and "crime."

Appearance, [Not parsed.]

For, [Not parsed.]

Being, [Not parsed.]

Work, [Not parsed.]

## DIVISION III.

Correct all errors that occur in the following sentences:

1. Agreeable to my promise, I now write.
1. **Agreeable** to my promise, I now write.
2. Fondness for display is of all other follies the most ridiculous.
2. Fondness of display is of all **other** follies the most ridiculous.
3. We can not have but one week's vacation.
3. We can have but one week's vacation.
4. We are neither acquainted with the doctor or his family.
4. We **are neither acquainted with** the doctor nor [**with**] his family.
5. The soldiers had laid on the ground all night.
5. The soldiers had **laid** on the ground all night.
6. The two John Smiths are not related to one another.
6. The two John Smiths are not related to each other.
7. Charles is a timid, nervous child like his father was.
7. Charles is a timid, nervous child **like** his father was.
8. Most people think that lawn tennis is a real healthy game.
8. Most people think that lawn tennis is a **real healthy** game.
9. Two thousand dollars were divided between the five children.
9. Two thousand dollars **were** divided among the five children.
10. The sum of these angles are one hundred and eighty degrees.
10. The sum of these angles is one hundred and eighty degrees.
11. No **memoranda** of the transaction **was** kept.
12. Everyone was dressed alike.
12. **Everyone was dressed alike.**
13. Most any piece of old silk will answer for the lining.
13. **Most** any piece of old silk will answer for the lining.
14. He asked me would I look the door.
14. He asked me **would I look** the door.
15. Let you and I look over these books.
15. Let you and I look over these books.
16. Fire is a better servant than a master.
16. Fire is a better servant than a master.
17. I am one of those who can not describe what I do not see.
17. **I** am one of those who can not describe what **I** do not see.
18. Plato believed that the soul was immortal.
18. Plato believed the soul **was** immortal.
19. It was my intention to have arranged the parts in a different order.
19. It was my intention to **have arranged** the parts in a different order.
20. Who should I see but my old friend?
20. **Who** should I see but my old friend?
21. Leave a blank line between each of your answers to the examination questions.
21. Leave a blank line between **each** of your answers to the examination questions.
22. You may go if you wish too.
22. You may go if you wish to.
23. Review the first and the second pages.
23. Review the first and second pages.

True copy.

JOHN R. TOTTEN,
*First Lieut. Fourth Artillery, Assistant Prof. of Spanish.*

[June 17, 1889.]

COPY OF POOREST EXAMINATION PAPER IN WRITING AND ORTHOGRAPHY SUBMITTED BY ANY CANDIDATE WHO PASSED.

[Errors are indicated by heavy-faced type. Dashes indicate omissions.]

*Examination in Writing and Orthography.*

In many respects the nations of christendom collectively are **becaming** somewhat analogous to our own federal republic. Antiquated distinctions are breaking away, and local animosities are subsiding. The common people of different countries are knowing each other better, esteeming each other more, and attaching themselves to each other by various manifestations of reciprocal good will. It is true, every nation has still its separate **bounderies** and its individual interests; but freedom of commercial intercourse is allowing those interests to adjust themselves to each other and thus rendering the causes of collision of vastly less frequent occurrence. Local questions are becoming of less and general questions of greater importance. Thanks be to God, men have at last —— to understand the rights and feel for the wrongs of each other! Mountains interposed do not so much make enemies of nations. Let the trumpet of alarm be sounded, and its notes are now heard by every nation whether of Europe or America. Let a voice **bourn** on the **feebliest** breeze tell that the rights of man are in danger, and it floats over valley and mountain, across continent and ocean, until it has vibrated on the ear of the remotest dweller in christendom. Let the —— oppression be raised to crush the **feebliest** nation on earth, and there will be heard everywhere, if not a shout of defiance, at least a deep toned —— of implacable displeasure

The church-yard bears an added stone;
The fireside shows a vacant chair;
Here sadness dwells, and weeps alone;
And death displays his banner there!
The life has gone; the breath has fled;
And what has been no more shall be;
The well known form, the welcome tread,—
Oh! where are they? and where is he?

1. Abominable.
2. Absoption.
3. Aggrandize.
4. **Alcahol.**
5. **Catachism.**
6. Congeal.
7. **Counterfit.**
8. Deceitful.
9. Defensible.
10. Derision.
11. Dissipation.
12. Efficient.
13. **Equinimity.**
14. **Equivical.**
15. **Idolotry.**
16. **Immesity.**
17. **Indeleble.**
18. Obscenity.
19. Perceive.
20. Pigeon.
21. Proboscis.
22. Quiescent.
23. Recede.
24. Schedule.

[June 17, 1889.]

COPY OF POOREST EXAMINATION PAPER IN WRITING AND ORTHOGRAPHY SUBMITTED.

In many respects the nations of **Chrisendom** collectively are **becomeing** somewhat **analagous** to our own federal republic. Antiquated **distinguishion** are breaking away, and local **anemosities** are **subsideing.** The common people of different countries are knowing each other better, esteeming each other more, and **attatching** themselves to each other by various manifestations of **resiprocal** good will. It is true **evry** nation has **stil** separate boundaries and its individual interests, but the freedom of **commertial** intercourse is allowing those interests to adjust themselves to each other, and thus rendering the causes of **collission** of vastly less frequent **occurrent.** Local questions are **becomeing** of less, and general questions of greater importance. Thanks be to God, men have begun, at last, to understand —— and **feeld** for the **rongs** of each other! Mountains interposed do not so much make enemies of nations, Let the trumpet of alarm be sounded, and its notes are now **heared** by **evry** nation, either of Europe or of America. Let a **voic bourne** on the feeblest breeze tell that the rights of man are in danger, and it **flotes** over **valey,** and mountain **accross** continent, and ocean until it has vibrated on the ear of the remotest dweller of **Chrisendom.** Let the arm of oppression be raised to crush the feeblest na-

tion on earth, and there will be heared evry where if not a sharper defiance at least the deep toned murmers of implacable displeasure.

The church yard bears an atted stone;
The fire side showes a vacant chair;
Here sadness dwells and weaps alone;
And death displays his banner there!
The life has gone; the breath hath fled;
And what has been no more shal be,
The well known form, the welcom tred,
Oh! where are they? And where is he?

1. Abomniable.
2. Absorption.
3. Aggrendise.
4. Alcohol.
5. Catechism.
6. Congeal.
7. Counterfeit.
8. Deceitful.
9. Defensiful.
10. Derision.
11. Dissipation.
12. Efficient.
13. Equinimity.
14. Equivical.
15. Idolitry.
16. Emensity.
17. Indelible.
18. Obsenity.
19. Purseve.
20. Pigeon.
21. Probossis.
22. Quyessent.
33. Receed.
24. Scidule.

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[No. June —, 1889.]

COPY OF POOREST EXAMINATION PAPER IN GEOGRAPHY SUBMITTED BY ANY CANDIDATE ADMITTED.

*Examination in Geography.* (*Time allotted, two and one-half hours.*)

1. State fully the purpose served in geography by parallels of latitude and meridians of longitude.
2. How is the land surface of the earth divided? Give the grand divisions.
3. Locate the following capes: Cape Comorin, Cape Flattery, Mendocino, Cambodia, Race, Catoche.
4. Locate the straits of Ormuz, Torrez, Hudson.
5. Begin with the most westerly and name the divisions of Canada which adjoin the United States.
6. Name the political divisions that constitute South America.
7. Name the political divisions of Africa that touch the Red Sea.
8. Name all the countries of Europe and give the boundaries of Spain.
9. Locate the following mountain ranges: Ural, Caucasus, Apennines, Soliman, Ghauts.
10. Locate definitely the following islands: Society, Azores, Sandwich, Jamaica, Ceylon, Tasmania.
11. In going from New York to Auckland by steamer, via Suez Canal, touching at London, Bordeaux, Trieste, Constantinople, Bombay, Calcutta, Macassar, and Cape York, what waters would you pass over?
12. Name and locate definitely the capitals of the following countries: Germany, France, Italy, Sweden, Austro-Hungary, Russia.
13. Locate the following English cities: Liverpool, Birmingham, New Castle, Portsmouth.
14. Where does the Connecticut River rise; where does it empty; name the States that it crosses or separates in its course.
15. Locate definitely the following cities; state upon what waters, if any: Harrisburg, Annapolis, Buffalo, Concord, New Haven, Knoxville, Boisé City.
16. Name five of the towns through which you would pass in going from the Mississippi to the Pacific coast by each of the two most northerly lines of railway—two of the towns to be west of the Rocky Mountains.
17. Locate definitely the following mountains: Cascade, Wasatch, Blue Ridge, Bitter Root, White.
18. Locate the following lakes: Champlain, Chautauqua, Tahoe, Yellowstone Lake.
19. Bound the following States and Territories: Idaho, New Mexico, Iowa, Ohio, Tennessee, New Hampshire.
20. Name all the States and Territories in order along our northern and southern boundaries.
21. Name the States and Territories which are drained in whole or large part by the Missouri.
22. Locate the following places: Nantucket, Cape Henry, Montauk Point, San Diego, Corpus Christi.

23. A line due north from Mobile passes through what States?

1. They are the means by which we give the location and situation of cities, States, countries, etc. By parallels of latitude we tell how far north or south of the equator a certain place is. By meridians of longitude we can tell the distance east or west from a given place.

2. Into land and water. The land surface is composed of the continents and the neighboring Is. Europe, Asia, Africa, North America, South America, and Australia.

3. Cape Flattery, northwestern part of Washington Terr.; projects in Pacific O. Cape Mendocino, most western point of U. S., not including Alaska. In Oregon: (Wrong) California.

Cape Race. (No answer.)

Cape Cambodia, northeastern Asia. (Wrong) S. E.

Cape Comoran. (No answer.)

Cape Catoche. (No answer.)

4. Hudson Strait, leading from New York Bay into the Pacific Ocean. (Wrong.)

Torrez Strait. (No answer.)

Ormuz Strait. (No answer.)

5. New Brunswick, Quebec, Ontario, Manitoba, and British Columbia. (Not full.) (I began by mistake with the most easterly and went westward.)

6. French, Dutch, and British Guyana, Venezuela, Columbia, Ecuador, Peru, Chili, Bolivia, Argentine Republic, Paraguay, Uruguay, Brazil, and Patagonia.

7. Egypt. (Not full.)

8. Prussia, Germany, Norway and Sweden, Austria, Holland, Belgium, Denmark, Switzerland, Great Britain, France, Spain, Portugal, Italy, Turkey, Greece, Roumania, Servia, Montenegro. (Not quite perfect.)

Spain, bounded on the north by France, on the east by the Mediterranean Sea, on the south by Mediterranean Sea and the Straits of Gibraltar, on the west by Portugal and the Pacific O. (Wrong.)

9. Ural Mts., on the eastern boundary line between Europe and Asia.

Ural Mts. form part of the boundary between Russia in Europe and Russia in Asia.

Caucasus Mts., south of Turkey in Asia. They are south of the southwestern Russian possession in Asia. (Wrong).

Appennines traverse northern Spain. (Wrong).

Soliman Mts. (No answer).

Ghants. (No answer).

10. Society Is. (No answer).

Azores Is., in Pacific Ocean, west of Africa. (Wrong).

Sandwich Is., in Pacific Ocean, about midway between N. A. and Asia. (Not very definite).

Jamaica, one of the West India Is.; it is south of Cuba.

Ceylon, south of southeastern Asia. (Not definite).

Tasmania, southeast of Australia.

11. New York Bay, **Hudson Straight**, Atlantic Ocean, English Channel, Dover Strait, North Sea, Thames River, down the Thames, North Sea **Cattegat**, back **through North Sea**, Dover Strait, English Channel, Atlantic Ocean. (Partly wrong.)

Strait of Gibraltar, Mediterranean Sea, up the **Rhone River** and back again into Mediterranean Sea. (Partly wrong).

Suez Canal, Red Sea, Strait of Babel Mandeb, Indian Ocean, Arabian Gulf, Indian Ocean, Bay of Bengal, and south China Sea. (Not complete).

12. Of Germany—Berlin, on the Elbe River. (Not correct).

Of France—Paris, on the Seine River.

Capital of Italy is Rome, on the Poe River. (Not correct).

Austro-Hungary. (No answer).

Russia—St. Petersburg is the capital, west of the central part, on the Baltic Sea.

Sweden. (No answer).

13. Liverpool, in western part of Eng., on the Irish Sea. (Not exact).

Birmingham, in the south central part of Eng.

New Castle, eastern part of Eng., on North Sea. (Not correct).

Portsmouth, in the eastern part of Eng., on Irish Sea (sea-port). (Wrong).

14. Rises in **Green Mts. of New Hampshire**, flows south, forming the boundary between New Hampshire and Vermont, through Connecticut and Massachusetts, and empties into Long Island Sound. (Not exact).

15. Harrisburg, in Penn., on Susquehanna River; Annapolis, in Maryland, on Chesapeake Bay; Buffalo, in New York, on Lake Erie: Concord, in New Hampshire, on the Merrimac River.

New Haven, Conn., on **Connecticut River**; (wrong.) Knoxville, Tenn., on the **Cumberland** (wrong) River; Boisé City, Idaho, in the **southern** part of Idaho. (Not exact.)

16. St. Paul, Minn.; Cheyenne, Boisé City, Idaho, and Tacoma, Wash. Ter. (Very indefinite).

St. Louis, Ogden, Utah, San Francisco, Cal.

17. Cascade Mts. are near the Pacific Ocean, forming part of **southern ranges** of the Cordilleras in the U. S. They are east of Coast Mts. and west of the Rockies; Wahsatch trend north and south in Utah; Blue Ridge, Apalachian system, trend from northeast to southwest through Penn., Maryland, Va., and W. Va. (Not correct).

**Bitter Root Mts. in Wyoming**, White Mts. in New Hampshire. (Wrong).

18. Champlain, between New England States and New York. (Not definite).

Yellowstone Lake in Wyoming; **Chatauqua, eastern part U. S.: Tahoe.** (No answer).

19. Idaho, on north, Dominion of Canada, Montana and Wyoming, on east by Montana and Wyoming, south by Utah, and on the west by Oregon and Washington. New Mexico, N. by Colorado, E. by Indian Ter., and Texas, south by Texas and Mexico, and on the west by Arizona. Iowa, N. by Minnesota, E. by Wis. and Ill., S. by Missouri, and on W. by **Kansas** and Nebraska. (Not perfect).

Ohio, N. by Lake Erie and **Dominion of Canada**, E. by Penn. and West Virginia, S. by W. Virginia and Kentucky, W. by Indiana. (Not perfect).

Tennessee, N. by Kentucky and Va., E. by N. Carolina, S. by N. Carolina, Georgia, Alabama, Mississippi, and on the west by Missouri and Arkansas.

New Hampshire, N. by Maine and Dom. of Canada, E. by Maine and Atlantic Ocean, S. by Mass., and W. by Vermont.

20. North, Maine, New Hampshire, **Mass.**, **Conn.**, New Y., Penn. (one corner of), Ohio, Mich., Wisconsin, Minnesota, Dakota, Montana, Washington. (Not perfect).

On the south are Florida, Alabama, Mississippi, Louisiana, Texas, New Mexico, Arizona, and California.

21. **Idaho**, Montana, Wyoming, Dakota, **Minnesota**, Missouri, Kansas, Nebraska. (Not perfect).

22. Nantucket, on Nantucket Is. near **R. I.**; Cape Henry, at mouth of Chesapeake Bay; San Diego, in southern part of California; Corpus Christi, in Texas, on the Gulf of Mexico, southwest of central part of Texas.

Montauk Pt. (No answer).

23. Through Alabama, Tennessee, Kentucky, Indiana, and Mich.

COPY OF POOREST EXAMINATION PAPER IN GEOGRAPHY SUBMITTED.

1. For the purpose of telling the whereabout of places on the earth. (Not full).

2. Int. Continents, islands, peninsulas, isthmuses, land and water. (Imperfect).

3. Comorin, southern Asia, **east of U. S.**, western U. S. in California, south of Australia. (Two answers ommitted).

4. Hudson St., between Baffinland and North America. (Two answers ommitted).

5. **Kewateen**, Brit. Columbia, Quebec, Ontario, New Brunswick. (Not full).

6. Venezuela, U. S. Colombia, Peru, Bolivia, Ecuador, Chili, Patagonia, Brazil, Paraguay, Uruguay, Argentine Republic. (Not perfect).

7. Egypt, Abyssinia, Soudan.

8. Germany, France, Belgium, Austria, Italy, Russia, Portugal, Norway, Sweden, Switzerland, Spain, Holland. Spain is bounded on the north by France, Atlantic Ocean, east by Mediterranean Sea, south by Mediterranean, and west by Portugal. (Incomplete).

9. Ural, **between Asia and**; **In western Europe**; **In Spain, in Germany**; **In Germany.** (All wrong.)

10. South **east of China. Azores are northeast of Africa, south of Asia,** southeast of United States. (Very bad).

**Ceylon, south of Europe.** (Very bad).

**Tasmania, east of Australia.** (Very bad).

11. Red Sea, Atlantic Ocean, English Channel. (Very incomplete).

Carribean Sea, Gulf of Bengal.

12. Paris, on the Seine; **Constantinople, on the Mediterranean coast**, Sweden, **Christina on the Skagerack**; Vienna, central part; Russia, St. Petersburg. (Bad).

13. Liverpool, in **eastern** part; **Birmingham, southern** coast; northern part. (Very bad).

**Portsmouth, northeastern part.**

14. **Vermont** flows between Vermont and New Hampshire. (Not full).

Flows south and east into the Atlantic Ocean.

15. Harrisburg, Penn., in southeastern part; Annapolis in Maryland. (Too general.)

Buffalo, New York, on Lake Erie.

**Concord, Mass.**, near the coast. (Wrong.)

New Haven, **Conn., eastern part.** (Not exact.)

Knoxville, Tenn., **central part.** (Incorrect.)

**Boisé City, Dakota**, near Missouri River. (Wrong.)

16. **St. Louis, Chicago**, San Francisco, Denver, Kansas City, Salt Lake City. (Incorrect.)

17. Cascade, in California; **Kentucky**; Blue Ridge, in Virginia; **Maryland**; West **Virginia**. (Not definite.)
**White Mts. in California.**
Bitter Root Mts., in Montana.
18. Champlain, northern New York. (Indefinite.)
**Chataqua, in Maine.** (Wrong.)
Yellowstone Lake, in Montana. (Wrong.)
19. Idaho, N. **Canada, S.** Utah, E. Montana, W. Oregon, Washington, New Mex., **Arizona, Nevada, on the north**; Texas **and Arkansas on the east**; Mexico on the south; **California on west**; Iowa on the north by Minnesota, on the east by Ill., **Kentucky and Tenn. on south**, by south by **Missouri** on the west by Nebraska. (Not complete; very bad.)
Ohio, north, New York and Lake Erie; south, Kentucky; east, **by New York**; west, **Ill.**; Tenn., north, Kentucky; south, Ga., Ala., Miss.; east, West Va., N. Carolina; west, **Miss. River** and Missouri. (Very bad.)
N. H., north, Canada; **south, Conn.** (Very bad.)
**East, Vermont; west, New York.**
20. Washington Ter., Idaho, Montana, Dakota, Minnesota, Michigan, Vermont, N. Hampshire, Maine; south, California, New Mexico, Texas, Louisiana, Alabama, Florida. (Incomplete.)
21. Dakota, Missouri, part of Wyoming, Colorado. (Incomplete.)
22. **East of Connecticut**, Cape Henry east of Virginia. (These answers omitted.)
23. Tennessee, Kentucky, Ohio. (Slight errors.)

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[No. —, June 17, 1889.]

COPY OF POOREST EXAMINATION PAPER IN HISTORY SUBMITTED BY ANY CANDIDATE WHO PASSED.

[Errors are indicated by heavy-faced type.]

*Examination in history.* (*Time allotted, three hours.*)

[Write your answers as legibly and concisely as possible, without omitting important or material facts.]

1. What was the oldest permanent settlement made in the United States by each of the following named European states? Give the date in each case. (*a*) Spain.—Ans. St. Augustine; 1565. (*b*) Holland.—Ans. New Netherlands, 1613. (*c*) England.—Ans. Jamestown; 1607.
2. By what European nation were the Atlantic States chiefly colonized?—Ans. England.
3. By what European nation were the Lake region and Mississippi Valley explored?—Ans. French.
4. By what European nation were the Pacific States first colonized and settled?—Ans. Spaniards.
5. Name the thirteen colonies in the order of their settlement. Indicate those which were settled for religious reasons and those which became royal colonies before the Revolution.

| Name of colony in order of settlement. | Was it settled for religious reasons? Yes or no. | Did it become a royal colony? Yes or no. |
|---|---|---|
| 1. Virginia | No | Yes. |
| 2. New York | No | Yes. |
| 3. Massachusetts | Yes | Yes. |
| 4. Rhode Island | Yes | Yes (royal charter). |
| 5. North Carilino | No | Yes. |
| 6. Delaware | No | Yes. |
| 7. Maryland | Yes | Yes. |
| 8. South Carilino | No | Yes. |
| 9. New Jersey | No | Yes. |
| 10. Pennsylvania | Yes | No. |
| 11. Connecticut | Yes | Yes (royal charter). |
| 12. Vermont | Yes | Yes. |
| 13. New Hampshire [Order wrong.] | Yes | Yes. |

6. What part was taken in the American Revolution by each of the following named individuals: (*a*) Charles Lee.—Ans. Acted as a general, and is now supposed to have intended to betray the army under his charge into British hands. (*b*) Robert Morris. [No answer.] (*c*) Anthony Wayne.—Ans. General Wayne, commonly known as Mad Anthony, was noted for his daring. (*d*) Paul Jones.—Ans. Commander of the Bon Homme Richard. He was a terror to the English navy.

7. With what military event of the Revolution did hostilities practically cease?—Ans. Surrender of Cornwallis at Yorktown.

8. When and where was the treaty of peace signed after the American Revolution?—Ans. At Paris, **October 13**, 1783.

9. What were the territorial limits of the United States as determined by the above treaty?—North.—Ans. Great Lakes and St. Lawrence River, or **47** degree of lattitude. South.—Ans. Florida and Gulf of Mexico, or **36** degree of lattitude. East.—Ans. Atlantic Ocean. West. Ans. Great Lakes, **Ohio River** and Mississippi River, or **Pacific Ocean.**

10. Name the first and last acquisitions of territory that have been made by the United States since the above treaty.—Ans. Louisiana was the first; Alaska was the last.

11. What was the Northwest Territory, and what States have been formed from it?—Ans. **A tract of land between the Mississippi and Ohio river on the east and the Pacific Ocean on the west. Arkansas, Kansas, Missouri, Minnesota Oregon, New Mexico, Arizona, California, Idaho, Iowa,** Ohio, Indiana, Illinois. Michigan, Wisconsin, **Montana, Colorado.**

12. When did the Mexican War begin and end?—Ans. During Polk's administration, **1845** to **1847.**

13. When were the following States admitted to the Union? Indicate which were slave and which were free?

1. Tennessee.—Ans. **1836**, slave.
2. Ohio.—Ans. **1824**, free.
3. Oregon.—Ans. **1881**, free.
4. Louisiana.—Ans. **1824**, slave.
5. Minnesota.—Ans. **1825**, free.
6. Missouri.—Ans. **Both**; Compromise, 1822.

14. Give the names of two persons who have been prominent as explorers of the western territory of the United States.—Ans. Clark and Lewis.

15. What acquisition of territory preceded the war with Mexico?—Ans. The Northwestern Territory, Texas, Louisiana, Florida.

16. What Vice-Presidents have become Presidents? Name the predecessor in each case?—Ans. Harrison—Tyler; Taylor—Fillmore; Lincoln—Johnson; Garfield—Arthur.

17. When did the government under the present Constitution go into effect?—Ans. April 30, 1789.

18. Into what branches is the Government of the United States divided?—Ans. **National, Civil,** and **Political.**

19. How many amendments have been made to the Constitution since its adoption?—Ans. Fifteen.

20. How many were added before and how many after the civil war?—Ans. Twelve before and three after.

21. What text-book have you studied on the subject of United States history?—Ans. Swinton's.

[No.—, June 17, 1889.]

COPY OF POOREST EXAMINATION PAPER IN HISTORY SUBMITTED.

[Errors indicated by heavy-faced type.]

*Examination in history.* (*Time allotted, three hours.*)

[Write your answers as legibly and concisely as possible, without omitting important or material facts.]

1. What was the oldest permanent settlement made in the United States by each of the following named European states? Give the date in each case. (*a*) Spain.—Ans. St. Augustine, in 1565. (*b*) Holland.—Ans. New York, **1636.** (*c*) England.—Ans. Jamestown, Va., 1607.

2. By what European nation were the Atlantic States chiefly colonized?—Ans. English.

3. By what European nation were the Lake Region and Mississippi Valley explored?—Ans. French.

4. By what European nation were the Pacific States first colonized and settled?—Ans. Spanish.

5. Name the thirteen colonies in the order of their settlement. Indicate those settled for religious reasons and those which became royal colonies before the revolution.

| Name of colony in order of settlement. | Was it settled for religious reasons? Yes or no. | Did it become a royal colony? Yes or no. |
|---|---|---|
| 1. Virginia | No | Yes. |
| 2. New Hampshire | No | Yes. |
| 3. Rhode Island | Yes | Yes (royal charter). |
| 4. Massachusetts | Yes | Yes. |
| 5. Pennsylvania | Yes | Yes. |
| 6. Maryland | Yes | Yes. |
| 7. Delaware | No | No. |
| 8. New York | No | Yes. |
| 9. North Carolina | No | Yes. |
| 10. South Carolina | No | No. |
| 11. Georgia | Yes | No. |
| 12. Connecticut | No | No (royal charter). |
| 13. New Jersey [Order wrong.] | No | No. |

6. What part was taken in the American Revolution by each of the following named individuals? (*a*) Charles Lee. [**No answer.**] (*b*) Robert Morris. [**No answer.**] (*c*) Anthony Wayne.—Ans. Captured Stony Point. (*d*) Paul Jones.—Ans. He first gave breeze to the American flag; **captured the Bon Homme Richard, an English ship in the Revolution.**

7. With what military event of the Revolution did hostilities practically cease?—Ans. The surrender of Cornwallis at Yorktown, Va., in 1781.

8. When and where was the Treaty of Peace signed after the American Revolution?—Ans. At Paris, in 1783.

9. What were the territorial limits of the United States, as determined by the above treaty?—North.—Ans. To St. Lawrence River [**incomplete**]. South.—Ans. To Gulf of Mexico [**incomplete**]. East.—To the Atlantic Ocean. West.—To the Mississippi River.

10. Name the first and last acquisitions of territory that have been made by the United States since the above treaty.—Ans. **Northwest Territory; and the last was the land between the Rio Grande and the Gila River.**

11. What was the Northwest Territory, and what States have been formed from it?—Ans. **The land lying between the Pacific Miss. River and Canada, Oregon, Colorado, Washington, Montana, California.**

12. When did the Mexican war begin and end?—Ans. **In 1812; ended in 1814.**

13. When were the following States admitted to the Union? Indicate which were slave States and which were free:

1. Tennessee.—Ans. **1819.** Slave.
2. Ohio.—Ans. **1836.** [**No answer.**]
3. Oregon.—Ans. **1881.** [**No answer.**]
4. Louisiana.—Ans. **1791.** Slave.
5. Minnesota.—Ans. **1837.** Free.
6. Missouri.—Ans. **1850.** Free.

14. Give the names of two persons who have been prominent as explorers of the western territory of the United States.—Ans. **De Soto discovered and explored the Mississippi River in 1541. Daniel Boone.**

15. What acquisition of territory preceded the war with Mexico?—Ans. **Of California and** Texas.

16. What Vice-Presidents have become Presidents? Name the predecessor in each case.—Ans. **Auther,** Garfield; Johnson, Lincoln; **Fillmore, Taylor; Tyler** [omitted].

17. When did the Government, under the present Constitution, go into effect?—Ans. **1784.**

18. Into what branches is the Government of the United States divided?—Ans. Executive, judicial, legislative.

19. How many amendments have been made to the Constitution since its adoption?—Ans. **Five.**

20. How many were added before, and how many after the civil war?—Ans. Three after the war; **two before.**

21. What text-book have you studied on the subject of United States history?—Ans. Barnes.

[No. —, June 18, 1889.]

COPY OF POOREST EXAMINATION PAPER IN ARITHMETIC SUBMITTED BY ANY CANDIDATE WHO PASSED.

*Examination in arithmetic (time allotted, three and one-half hours).*

1. What vulgar fraction is equal to the sum of 14.4 and 1.44 divided by their difference?
2. What is the effect in a given decimal of moving the decimal point three places of figures to the right? Why?
3. A tub is filled by a pipe in 40 minutes and is emptied by a waste-pipe in an hour. How long will it take to fill the tub if both pipes are opened?
4. Find the cost of 145 A. 1 R. 32 P. at £10 5*s.* 3*d.* per acre.
5. Divide the least common multiple of $2\frac{4}{7}$, $3\frac{5}{7}$, $3\frac{33}{49}$, and $3\frac{15}{91}$ by their greatest common divisor.
6. If 54.32 cu. in. of gold weigh the same as 101.36 cu. in. of silver, how many oz. will a piece of silver weigh which equals in volume $226\frac{1}{4}$ oz. of gold?
7. The difference between two numbers is $477\frac{2}{15}$, and one of them is to the other as $\frac{3}{7}$ of $2\frac{3}{8}$ of 1.53 is to $5\frac{11}{13}$ of $4\frac{1}{4}$. Find the two numbers.
8. If 44 cannon firing 30 rounds an hr. for 3 hrs. a day consume 300 barrels of powder in 5 days, how long will 400 barrels last 66 cannon firing 40 rounds an hr. for 5 hrs. a day?
9. Five men engage to do a piece of work in 84 days, but 3 of them do, respectively, $\frac{1}{6}$, $\frac{1}{7}$, and $\frac{1}{9}$ less than an average day's work, and two of them do $\frac{1}{3}$ and $\frac{1}{10}$ more. In order to complete the work 17 additional men are employed for the 84th day. How much more or less than an average day's work is required of each of the 17 men?

1.

```
 14.4   14.4
  1.44   1.44
 12.96)15.8400(1.22
       12 96
        2 880
        2 592
          2880
          2592
           288
```

1.2.—Ans.

[Not reduced to a vulgar fraction.]

---

2. It makes 3 whole digits; if they are significant figures the whole no. will be in hundreds, and it decreases the denominator 100 times, since the denom. is equal to 1 with as many figures annexed as there are decimal places in the fraction.

[Fact and reason both unsatisfactory. It multiplies by 1,000 because it divides the denominator by that number.]

---

3.

| | min | min. |
|---|---|---|
| 1st pipe fills tub in | 40; | $1=\frac{1}{40}$ full. |
| 2d pipe empties tub in 60; | then | $1=\frac{1}{60}$ |

$\frac{1}{40}-\frac{1}{60}=\frac{3-2}{120}=\frac{1}{120}$ = part that is full after 1 min. when both pipes are open.

[Correct.] $1\div\frac{1}{120}=120$ min. required, or 2 hrs.—Ans.

---

4.

| Acres. | R. | P. | £ | shil. | d. |
|---|---|---|---|---|---|
| 145 | 1 | 32 @ | 10 | 5 | 3 |

R. R. Acres.

$\frac{32}{40}=\frac{4}{5}$. $1\frac{4}{5}\div 4=\frac{9}{5}=\frac{9}{20}$

$3d.=\frac{1}{4}$ *shil.*

$5\frac{1}{4}$ *shil.* $=\frac{\frac{21}{4}}{\frac{40}{1}}=\frac{21}{80}$ £

$145\frac{9}{20}$ acres @ $10\frac{21}{80}$ £.

$\frac{2909}{20}\times\frac{821}{80}=\frac{2388289}{1600}$

1600)2388289(1492
1600
7882
6400
14828
14400
4289
3200
1089 × ~~20~~
~~1600~~
80)1089(13
80
289
240
49 × ~~12~~ 3
~~80~~
20)147($7\frac{7}{20}$
140
7

1492£ 13*shil.* $7\frac{7}{20}$*d.*—Ans.

[Correct.]

---

5.

$2\frac{4}{7}=\frac{18}{7}$
$3\frac{6}{7}=\frac{27}{7}$
$3\frac{33}{49}=\frac{180}{49}$
$3\frac{15}{91}=\frac{288}{91}$

L. C. M. $=\frac{4320}{7}$

G. C. D. $\frac{9}{91\times 7}=\frac{9}{637}$

9)18, 27, 180, 288
2)2, 3, 20, 32
2) 3, 10, 16
3, 5, 8

12×9=108
40
4320

$\frac{480}{\cancel{4320}}\times\frac{91}{\cancel{637}}=480\times 91=43680.$—Ans.

91
480
4320
43680

[Correct.]

---

6.

| Cu. in. G. | | Cu. in. Silver. | | Oz. G. | | Oz. S. |
|---|---|---|---|---|---|---|
| 54.32 | : | 101.36 | :: | $264\frac{1}{4}$ | : | ( ) |

$\frac{1}{54.32}\times 101.36\times 226\frac{1}{4}=$

$\frac{101.36\times 264\frac{1}{4}}{54.32}=422.17$ oz. silver.—Ans.

Ratio inverted. Incorrect result.

$101.36 : 54.32 :: 226\frac{1}{4} : x$
$x=121\frac{1}{4}$—Ans.]

---

7. [Nothing done.]

8.

| Cannon. | | Cannon. | | | | |
|---|---|---|---|---|---|---|
| 44 | | 66 | | | | |
| *Rds.* | | | | *Bbl.* | | *Bbl.* |
| 30 | : | 40 | :: | 300 | : | 400 |
| *40 | | *66 | | | | |
| *hrs.* | | | | | | |
| 3 | | 5 | | | | |
| *das.* | | | | | | |
| 5 | | (?) | | | | |

$$44\times\frac{30}{40}\times3\times5\times400\times\frac{1}{66}\times\frac{66}{40}\times\frac{1}{5}\times\frac{1}{300}=3 \text{ hrs.—Ans.}$$

[Compound proportion correct except in the two indicated terms, which should have been left out. Result incorrect.]

---

9.

1st man loses $\frac{1}{6}$ sum.

2d $\frac{1}{7}$ $\qquad \frac{53}{126}$=loss of average work per da. by 3 men.

3d $\frac{1}{9}$

$\frac{1}{8}, \frac{5}{40}$ $\qquad =\frac{9}{40}$ gain per da. by 2 men.

$\frac{1}{10}, \frac{4}{40}$

$\frac{53}{126}$ $\frac{1060}{2520}$

$-\frac{9}{40}$ $\frac{567}{2520}$ $\qquad =\frac{493}{2520}$=loss per 84 da. $=84\times\frac{493}{2520}=\frac{493}{30}$ parts loss.

$\frac{493}{30}\times\frac{1}{17}=\frac{29}{30}$

$\frac{30}{30}-\frac{29}{30}=\frac{1}{30}$ less than an average das. work is required of each the 17 men.

$\frac{1}{30}$ less.—Ans.

[Correct.]

State the text-books on this subject you have studied.—Sanford's and Robinson's.

[No. —. June 18, 1889.]

COPY OF POOREST EXAMINATION PAPER IN ARITHMETIC SUBMITTED.

1.

14.4
1.44
12.96

$2\,|\,\frac{96}{100}=\frac{24}{25}$

14.4
1.44
15.84

$4\,|\,\frac{84}{100}=\frac{21}{25}$

$12\frac{24}{25}$ $\qquad 15\frac{21}{25}$

$\frac{12}{25}$ $\qquad \frac{15}{25}$

$\frac{60}{24}$ $\qquad \frac{75}{30}$

$\frac{24}{324}$ $\qquad \frac{21}{396}$

$\frac{324}{25}$ $\qquad \frac{396}{25}$

$\frac{396}{25}\div\frac{324}{25}=\frac{\cancel{396}^{\,11\,\cancel{99}}}{\cancel{25}}\times\frac{\cancel{25}}{\cancel{324}_{\,\cancel{81}\,9}}=\frac{11}{9}$ )11 $1\frac{2}{9}$ $\qquad$ Ans. $1\frac{2}{9}$

[Correct.]

2. By moving the decimal point three places to the right, you increase the value of the decimal one thousand times.

Because every figure added to the left of the decimal point and between the preceding figures increases its value ten times.

[Fact correct, but reason not stated correctly.]

---

3.

```
60        2)20      40      60
40          10      10      10
20          10      50      50
                  Ans. 50 min.
```

[All wrong.]

---

4.

```
                  40   8
          A.      R.   P.          £.  20 s.  12 d.
         145      1   32          10   5    3
         ~~40~~    4                20
        ~~5800~~   5               200
          ~~1~~                     5
        ~~5801~~                   205
                                    12
                                   410
                                 205 3*                12)3034999⅛
                                20913                   )252916 57/96 d.
                                                         12145=17 s.
          A.   40
         145   R.
         145   5 = ⅛
         145⅛†
       20913
       ------                    57/8 × 1/12 = 57/96
          435
          145
         1305                 1/8 × 20913 = 8)20913
        290                                   2614⅛
          2614⅛
      3034999⅛                                        £      s.   d.
                                          Ans.—12145    17   57/96
```

[Incorrect result.]

* Error in multiplication. † Error in reduction to acres.

---

5.

```
18     27     180    288
)7     7      49     91
1      1      7      13
```

L. C. M. = 637
G. C. D. = 7

```
7)637
  91 = 91—Ans.
```

[Method incorrect.]

---

6. [Work all erased—nothing correct.]

---

7. $477\frac{2}{11}$ $\frac{3}{7}$ of $2\frac{2}{5}$ of $1.53 = 1.503$

$5\frac{11}{13}$ of $4\frac{1}{4} = 24\frac{11}{13}$

[Fractions only multiplied together, solution of problem not attempted.]

---

8.

```
44  cannon.                    66
 30 rounds.                     40
1320 rounds per hour.          2640 = 1320 × 2 = 40 bbl pr. hour.
300 bbl.     15 hrs.
 15)300(20 bbl. 1 hr.          40)400(10 hrs.
    30                            40
     0                             0
                                5)10
                                  2 = 2 days.—Ans.
```

[Solution of problem not satisfactory.]

---

9. [Nothing done.]

State the text-books on this subject you have studied.—Greenleaf and Robinson.

The Board confidently submits these lists of questions as a full, complete, and satisfactory reply to and refutation of all claims that the tests for admission to the Military Academy, where successful candidates are educated at the expense of the Government, are too exacting. Just as the service requires the best and soundest bodies to train and develop in order that they may endure the strain of active service, perhaps under the most exacting physical conditions, so should the accomplished and experienced officers, who are responsible for best results in the Academy, require that reasonable and proper preparation which alone will enable a cadet to finish his course with credit to himself and honor to the institution. The writer of this report said to the professor of mathematics that "while one or two of the questions in his department are somewhat exacting, they are not unreasonably so." The reply was, "Certainly; no one should expect the United States to maintain such an institution as this to teach arithmetic. That initial work in arithmetic represented by this paper must be clear to a young man before he is ready to advance through the course of study."

The surgeons do not require a candidate to lift a specified weight or to run at a given rate as tests for admission. They simply inspect the body submitted to them, and then leave the gymnasium to develop muscle and teach agility. So, the academic examiners search for intellectual material, and test the degree to which the candidate has been prepared for future development in a course of study which should be attempted by the competent alone. Some of the candidates responded to the tests in fine style and they will prove to be the future successful cadets. We are sure that "the poorest papers submitted by candidates who passed" prove the reasonableness of the preliminary trials, while "the poorest papers submitted"—presumably by those who did not pass—prove that their writers were not entitled to pass.

It is proper to say that no member of this Board knows to whom the respective papers in the foregoing list belong. They were copied by our request, and whatever of the confidential appertains to them remains in possession of the Academic Board.

As to the course of study itself, in the Military Academy, we believe that it is not too severe, if the cadet has had proper preliminary training. That training should avail to teach the candidate the use of tools, for, after all, books are but the students' tools. He goes to the Academy to study, and his preparations to enter should have taught him how to study—the art of using the tools necessary to build up his work during the four years of earnest application, before he can be entitled to his diploma and a commission. The cadet is to be an officer and a possible leader of the nation's armies. Few officers decline to be promoted, and the exigencies of future service may place any cadet where, by legitimate advance by seniority, he will be entitled to the highest command. Some one is credited with the remark that he "seldom wants a gun, but when he does want one, he wants it dreadfully, and a good one at that." The Republic may not require a leader in the field for many years, and we hope it may never need one. Should one be needed, he ought to be one of the very best. On that theory the Government prefers to educate its own officers, and in the exercise of that right among those who voluntarily accept the Government's training, on terms that do not cost the student one dollar, it is but reasonable that the cadet shall be molded to the Government's own will and requirements. If the cadet is not willing to accept the conditions he has liberty to retire. The question of justice is solved in the light of the

fact that the conditions and requirements are shaped by actual experience in training officers, extending through nearly a century.

This Board of Visitors has seen the completed product in the graduating cadet, and, representatively, has seen also the raw, physically shambling, and often unpromising, new material. The intermediate classes suggest the progressive stages of development; and, what with the recitations, many of which were witnessed in the ordinary routine of cadet life before the public exercises began, and, moreover, what with repeated study of the drills and the evolutions at parade and guard-mounting, we have tried to do thorough inspection. As a result, we express our confidence in the aims, methods, and fruits of the work done at West Point. Our examinations have extended to repeated sharing with the battalion its fare at the mess hall, and sleeping many nights in the cadet barracks. It was our aim to see the cadet while pursuing his ordinary duties, and to catch the spirit of his average life. This has involved visits to the cadet's *habitat*, and observation of the military student at study, at recitation, at drill, at parade, at guard-mounting, at reveille, at taps, at meals, at play and recreation, in line of battle, in his *con amore* efforts to shade his lady friend beneath her own parasol while yet trying not to get "off limits" by standing beneath that same parasol, in chapel and in prayer meeting, and indeed in all possible relations where he has proved himself a man while seeking to become an officer. As a general result, we approve, congratulate, and are proud of him. The Academy is doing its work well, and deserves to stand close to the hearts of the people, who ought to know more about it.

Allusion has been made in this report to "setting up" candidates, which process begins immediately after they have passed their academic examinations. The exercises were devised by Mr. Herman J. Koehler, master of the sword in the Academy, and superintendent in the gymnasium. The results of this setting up are noticeable immediately. Those of the Board who remained to observe the whole procedure of initiating the cadet-candidate were much impressed with the devices to give a young man a graceful carriage. It would be well were the exercises in use in every school and family in the nation. They are applicable to all, girls as well as boys. The method, which accounts for the erect bearing of officers in the Army, is appended:

A SYSTEM OF CALISTHENIC EXERCISES, FOR USE IN SCHOOL OF THE SOLDIER, BY HERMAN J. KOEHLER, MASTER OF THE SWORD, INSTRUCTOR IN GYMNASTICS, ETC., U. S. MILITARY ACADEMY.

WEST POINT, N. Y., *October* 15, 1887.

SIR: I have the honor to submit, herewith, for your consideration, and such action as you may think proper, a system of "setting up" exercises for the soldier, devised by Mr. Herman J. Koehler, swordmaster of the U. S. Military Academy, an accomplished athlete and professional instructor of gymnastics and athletics. This system was especially prepared to meet the demand for a more general and varied physical training of the recruit than that provided for in the Tactics, and with an especial view to the accomplishing thereby a thorough and speedy "setting up" of the soldier.

This system of exercises has for its object, further, the strengthening and development of the muscles of the shoulders, chest, back, arms, loins, and legs of the soldier, assuring thereby a more perfect poise, a more erect carriage, and a more complete control over the muscles of the entire body, thereby accomplishing that military deportment so greatly to be desired in the soldier, and imparting a settled habit of always carrying the shoulders well back and squared, and the chest well thrown out.

These exercises are not recommended as a substitute for those prescribed in the Tactics, but are respectfully offered and recommended as a valuable addition there-

unto, both from their unquestionable efficacy in accomplishing the end aimed at, *i. e.* the "setting up" of the soldier, and from the fact of their adding a commendable variety to this most important phase of the education of the recruit in the school of the soldier. Moreover, the opinion has been advanced by competent authority that there is too much fatigue, and, if carried too far, possibility of positive injury to the soldier, in the continued exercise of the present prescribed "setting-up" exercises, owing to their lack of sufficient variety.

This proposed system of exercises has been thoroughly tried, both as a system of general gymnastic training and as a special system for "setting up" drill and military deportment in the soldier, and in both cases the results have been most satisfactory, and certainly recommend a careful consideration of its merits. This system of exercises was tried during the month of September with the new cadets just reported, and it is conscientiously believed that the influence of these movements in the "setting up" of these new cadets was evident.

It is firmly believed that with soldiers, and especially with men under twenty-five years of age, these exercises carefully and faithfully practiced, will produce in a comparatively short time a uniformity of deportment and erectness of carriage that can not fail to recommend them.

Fatigue must in all cases be avoided, and the effort to avoid the inevitable monotony of "squad drill" should be the constant study of the instructor. These two points are most important. It is suggested that instruction in these exercises begin with the least violent of them.

* * * * * * *

I have the honor to be, very respectfully, your obedient servant,

W. B. HOMER,
*First Lieutenant Fifth Artillery.*

The COMMANDANT OF CADETS.

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ARM EXERCISES.

I. *Exercise.*

*Arms forward—Raise.* At command *raise*, the arms are brought smartly to the front, height of shoulder, elbows straight, palms down, thumb under first finger, distance between hands and arms the same as width of chest. Plate I, Figure 1.

*Swing arms downward and backward—Exercise.*

1. Swing the arms downward and backward as far as possible. 2. Recover position, arms horizontally to the front. Arms remain stiffly extended. Plate I, Figure 2.

II. *Exercise.*

*Arms forward—Raise.* Same as position for I Exercise.

*Swing arms sideward and forward—Exercise.*

1. Swing arms sideward and backward as far as possible. 2. Recover position, arms horizontally to the front. Arms remain stiffly extended and in the horizontal position throughout the exercise. Plate II, Figures 1 and 2.

III. *Exercise.*

*Arms forward—Raise.* Same as position for Exercise I.

*Swing arms backward and bend trunk forward—Exercise.*

1. Lower the trunk by bending forward at hips until the body forms a right angle; at same time swing arms downward and backward. 2. Recover first position. Plate I, Figure 3.

IV. *Exercise.*

*Arms to thrust—Raise.* At command *raise*, the forearm is brought horizontally to the front and close to the body, elbows forced back, the hands are tightly closed, knuckles down and in line with the front of body. Plate III, Figure 1.

Fig. 1.

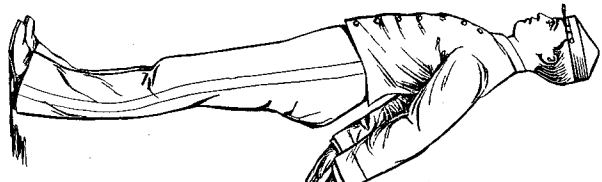
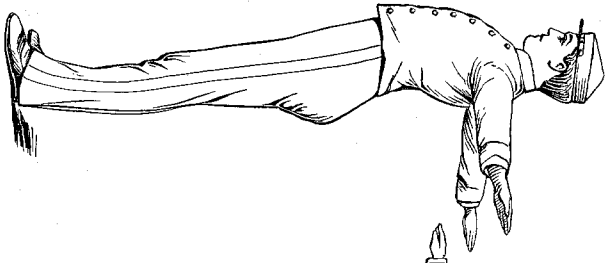


Fig. 2.

Fig. 3.



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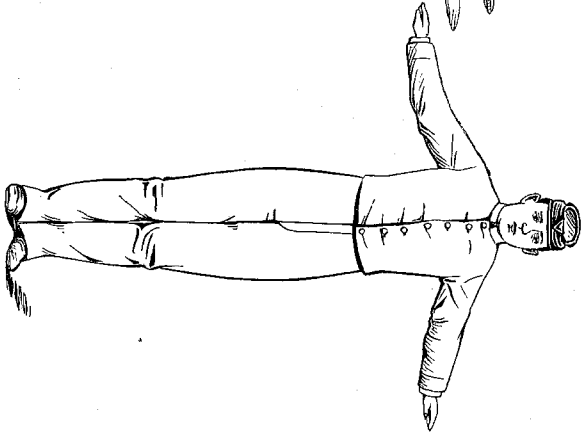


Fig. 2.

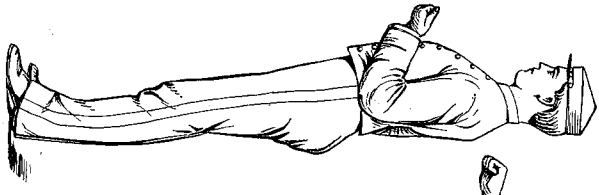


*Fig. 1.*

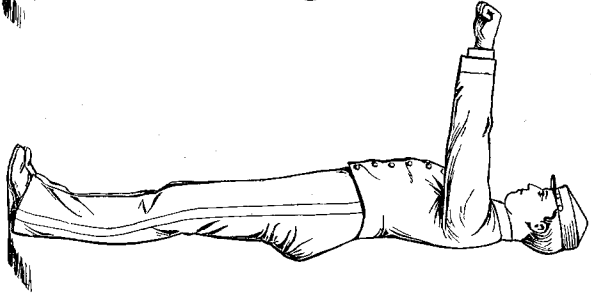


*Fig. 2.*

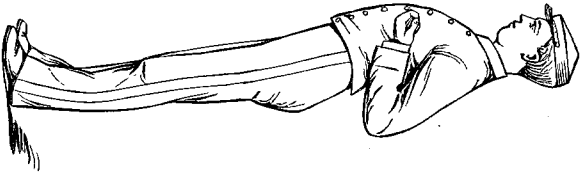
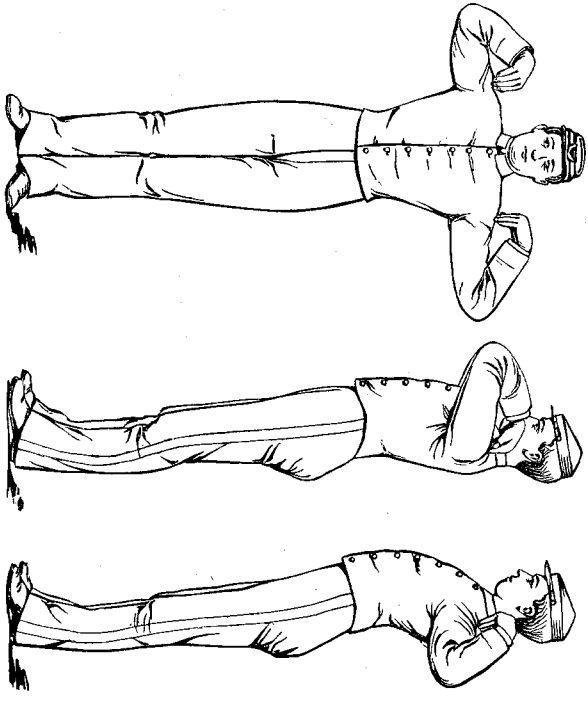


*Fig. 3.*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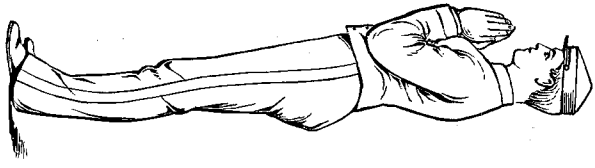


*Fig. 1.*

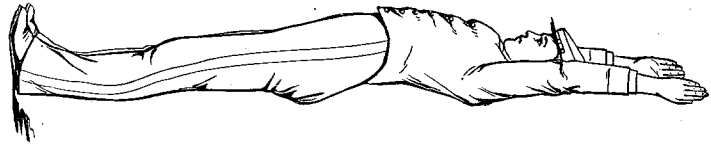


*Fig. 2.*

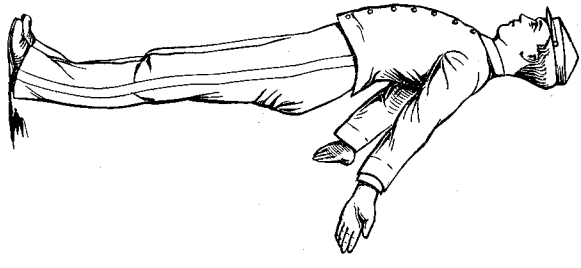


*Fig. 3.*

*Fig. 1.*

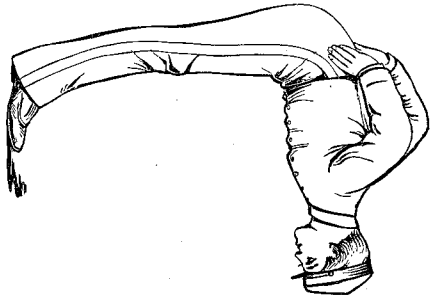


*Fig. 2.*

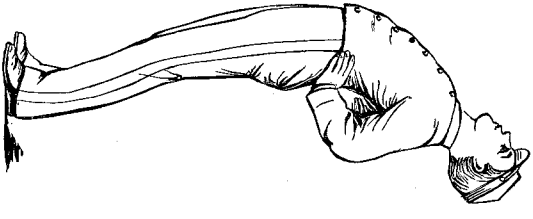


*Fig. 3.*

*Thrust arms forward—Exercise.*

1. Extend arms with force horizontally to the front, turning forearms so the knuckles are up at the finish of the movement. 2. Recover position pressing elbows and shoulders forcibly to the rear. Plate III, Figures 2 and 3.

V. *Exercise.*

*Hands on shoulders—Place.* At command *place,* raise forearms vertically to the front, then move elbows upward and outward, upper arms horizontally sideward, at the same time bend wrist and allow finger tips to rest lightly on shoulders. Elbows pressed back. Plate IV, Figure 1.

*Move elbows forward and backward—Exercise.*

1. Move elbows horizontally to the front; hands remain on shoulders. 2. Recover position by forcing elbows back as far as possible. Plate IV, Figures 2 and 3.

VI. *Exercise. Position of attention. Straighten arms upward and lower backward—Exercise.*

1. Raise forearm vertically to the front, without moving the upper arms, palms inward. 2. Straighten arms directly upward with force. 3. Lower arms pressing them backward as much as possible. Plate V, Figures 1, 2, and 3.

TRUNK EXERCISES.

I. *Exercise.*

*Hands on hips—Place.* At command *place,* raise the hands and place them on hips in such a manner that the thumbs are brought together in the small of the back, finger tips forward; the elbows pressed back. Plate VI.

*Bend trunk forward and recover—Exercise.*

1. Lower the trunk by bending forward at hips until the body forms a right angle. 2. Recover position. Knees remain stiff. Execute slowly. Plate VI, Figure 2.

II. *Exercise.*

*Hands on hips—Place.* Execute as in Exercise I of Trunk Exercises.

*Bend trunk backward—Exercise.*

1. Bend trunk backward slowly, keeping knees stiff and moving head with trunk. 2. Recover position, without swaying forward. Execute slowly. Plate VI, Figure 3.

III. *Exercise.*

*Hands on hips—Place.* Execute as in Exercise I of Trunk Exercises.

*Bend trunk forward and backward—Exercise.*

1. Bend forward as in Exercise I. 2. Bend backward from the forward position. Execute slowly.

IV. *Exercise.*

*Arms sideward—Raise.* Execute as in Exercise III, Arm Exercises.

*Bend sideward right (or left)—Exercise.*

1. Bend directly sideward, raising the left (or right) shoulder and lowering the right (or left) shoulder, without turning the trunk or raising the heel. 2. Recover position without swaying to the opposite side. Execute first movement slowly, second quickly. Move head and arms with the trunk.

V. *Exercise.*

*Arms sideward—Raise.* As in Arm Exercise, Exercise III.

*Bend trunk sideward right and left—Exercise.*

1. Bend to the right as in Exercise VI. 2. Execute same to the left, without pausing in position after the recovery. The trunk sways sideward from side to side. Arms, head, and feet as in Exercise IV. Execute slowly.

VI. *Exercise.*

*Hands on hips—Place.* As in Trunk Exercise, Exercise I.

*Circle trunk right (or left)—Exercise.*

1. Bend forward as in Exercise I. 2. Move sideward right (or left), position as in Exercise IV. 3. Bend backward as in Exercise II. 4. Move sideward left (or right) as in Two. 5. Bend forward again as at One. 6. Recover position. Thus the trunk describes a complete circle. Execute slowly. Knees, head, and feet as before. This exercise can also be executed to advantage without the numbers. When executed in this manner the recovery is omitted. The circling is continued until the command to discontinue is given.

LEG EXERCISES.

*Hands on hips—Place.* As in trunk exercise, Exercise I.

*Raise on toes—Exercise.*

1. Raise heels quickly until body rests on toe tips, knees stiff and heels together. 2. Lower back on heels, gently without jarring body. Plate VII, figure 1.

*II. Exercise.*

*Hands on hips—Place.* As in trunk exercise, Exercise I.

*Raise on toes and rock—Exercise.*

At command *exercise*, raise the body on toes as in Exercise I, execute a series of short, springy movements by raising and lowering the body from the balls of the feet to toe tips. The heels do not touch the ground during the movement. Knees stiffly extended.

*III. Exercise.*

*Hands on hips—Place.* As in trunk exercise, Exercise I.

*Bend knees, obtuse angle—Exercise.*

1. Lower the body by bending and separating the knees until the legs form an obtuse angle. 2. Extend the legs pressing the knees forcibly together. In executing this exercise the whole foot remains on the ground. The head and trunk are held erect. Plate VII, figure 2.

*IV. Exercise.*

*Hands on hips—Place.* As in trunk exercise, Exercise I.

*Bend knees, right angle—Exercise.*

1. As above until legs form a right angle. 2. Extend as above. In this exercise the heels are slightly raised when the knees are bent.

*V. Exercise.*

*Arms to thrust—Raise.* As in arm exercise, Exercise IV.

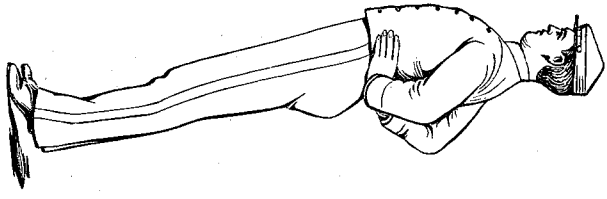
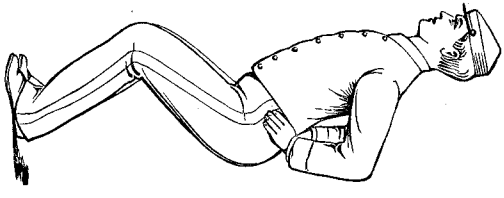


*Fig. 1.*



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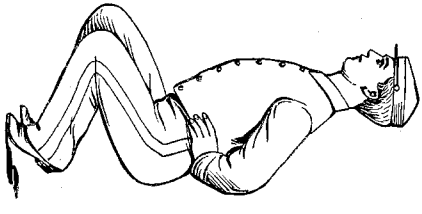


*Fig. 3.*

*Bend knees, acute angle—Exercise.*

1. As above, bending knees as much as possible; the heels are raised, the whole weight of the body resting entirely upon the balls of the feet. 2. Extend as before. Head and trunk as before. Plate VII, figure 3.

INSTRUCTIONS.

(1) It is advisable to count for the members of a squad while exercising. The number indicating the most forcible movement of the exercise is to be emphasized. If this rule is strictly observed good results will be obtained.

(2) To discontinue an exercise the command halt, given at the moment when the last movement of the exercise is begun, is given; when the position of the soldier is resumed.

Example: Arms to thrust—Raise. Thrust arms forward—Exercise. One, Two, One, Two, One, Halt.

(3) With beginners the arm exercises may be repeated from eight to ten times; those of the trunk and legs from six to eight times; gradually increase the number of times, until the soldier is able to repeat arm exercise from fourteen to sixteen times, and those of the trunk and legs from ten to twelve times.

(4) Allow the squad to rest after every exercise.

(5) While exercising one part of the body, care should be exercised that the other parts remain perfectly quiet. The soldier must learn to use each part of the body independently of the others, at least as much so as the construction of the body will allow.

Upon entrance to the gymnasium the cadet is accurately measured and tested. We append the average measurements of that class which in June last completed its first year of exercise in the gymnasium as well as first year in the Academy. We repeat expressions of our regret that after the first cadet year the gymnasium exercises are optional. They ought to continue at least three years. It should be remembered that the "fourth class" is the one farthest removed from graduation. The table alluded to is as follows:

*Physical tests and measurements of fourth class.*

| | Measurements. | | | | | | | | | Tests. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Height in inches. | Weight in pounds. | Wrist, inches. | Forearm, inches. | Upper arm. | | Chest. | | Waist, inches. | Horizontal bars, times. | Parallel bars, times. | Broad jump, feet. |
| | | | | | Natural. | Arm bent, muscles set. | Natural. | Inflated. | | | | |
| Average October, 1888 | 67.81 | 132.56 | 6.66 | 10.47 | 9.90 | 11.40 | 32.31 | 34.95 | 25.90 | 5.97 | 6.81 | 7.44 |
| Average May, 1889 | 68.29 | 138.40 | 6.86 | 10.99 | 10.74 | 12.29 | 34.35 | 36.82 | 25.57 | 9.59 | 10.88 | 8.12 |
| Average gains | **.48** | **5.84** | **.20** | **.52** | **.84** | **.89** | **2.04** | **1.87** | ***.33** | **3.62** | **4.07** | **.68** |
| Largest measurement, October | 72.20 | 164.00 | 7.25 | 11.75 | 12.00 | 14.00 | 36.25 | 39.50 | 28.75 | 15.00 | 20.00 | 8.70 |
| Largest measurement, May | 72.60 | 177.50 | 7.50 | 12.25 | 13.00 | 14.50 | 40.00 | 42.12 | 30.00 | 19.00 | 25.00 | 9.50 |
| Largest gains | 1.80 | 20.50 | .75 | 1.75 | 1.25 | 1.25 | 4.50 | 4.00 | 2.00 | 8.00 | 10.00 | 2.10 |
| Smallest measurement, October | 61.50 | 111.50 | 6.00 | 9.50 | 8.75 | 9.50 | 28.50 | 32.00 | 23.50 | .00 | .00 | 5.30 |
| Smallest measurement, May | 62.30 | 115.50 | 6.25 | 9.88 | 9.25 | 10.75 | 31.50 | 34.00 | 23.00 | 4.00 | 1.00 | 7.00 |
| Smallest gains | .10 | .50 | .12 | .12 | .25 | .25 | .50 | .25 | .25 | 1.00 | 1.00 | .10 |

* Loss.

† Hanging on bar, with arms extended, the body is drawn upward until chin is on level with the bar; then lower body until arms are again extended. The exercise to be repeated as often as possible.

‡ Resting on bar, with arms extended, bend arms (fore and upper arms forming angle of about 90 degrees), straighten arms. Repeat as above.

## MISCELLANEOUS.

This Board calls attention to the long and faithful services of Mr. Francis Newlands, who has been the disbursing officer and quartermaster's clerk at West Point since 1847. To his faithful services the Academy and the Government are greatly indebted. We heartily hope that it may be possible to retire Mr. Newlands with ample provision for his remaining days. We respectfully suggest to the War Department that this action would be but simple justice to an old, trustworthy servant. The same is true of Mr. William Ward, who has been in charge of cadet records in the adjutant's office since 1851. That important work has been continued since the death of his father, who held that place for fifteen years. We ask the same provision for the remaining days of Mr. Ward, and sincerely hope the appropriation will be made. Both these officers have done their work so perfectly that it has been the basis of many of the most valuable compilations of priceless facts relating to the Academy made from time to time for publication.

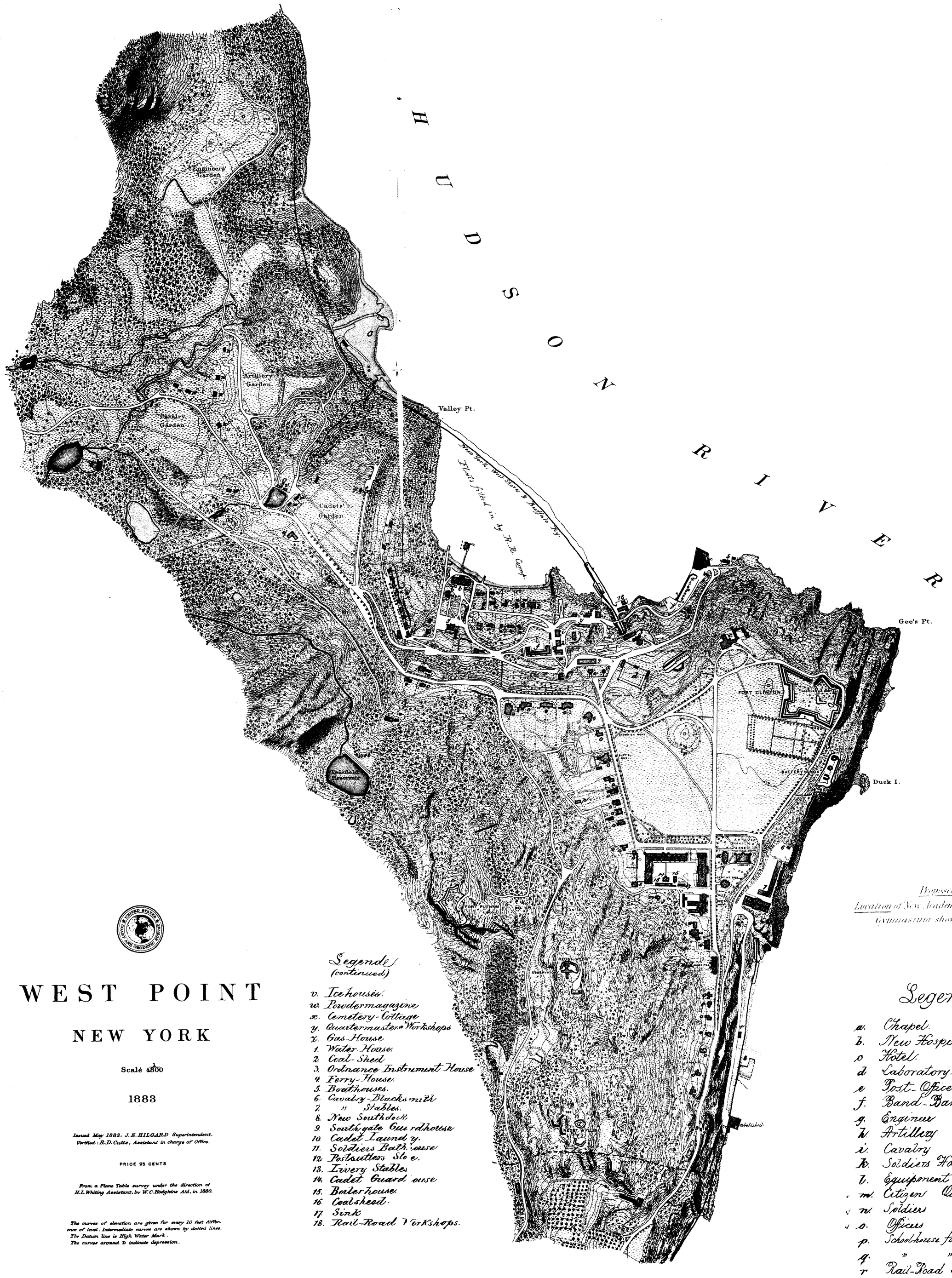
We heartily congratulate the Academy upon its representatives, the lieutenants who, from time to time, are detailed as instructors in colleges throughout the country wherein are military drills, and where some attention is paid to military studies. These details number about fifty, and the Board bears testimony to the high repute in which these officers are held both as teachers and gentlemen. We commend the matter to colleges and schools in general, and are sure that the results are valuable with respect to both the minds and bodies of students.

We note the fact that many officers, after they leave the Army, are attracted to teaching as a profession. Over two score of colleges owe their presidents, nearly as many high schools owe their principals, and more than one hundred schools owe some of their professors to the alumni lists of the Military Academy. These facts impressivley suggest how the walks of civil life are influenced by the West Point graduate.

While repeating our expressions of thanks to the officers at the Academy who have shown cordial personal, as well as courteous official, attentions to the Board of Visitors, we commend the Academy to the intelligent and sincere regard of the homes of the Republic. The Academy is not removed far from the people. In other lands soldiers are a distinct and almost privileged class who ask not, and care not for the citizen's love and esteem. There they are a part of the machinery of government, and the people, in some countries, are quite as apt to feel the prick of a bayonet as are their foes. Here, the American soldier is of the people, and for the people. Just as in extremity every American citizen is ready to become an unsurpassed soldier, so the soldier, and particularly the American officer, remains a citizen like unto the people out of whose homes he sprang but yesterday. The brotherhood remains, and we are all alike, save as to the clothes we wear, and the studies we prefer.

The United States Military Academy at West Point belongs to the people, and it deserves the love, admiration, and confidence of the people.

LEW. WALLACE.
ARTHUR EDWARDS.
LE ROY D. BROWN.
B. W. CHIDLAW.
NATHAN S. LINCOLN.
C. M. PINKERTON.
CHARLES KING.
CUSHMAN K. DAVIS.
JOHN W. DANIEL.
S. M. ROBERTSON.
S. S. YODER.




# WEST POINT

## NEW YORK

Scale $\frac{1}{4800}$

1883

*Issued May 1883, J. E. HILGARD Superintendent.*
*Verified: R. D. Cutts, Assistant in charge of Office.*

PRICE 25 CENTS

*From a Plane Table survey under the direction of H. L. Whiting Assistant, by W. C. Hodgkins Aid, in 1880.*

*The curves of elevation are given for every 10 feet difference of level. Intermediate curves are shown by dotted lines. The Datum line is High Water Mark. The curves around D indicate depression.*

Meters

Statute Mile

## Legende (continued)

v. Ice houses.
w. Powder magazine
x. Cemetery-Cottage
y. Quartermaster's Workshops
z. Gas-House
1. Water House.
2. Coal-Shed
3. Ordnance Instrument House
4. Ferry-House.
5. Boathouses.
6. Cavalry-Blacksmith
7. " Stables.
8. New Southdock
9. Southgate Guardhouse
10. Cadet Laundry.
11. Soldiers Bath House
12. Postsutlers Store.
13. Livery Stables
14. Cadet Guard house
15. Boiler house.
16. Coalshed.
17. Sink
18. Rail-Road Workshops.

## Legend.

a. Chapel.
b. New Hospital.
c. Hotel.
d. Laboratory.
e. Post-Office.
f. Band-Barracks
g. Engineer "
h. Artillery "
i. Cavalry "
k. Soldiers Hospital
l. Equipment shed & Commissary
m. Citizen Quarters.
n. Soldiers "
o. Officers "
p. Schoolhouse for Officers Children
q. " " Soldiers "
r. Rail-Road Station
s. Commissary of Cadets.
t. Post Guardhouse.
u. Quartermasters Storehouse

73°57'30"

Engraved from the Original Sheet by H. C. Evans. Title and Lettering by E. A. Mordal.