

ANNUAL REPORT

OF THE

SUPERINTENDENT

OF THE

UNITED STATES MILITARY ACADEMY.

1903.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

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HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 12, 1903.

SIR: I have the honor to submit the following report for the Military Academy for the year ending August 31, 1903:

I have performed the duties of Superintendent throughout the year, except for leaves of absence from January 9-16, July 14-21, and August 21-28, 1903, and for other short periods of time when absent in connection with the affairs of the academy.

PERSONNEL.

The number of officers and instructors assigned to duty here September 1, 1903, was 7 professors, 2 associate professors, 76 commissioned officers, 1 librarian, 1 chaplain, 1 contract dental surgeon, and 1 teacher of music, a total of 89. In addition, 2 officers were temporarily attached pending orders relieving them and changing their station.

The total for duty September 1, 1902, was 84. The increase is accounted for by 4 additional instructors, made necessary by the increased number of cadets, and an associate professor of modern languages. This office was provided for at the last session of Congress and has been filled by the detail of Capt. William Kelly, jr., Ninth Cavalry.

The only change in the personnel of the academic board during the year has been the relief of Capt. Joseph E. Kuhn, Corps of Engineers, as instructor of practical military engineering, by Capt. Mason M. Patrick, Corps of Engineers. In addition to being the head of a department of instruction, Captain Kuhn was charged with very important duties in connection with building construction and the project for increasing the water supply, and it is to be regretted that the requirements of the service should have necessitated the relief of this excellent officer one year in advance of the usual time.

Of the Military Academy staff, Maj. John B. Bellinger, quartermaster, U. S. Army, disbursing officer, has been relieved by Maj. John M. Carson, jr., quartermaster, U. S. Army; and Capt. William C. Rivers, First Cavalry, adjutant, by Capt. Frank W. Coe, Artillery Corps. Captain Rivers's excellent record of service has been recognized by his transfer to the General Staff Corps, which necessitated his relief.

The appended roster gives the names of all officers and shows the particular duties they perform.

The maximum number of cadets is 523, which includes 1 cadet from Costa Rica, receiving instruction under a joint resolution of Congress. The academic year opened with 495 on the rolls of the academy, the largest number ever belonging to it at one time. They are divided among the four classes as follows:

First class.....	125
Second class.....	118
Third class.....	93
Fourth class.....	159

The following changes occurred during the year: Discharged, 22 (deficiency in studies, 21; physical disability, 1); dismissed, 1; resigned, 24; graduated, 94, including Andres Ponte, of Venezuela, who was undergoing instruction at his own expense under special authority of Congress.

The regular examination of candidates for admission was again held at various Army posts throughout the country, on May 1, with satisfactory results. A special examination was also held at West Point, on July 27, in order to fill as many as possible of the large number of vacancies existing. This number was made larger than usual after the regular examination, due to the reapportionment of districts and the confusion resulting therefrom, which led, in many cases, to the appointments being received but a short time before the examination took place. It is hoped hereafter that it will not be found necessary to hold any entrance examinations other than the regular one about May 1.

For the examination in May there were appointed 351 candidates, including principals and alternates, and including also 2 former cadets. Eighty-one candidates failed to report, 7 alternates failed to report for physical examination, 6 principals were authorized to report for physical examination only on June 12, leaving 257 candidates to be examined by the medical board. Of these, 10 failed to complete their mental examination, 16 were rejected both mentally and physically, 39 were rejected upon mental examination, 37 who qualified either upon mental examination or on certificate were rejected physically. There were no vacancies for 28 qualified alternates. The number qualified in May and June and admitted in June was 124, composed as follows:

Former cadets who underwent physical examination only.....	2
Accepted on certificate, 76 principals and 9 alternates.....	85
Accepted on examination, 35 principals and 2 alternates.....	37
Total.....	124

For the July examination there were ordered to report 74 candidates, principals and alternates, and also 1 former cadet.

Fourteen candidates failed to report, leaving 60 to be examined by the medical board. The medical board accepted 52 and rejected 8. Four alternates, qualified physically, declined to take the mental examination, as their principals were qualified upon certificate and were also accepted by the medical board, leaving 48 candidates to be considered by the academic board. One former cadet was required to pass physical examination only, 21 principals and 4 alternates were accepted upon certificate, and upon examination the academic board accepted 11 principals and 1 alternate and rejected 7 principals and 3 alternates. There were no vacancies for 2 alternates qualified on certificate. As a result of the July examination, 35 candidates were admitted August 1 and 1 on August 3. One former cadet was admitted on September 10, 1902, and 3 on August 28, 1903.

The following table gives the statistics relative to the present third class, which was the first class admitted to the academy under the new regulations authorizing the academic board to accept certificates from high schools, colleges, and universities in lieu of the regular mental examination. The table does not include cadets turned back, but deals only with the cadets belonging to the third class who were admitted in 1902. Attention is invited to the excellent showing of those admitted by certificate. This method of admission, as provided for in the new regulation, is giving results most satisfactory in every way:

Statistics regarding cadets admitted in 1902.

	On college certificate.	On high-school certificate.	On preliminary examination.	On certificate of competitive examination.	Act of Congress.	Total.
Not examined	1	1	2	0	0	4
Resigned:						
Not on account of low standing	4	2	4	0	0	10
On account of low standing	3	3	2	0	0	8
Deficient	4	2	6	0	0	12
Proficient	21	20	35	1	1	78
Total.....	33	28	49	1	1	112
Percentage deficient and resigning on account of low standing..	21+	18-	16+	0	0	18-
Average standing of those proficient.....	30+	41+	47+	67	53	

HEALTH.

The health of cadets and the command generally throughout the year has been very good. Influenza was the only prevalent disease.

During the unusually severe winter it affected a large proportion of the population, but fortunately without serious results. In the spring five cases of typhoid fever appeared among cadets following each other in quick succession. They were probably due to a common cause in the cadet mess which has not been definitely determined. As suspicion was directed upon the milk, with which cadets are very liberally supplied, the source of supply was immediately changed and the milk obtained from a new locality, the dairies being carefully selected and inspected and a thorough sterilization of their cans insisted upon. As a further precaution all milk has since been pasteurized before being served. On account of the large quantity of milk cadets consume and to avoid all danger in the future from this source, a contract covering a period of eight years has been entered into which will insure a pure supply as far as it is possible to attain one.

The efforts inaugurated last year to combat malarial fever by destroying mosquitoes have been continued without relaxation and with excellent results. No cases of this fever have occurred so far this summer. Attention is invited to the appended report of the post surgeon. His recommendations are approved and will be carried out as far as it is practicable to do so.

DISCIPLINE.

The discipline of cadets, as manifested in their conduct and at drill and in military exercises and attention to duty, is satisfactory. There has been no relaxation of the efforts made to enforce the regulations concerning hazing, and it is a pleasure to state that no departures worthy of notice from the spirit of these regulations have occurred during the past summer.

PRACTICAL MILITARY INSTRUCTION.

For the programme followed in this training attention is invited to the appended reports of the commandant of cadets and the instructor of practical military engineering. The instruction has continued along the lines mentioned in previous reports, every effort being made to improve in every practicable way the military training of cadets and their grounding in the elements of surveying, topography, reconnaissance, and field engineering.

CADET ALLOWANCES AND SUPPLIES.

I desire to invite attention to certain charges made against the pay of cadets which I believe should be borne by the Government. A cadet's pay is his only income; he is not permitted to augment it from outside sources; out of it he pays the entire cost of his maintenance (except the actual heating of the buildings he occupies), namely,

for his food, its service, and preparation; his clothing, text-books, laundry, social amusements, athletic games, literary societies; his expenses going to and coming from his home on furlough, etc.; the expenses of cleaning barracks, maintenance of baths, renewal of the plain furniture permitted in his room, and the gas used in lighting barracks. It is the expense of the items last mentioned which I believe should be met by the Government. This is usual in all public buildings. The cost for these to the individual cadet is approximately \$21 per year, and if he could be relieved from it and the amount added to that already reserved for his equipment after graduation, a great gain would be made. Although the amount now reserved for final equipment has recently been increased, it is still insufficient to enable the graduated cadet to enter his career free of debt, which, from every point of view, it is most desirable that he should do.

Gratifying results have attended the efforts of the commandant to enforce upon cadets rigid economy in the purchase of their supplies. These results are shown in the appended report of the treasurer and quartermaster and commissary of cadets, to which attention is asked. The supplies of clothing and other articles provided during the year have been ample and of excellent quality. The food furnished is also all that can be rightly desired. The addition of the large and modern kitchen, which is equipped with labor-saving devices for cooking, is a factor which has greatly benefited the mess. Although all the staple articles of food, with the exception of coffee and sugar, have been maintained at the high prices of the last few years, the better facilities incorporated in the mess building for handling and preparing food, together with the assiduous attention and earnest efforts of the quartermaster and commissary of cadets, who is the caterer, have considerably reduced the cost of living, the subsistence this year averaging 53.85 cents per cadet per day as against 59.3 cents for last year, making a total reduction in the cost of board of \$19.80 per cadet per annum.

ACADEMIC MATTERS.

The policy of sending the first class to Gettysburg to study that battlefield in connection with their course in the art of war was again followed this year. The manifest good results of thus supplementing theoretical study with practical experience by visits of this character led to their extension to two other departments. As an adjunct to the course in ordnance and gunnery, the first class made two visits as follows:

On January 17 to the Army Gun Factory at Watervliet Arsenal, N. Y., and on May 2 to the ordnance proving ground at Sandy Hook, New Jersey. These visits were so timed that the practical experience was as nearly as possible coincident with the theoretical instruction

along the same lines. The instructor of ordnance and gunnery in his report regarding these visits states:

I am of opinion that the value of these visits to the cadets can not be overestimated. They have had experiences which have made an indelible impression on their minds and which are part of the information a well-educated officer should possess; their horizon has been broadened and the theoretical lessons have been fixed as a part of their permanent knowledge in a way that no amount of explanation or illustration could accomplish. Each cadet was required after the visit to submit a report of his observations, prepared without assistance. These reports were especially satisfactory and showed much interest, power of observation and expression, and facility of analysis. I can not recommend too strongly that similar visits be made by each succeeding first class.

In view of the most excellent results obtained by the visits to the Sandy Hook proving grounds and Watervliet Arsenal, the recommendations made in previous reports that a modern seacoast fort, with its accessories, be established at the academy, are not renewed; but in place, it is recommended that a battery commander's position-finder station, completely equipped with depression position finder, etc., and with electrical communications to the present battery, be installed. This installation can be accomplished at a small expenditure and will enable effective instruction to be given in technical work which young officers entering the service from the academy are frequently called upon to perform. The practice in the use of lines of communication and in maintaining them will be a valuable one for any officer, whatever branch of the service he may enter.

In connection with the second class course in drawing, that class visited the Metropolitan Museum of Art in New York City on May 11, 1903, under charge of the professor of drawing and his assistants. The necessary expenses connected with this visit were borne by the cadets themselves. From an educational standpoint, the returns were well worth the expenditure of the time and money in placing before these cadets, in many cases for the first time, a comprehensive collection of the world's best productions in art.

The changes in the curriculum, which were fully outlined in my report of last year, took effect on September 1, 1902, and it is believed that every change then made has been a beneficial one. Further revision is, however, necessary and is under consideration. I believe it essential that cadets should have a short course in logic; and provision for such, I hope, can be made in the time now allotted to English. Instruction in Spanish is at present given in the third class course, and as a speaking knowledge of this language is now of such great importance for our officers, either provision should be made to keep the language fresh in the minds of cadets until graduation or changes in the curriculum should be made to enable instruction in it to be given in the last or graduating year.

In connection with the study of French and Spanish, I have the honor to renew my previous recommendation that the Secretary of War recommend to Congress that provision be made for the employment of three assistant instructors in the department of modern languages to be civilians, natives of the countries where the languages are spoken—two for Spanish and one for French. A conversational knowledge of both is, of course, very difficult to acquire in the class room. Although great attention is given to this phase of the study of these languages, I have no doubt that the ability of the graduate to speak both would be greatly increased if the instructors and cadets heard them spoken more in the class rooms. Native instructors would not, of course, have the same military control over a section of cadets that an officer would have, but they would be extremely useful, first, as a guide for the officers who act as instructors, and then to teach special sections or take each section in turn a short time in order to verify the correctness of work done and to increase the interest of the cadets in the subject. The good results it is manifest would follow the employment of such assistants are certainly sufficient to justify the expense of employing them.

Regarding the arrangement of hours, tentative plans begun with the present academic year, September 1, 1903, effect an equal division of hours from 8 a. m. to 1 p. m. between the departments of chemistry and philosophy in the second class course, each department having three periods of one and one-fourth hours each. The morning hour belonging to the department of tactics was transferred to the afternoon. In the first-class course three periods of recitation in ordnance and gunnery of one hour each from 10 a. m. to 1 p. m. have taken the place of the former hours. The result of these alterations in the hours of recitation makes no change in the number of hours which each cadet spends in the section room, but increases materially the time which an instructor can devote to each cadet.

The course in military hygiene, comprising twenty lectures given by the surgeon to each half of the second class, was carried out this year for the first time. The lectures were so arranged as to cover well the essential matters of this important subject. They were followed with interest and profit by the class.

THE LIBRARY.

This very important department is fully meeting the expectations regarding its value in the education of cadets and its usefulness in other respects, which were expressed in the efforts made to secure its reorganization. The appended report of the Librarian gives a synopsis of the work it has accomplished during the past year, and attention is invited to it. The library still lacks many essentials to complete its equipment of books and similar accessories, but with a continuance of the liberal treatment Congress has given it during the past two years these difficulties will be quickly overcome.

BUILDINGS AND GROUNDS.

The appended reports of the quartermaster and instructor of practical military engineering give in detail the many improvements made and the large amount of work accomplished during the year. Of important improvements, not included in the plans of enlargement, the south wing of the cadet hospital and the addition to the cadet mess are still unfinished. Work on both has been delayed by the failure of the contractor to whom it was awarded. Rapid progress, however, is now being made and these improvements will be completed at an early date. The cadet mess when finished, it is believed, will be a model of its kind in the practicability of its arrangement for the proper preparation and service of food. The completion of the officers' mess building adds an important structure to those already existing at West Point and fills a long standing want.

The preliminary preparations for giving effect to the act of Congress of June 28, 1902, providing an adequate plant for the Military Academy have been most satisfactorily completed. The Secretary of War gave his careful personal attention to this matter, and, under his instructions, ten firms of architects of established reputation, from the country at large, were invited to submit in competition preliminary general plans showing a proposed arrangement of the buildings and treatment of the grounds to meet the various requirements of the academy, together with an indication of the architectural treatment of the separate buildings. The conditions governing the competition are set forth in full in Appendix I, hereto. The result has been the securing of a plan of improvement which, it is believed, will receive very general approval. The plan meets the practical requirements of the academy and will harmonize with the character of the landscape; historic associations are preserved by the retention of the important old buildings with which the new will accord, the whole making a satisfactory and complete plan; finally, the plan is one that can be constructed with economy. The act under which these improvements are to be made requires the complete plan to be approved by the Secretary of War before any buildings can be begun. This requirement will entail much delay in beginning actual work. In view of the overcrowded condition of cadet barracks and the limitations of necessary training by the inadequateness of several existing buildings, it is hoped Congress will, when the matter is presented, so change its action as to permit the Secretary of War, after approving a general plan, to proceed with the construction of buildings as he may see fit.

Mention should be made of an interesting and important work recently inaugurated, having for its object the proper management of the forest lands of the reservation, comprising approximately 2,000 acres. The forests are at present in poor condition, no systematic plan up to this time having been followed to care for them or to pro-

mote the growth of desirable varieties of trees and prevent damage from fires. With the approval of the War Department, and under the general direction of Mr. Gifford Pinchot, of the Bureau of Forestry, Department of Agriculture, a working plan of management is now being prepared. Preliminary work to this end was done during the spring by Profs. Henry S. Graves and Royal Marston, assisted by the senior class of the Yale forestry school. The working plan will include an accurate statement of the existing species of trees, the rate of growth of the most important varieties, with advice for their management and recommendations for protection from fires and other dangers. When the plan is systematically followed, not only will our woodlands be improved and made more attractive, but their productiveness as watersheds and in firewood will be greatly increased. The example of practicing forestry here should influence other owners of forest lands to similar efforts.

The acquisition, under authority given in the last Military Academy appropriation bill, of the Dassori tract of land, comprising about 220 acres, adds a very desirable extension to the southern part of the reservation. It will be a wise policy, I believe, to acquire property, when it can be had at a fair value, so that ultimately the Government lands may extend to the natural southern boundary, the Highland Falls Brook.

Attention is invited to the reports of the quartermaster and disbursing officer, the ordnance officer, and the engineer officer, which are hereto appended.

ESTIMATES.

The estimates for the next fiscal year are forwarded with this report. They have been carefully prepared, and the necessity for the few new items is fully explained in the remarks following them. It is hoped all will meet with approval. Especial attention is invited to the item for maintaining the children's school. The object of this is to put this school upon a basis to enable it to provide at least the foundation of a common school education for the many children—mostly of soldiers—residing here. The conditions at West Point are such that there must always be many young children among its residents. The place is isolated, and especially in winter the difficulties of access to neighboring towns are so great that a school is a necessity. The existing one is unsatisfactory, and contrasted with the educational work in the Academy itself, it is the subject of just criticism by that part of the public aware of the situation. The teachers are soldiers, and the building occupied is one devoid of proper fixtures and of the simplest educational aids, or of any of the equipment required to make a school the attractive place it should always be. Using soldiers to teach children is objectionable. They seriously cripple the military

organization from which they are taken, and the saving made in using them is hardly appreciable, as their actual cost closely approximates the amount necessary to obtain trained teachers. Men are not suitable to teach small children; women should be employed for the purpose—a principle recognized in all civil communities.

Due to the existing poor facilities, many children have been attending the public school in the nearby village of Highland Falls. The authorities there complain of this and object to the burden it imposes upon the village. I feel that the responsibility for this school work is largely upon the Government, and that it should assume the burden as a matter of right and justice.

The estimate providing for an increased water supply is based upon the report of a board of especially experienced officers, who have made a most thorough investigation of this important and pressing subject. The recommendation of the board has already received the approval of the Secretary of War, and it is hoped Congress will also act favorably in the matter.

In conclusion, I have the honor to express deep appreciation for the aid and support I have received during the year from all the officers on duty at the Academy and from the War Department.

Very respectfully,

A. L. MILLS,

Colonel, U. S. Army, Superintendent.

THE ADJUTANT-GENERAL UNITED STATES ARMY,

Washington, D. C.

List of appendices.

- Appendix A.—Roster of officers and troops.
- Appendix B.—Report of the commandant of cadets.
- Appendix C.—Report of the instructor of practical military engineering.
- Appendix D.—Report of the treasurer, quartermaster, and commissary of cadets.
- Appendix E.—Report of the surgeon.
- Appendix F.—Report of the quartermaster and disbursing officer.
- Appendix G.—Report of the instructor of ordnance and gunnery.
- Appendix H.—Report of the librarian.
- Appendix I.—Rules governing architectural competition.

APPENDIX A.
ROSTER OF OFFICERS AND TROOPS.

SUPERINTENDENT.

Col. Albert L. Mills, Captain First Cavalry.

MILITARY STAFF.

Capt. Frank W. Coe, Artillery Corps, Adjutant of the Military Academy and of the post; recruiting officer.

Maj. John M. Carson, jr., quartermaster, quartermaster of the Military Academy and of the post; disbursing officer.

Capt. John M. Jenkins, Fifth Cavalry, commissary, and in charge of post exchange.

Capt. Thomas Franklin, commissary, treasurer of the Military Academy, and quartermaster and commissary of cadets.

Capt. Edward L. King, Second Cavalry, assistant to quartermaster.

Lieut. Col. Valery Havard, deputy surgeon-general, U. S. Army, surgeon.

Capt. Alexander N. Stark, assistant surgeon, U. S. Army.

Capt. Albert E. Truby, assistant surgeon, U. S. Army.

First Lieut. Theodore C. Lyster, assistant surgeon, U. S. Army.

Capt. Dennis E. Nolan, Thirtieth Infantry.^a

ACADEMIC STAFF.

Professors whose service at the academy, as professor, exceeds ten years, have the rank, pay, and allowances of colonel, and all other professors the rank, pay, and allowances of lieutenant-colonel.

DEPARTMENT OF TACTICS.

Lieut. Col. Charles G. Treat, captain Artillery Corps, commandant of cadets and instructor of tactics. (June 15, 1901.)

Capt. James K. Thompson, Fifteenth Infantry, senior instructor of infantry tactics, commanding company of cadets.

Capt. Edwin St. J. Greble, Artillery Corps, senior instructor of artillery tactics.

Capt. Godfrey H. Macdonald, Tenth Cavalry, senior instructor of cavalry tactics.

Capt. Fred W. Sladen, Fourteenth Infantry, assistant instructor of tactics, commanding company of cadets.

Capt. Lincoln C. Andrews, Fifteenth Cavalry, assistant instructor of tactics, commanding company of cadets.

Capt. Henry L. Newbold, Artillery Corps, assistant instructor of tactics, commanding company of cadets.

Capt. Robert C. Davis, Seventeenth Infantry, assistant instructor of tactics, commanding company of cadets.

Capt. Charles W. Exton, Twentieth Infantry, assistant instructor of tactics.^b

First Lieut. Herman J. Koehler, U. S. Army, instructor of military gymnastics and physical culture.

Second Lieut. Herman Glade, Fourth Infantry, assistant instructor of tactics and gymnastics, commanding company of cadets.

^a To be relieved.

^b Not yet joined.

14 REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY.

DEPARTMENT OF CIVIL AND MILITARY ENGINEERING.

Gustav J. Fieberger, lieutenant-colonel, U. S. Army, professor. (May 4, 1896.)
Capt. James P. Jerve, Corps of Engineers, assistant professor.
First Lieut. William D. Connor, Corps of Engineers, instructor.
First Lieut. Frederick W. Altstaetter, Corps of Engineers, instructor.
First Lieut. Harley B. Ferguson, Corps of Engineers, instructor.
First Lieut. James A. Woodruff, Corps of Engineers, instructor.

DEPARTMENT OF NATURAL AND EXPERIMENTAL PHILOSOPHY.

William B. Gordon, lieutenant-colonel, U. S. Army, professor. (March 27, 1901.)
Capt. Cornélis DeW. Willcox, Artillery Corps, assistant professor.
Capt. Palmer E. Pierce, Thirteenth Infantry, instructor.
Capt. William G. Sills, First Cavalry, instructor.
Capt. Johnson Hagood, Artillery Corps, instructor.
First Lieut. Charles M. Wesson, Eighth Cavalry, instructor.

DEPARTMENT OF MATHEMATICS.

Wright P. Edgerton, lieutenant-colonel, U. S. Army, professor. (October 7, 1898.)
Charles P. Echols, captain, U. S. Army, associate professor. (October 7, 1898.)
Capt. George Blakely, Artillery Corps, assistant professor.
Capt. William R. Smith, Artillery Corps, instructor.
Capt. Mortimer O. Bigelow, Eighth Cavalry, instructor.
Capt. John E. Stephens, Artillery Corps, instructor.
Capt. John K. Moore, Fifteenth Infantry, instructor.
Capt. Claude H. Miller, Twenty-fourth Infantry, instructor.
First Lieut. Lytle Brown, Corps of Engineers, instructor.
First Lieut. Leon B. Kromer, Eleventh Cavalry,^a instructor.
First Lieut. Joseph A. Baer, Sixth Cavalry, instructor.
First Lieut. Frank O. Whitlock, Fourteenth Cavalry, instructor.
First Lieut. Fred H. Gallup, Artillery Corps, instructor.

DEPARTMENT OF CHEMISTRY, MINERALOGY, AND GEOLOGY.

Samuel E. Tiltman, colonel, U. S. Army, professor. (December 21, 1880.)
Capt. Richmond P. Davis, Artillery Corps, assistant professor.
Capt. John McA. Palmer, Fifteenth Infantry, instructor.
Capt. Paul B. Malone, Twenty-seventh Infantry, instructor.
Capt. Louis M. Nuttman, Ninth Infantry, instructor.
Capt. Albert J. Bowley, Artillery Corps, instructor.
Second Lieut. William R. Bettison, Artillery Corps, instructor.

DEPARTMENT OF DRAWING.

Charles W. Larned, colonel, U. S. Army, professor. (July 25, 1876.)
Capt. Charles B. Hagadorn, Twenty-third Infantry, assistant professor.
Capt. Harold Hammond, Twenty-third Infantry, instructor.
Capt. Chauncey B. Humphrey, Twenty-second Infantry, instructor.
Capt. Henry C. Smither, Fifteenth Cavalry, instructor.
First Lieut. George B. Comly, Third Cavalry, instructor.
First Lieut. Frank C. Jewell, Artillery Corps,^b instructor.

DEPARTMENT OF MODERN LANGUAGES.

Edward E. Wood, colonel, U. S. Army, professor. (October 1, 1892.)
Capt. William Kelly, jr., Ninth Cavalry, associate professor. (July 1, 1903.)
Capt. J. F. Reynolds Landis, First Cavalry, assistant professor of the French language.
Capt. Thomas G. Hanson, Nineteenth Infantry, assistant professor of the Spanish language.
Capt. Peter E. Traub, Fifth Cavalry, instructor.
Capt. William Newman, First Infantry, instructor.
Capt. Americus Mitchell, Fifth Infantry, instructor.
Capt. Albert E. Saxton, Eighth Cavalry, instructor.
Capt. William S. Guignard, Artillery Corps, instructor.

^a Not yet joined.

^b To be relieved September 5, 1903.

REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY. 15

Capt. Bertram C. Gilbert, Artillery Corps, instructor.
Capt. Harvey W. Miller, Thirteenth Infantry, instructor.
First Lieut. Robt. E. Wood, Third Cavalry, instructor.
Second Lieut. Frank P. Lahm, Sixth Cavalry, instructor.

DEPARTMENT OF LAW AND HISTORY.

Edgar S. Dudley, lieutenant-colonel and judge-advocate, professor. (July 31, 1901.)
(By assignment under act 6 June, 1874.)
Capt. Daniel G. Berry, Twenty-second Infantry, assistant professor.
Capt. Pierce A. Murphy, First Cavalry, instructor.
First Lieut. Irvin L. Hunt, Nineteenth Infantry, instructor.
First Lieut. Samuel T. Ansell, Eleventh Infantry, instructor.
First Lieut. Halsey E. Yates, Fifth Infantry, instructor.
First Lieut. Edwin G. Davis, Artillery Corps, instructor.
Second Lieut. Edward Canfield, jr., Artillery Corps, instructor.

DEPARTMENT OF PRACTICAL MILITARY ENGINEERING, MILITARY SIGNALING, AND TELEGRAPHY.

Capt. Mason M. Patrick, Corps of Engineers, instructor. (August 31, 1903.)
First Lieut. Michael J. McDonough, Corps of Engineers, senior assistant instructor.

DEPARTMENT OF ORDNANCE AND GUNNERY.

Maj. Frank E. Hobbs, Ordnance Department, instructor. (August 15, 1900.)
Capt. Jens Bugge, Twenty-eighth Infantry, senior assistant instructor.
Capt. Gordon G. Heiner, Artillery Corps, assistant instructor.
Capt. Joseph Wheeler, jr., Artillery Corps, assistant instructor.

LIBRARIAN.

Edward S. Holden, M. A., Sc. D., LL. D. (July 1, 1902.)

CHAPLAIN.

Rev. Herbert Shipman. (Reappointed April 22, 1900.) (April 22, 1896.)

CONTRACT DENTAL SURGEON.

Dr. John H. Hess.

TEACHER OF MUSIC.

George Essigke. (October 15, 1895.)

TROOPS.

BATTALION OF CADETS.

Lieut. Col. Charles G. Treat, captain Artillery Corps, commanding.

DETACHMENT OF HOSPITAL CORPS.

Lieut. Col. Valery Havard, deputy surgeon-general, commanding.
Capt. Alexander N. Stark, assistant surgeon.
Capt. Albert E. Truby, assistant surgeon.
First Lieut. Theodore C. Lyster, assistant surgeon.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ARMY SERVICE MEN.

Maj. John M. Carson, jr., quartermaster, commanding.
Capt. Edward L. King, Second Cavalry.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ENGINEERS.

Capt. Mason M. Patrick, Corps of Engineers, commanding.
First Lieut. James A. Woodruff, Corps of Engineers.
First Lieut. Michael J. McDonough, Corps of Engineers.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ORDNANCE.

Maj. Frank E. Hobbs, Ordnance Department, commanding.

UNITED STATES MILITARY ACADEMY DETACHMENT OF CAVALRY.

Capt. Godfrey H. Macdonald, Tenth Cavalry, commanding.

16 REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ARTILLERY.

Capt. Edwin St. J. Greble, Artillery Corps, commanding.

UNITED STATES MILITARY ACADEMY BAND AND DETACHMENT OF FIELD MUSIC.

Capt. Frank W. Coe, Artillery Corps, commanding.

List of officers at the United States Military Academy.

Names.	Corps or regiment.	On duty at academy since—
Col. Albert L. Mills	Superintendent, captain, First Cavalry.....	Sept. 20, 1898
PROFESSORS.		
Larned, Charles W.	Professor (July 25, 1876)	Aug. 28, 1874
Tillman, Samuel E.	Professor (Dec. 21, 1880)	Aug. 28, 1879
Wood, Edward E.	Professor (Oct. 1, 1892)	Aug. 28, 1889
Fieheger, Gustav J.	Professor (May 4, 1896)	May 30, 1896
Edgerton, Wright P.	Professor (Oct. 7, 1898)	Jan. 28, 1889
Gordon, William B.	Professor (Mar. 27, 1901)	May 2, 1901
LIEUTENANT-COLONELS.		
Dudley, Edgar S.	Lieutenant-colonel and judge-advocate, professor (July 31, 1901)	July 31, 1901
Treat, Charles G.	Commandant of cadets, captain, Artillery Corps, (June 15, 1901)	Aug. 31, 1900
Havard, Valery	Lieutenant-colonel and deputy surgeon-general ...	Nov. 17, 1902
MAJORS.		
Carson, John M., jr.	Quartermaster	July 8, 1903
Hobbs, Frank E.	Ordnance Department.....	Aug. 15, 1900
CHAPLAIN.		
Shipman, Rev. Herbert	Chaplain.....	Apr. 25, 1896
ASSOCIATE PROFESSORS.		
Echols, Charles P.	Associate professor (Oct. 7, 1898).....	Dec. 27, 1898
Kelly, William, jr.	Captain, Ninth Cavalry.....	Oct. 19, 1898
CAPTAINS.		
Stark, Alexander M.	Assistant surgeon	Jan. 6, 1902
Patrick, Mason M.	Corps of Engineers.....	Aug. 31, 1903
Landis, J. F. Reynolds.	First Cavalry	Aug. 21, 1900
Thompson, James K.	Fifteenth Infantry	July 8, 1900
Greble, Edwin St. J.	Artillery Corps	June 15, 1901
Macdonald, Godfrey H.	Tenth Cavalry	Aug. 20, 1902
Hanson, Thomas G.	Nineteenth Infantry.....	Aug. 20, 1901
Hagadorn, Charles B.	Twenty-third Infantry.....	Aug. 20, 1902
Sladen, Fred W.	Fourteenth Infantry.....	Aug. 28, 1900
Willcox, Cornélie De W.	Artillery Corps	Aug. 21, 1900
Pierce, Palmer E.	Thirteenth Infantry	Nov. 8, 1901
Traub, Peter E.	Fifth Cavalry	Oct. 20, 1902
Davis, Richmond P.	Artillery Corps.....	Aug. 23, 1898
Jenkins, John M.	Fifth Cavalry	Aug. 21, 1900
Palmer, John McA.	Fifteenth Infantry.....	Aug. 27, 1901
Newman, William	First Infantry	Aug. 20, 1903
Malone, Paul B.	Twenty-seventh Infantry.....	Aug. 4, 1901
Bugge, Jens	Twenty-eighth infantry	Aug. 20, 1903
Mitchell, Americus	Fifth Infantry	Do.
Andrews, Lincoln C.	Fifteenth Cavalry	June 30, 1903
Franklin, Thomas	Subsistence Department.....	Jan. 8, 1902
Nuttman, Louis M.	Ninth Infantry	Jan. 31, 1903
Saxton, Albert E.	Eighth Cavalry	Aug. 21, 1900
Jervy, James P.	Corps of Engineers.....	Jan. 4, 1899
Blakely, George	Artillery Corps.....	Jan. 24, 1903
Coe, Frank W.	do	July 2, 1903
Smith, Wm. R.	do	Feb. 14, 1903
Bigelow, Mortimer O.	Eighth Cavalry	Aug. 20, 1901
Heimer, Gordon G.	Artillery Corps.....	Aug. 21, 1900
Wheeler, Joseph, jr.	do	Aug. 20, 1902
Nolan, Dennis E. ^a	Thirtieth Infantry	Aug. 28, 1901
Sills, William G.	First Cavalry	Aug. 21, 1900
Guignard, William S.	Artillery Corps.....	Jan. 7, 1901
Hagood, Johnson	do	Aug. 20, 1901
Bowley, Albert J.	do	Do.
Gilbert, Bertram C.	do	Aug. 21, 1900

^a To be relieved.

REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY. 17

List of officers at the United States Military Academy—Continued.

Names.	Corps or regiment.	On duty at academy since—
Stephens, John E.	Artillery Corps.	Aug. 21, 1900
Newbold, Henry L.	do.	Aug. 20, 1903
Moore, John K.	Fifteenth Infantry.	Aug. 27, 1902
Miller, Claude H.	Twenty-fourth Infantry.	Aug. 28, 1902
King, Edward L.	Second Cavalry.	July 24, 1903
Miller, Harvey W.	Thirteenth Infantry.	Aug. 26, 1902
Berry, Daniel G.	Twenty-second Infantry.	Aug. 29, 1900
Hammond, Harold.	Twenty-third Infantry.	Aug. 20, 1902
Davis, Robert C.	Seventeenth Infantry.	Aug. 10, 1901
Exton, Charles W. <i>a</i>	Twentieth Infantry.	Oct. 18, 1901
Humphrey, Chauncey B.	Twenty-second Infantry.	Aug. 21, 1900
Murphy, Pierce A.	First Cavalry.	Do.
Smith, Henry C.	Fifteenth Cavalry.	Do.
Truby, Albert E.	Assistant surgeon.	Dec. 1, 1902
FIRST LIEUTENANTS.		
Connor, William D.	Corps of Engineers.	Aug. 20, 1903
Altstaetter, Frederick W.	do.	Aug. 20, 1902
Ferguson, Harley B.	do.	Aug. 20, 1903
Hunt, Irvin L.	Nineteenth Infantry.	Aug. 1, 1903
Ansell, Samuel T.	Eleventh Infantry.	Aug. 20, 1902
Yates, Halsey E.	Fifth Infantry.	Do.
Lyster, Theodore C.	Assistant surgeon.	Aug. 8, 1903
Brown, Lytle.	Corps of Engineers.	Jan. 12, 1903
Woodruff, James A.	do.	Aug. 20, 1903
Kromer, Leon B. <i>a</i>	Eleventh Cavalry.	Do.
Baer, Joseph A.	Sixth Cavalry.	Do.
Whitlock, Frank O.	Fourteenth Cavalry.	Do.
Wood, Robert E.	Third Cavalry.	Do.
Wesson, Charles M.	Eighth Cavalry.	Do.
Comly, George B.	Third Cavalry.	Do.
Kochler, Herman J.	Instructor of military gymnastics and physical culture.	Feb. 1, 1885
McDonough, Michael J.	Corps of Engineers.	Apr. 17, 1903
Gallup, Fred H.	Artillery Corps.	Aug. 31, 1903
Davis, Edwin G.	do.	Aug. 20, 1903
Jewell, Frank C. <i>b</i>	do.	Aug. 20, 1901
SECOND LIEUTENANTS.		
Glade, Herman.	Fourth Infantry.	Mar. 14, 1902
Canfield, Edward, jr.	Artillery Corps.	Aug. 20, 1903
Lahm, Frank P.	Sixth Cavalry.	Do.
Bettison, William R.	Artillery Corps.	Do.

a Not yet joined.

b To be relieved Sept. 5, 1903.

F. W. COE,
Captain, Artillery Corps, Adjutant.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 1, 1903.

APPENDIX B.

REPORT OF THE COMMANDANT OF CADETS.

WEST POINT, N. Y., *July 20, 1903.*

SIR: In obedience to Circular No. 15, Headquarters United States Military Academy, dated April 14, 1903, I have the honor to submit the following report:

The programme of practical military instruction in the department of tactics for the year is appended. The changes from that of last year, caused by the increased numbers to be instructed, and also by endeavors to progress and improve upon former methods where opportunity offered, are briefly as follows:

In infantry, having perfected close order drill, increased attention has been paid to the use of infantry in the field in attack and defense of position, reconnoissance work, preparation of maps and all details giving actual experience with the conditions that would prevail in actual service.

In cavalry it has been found necessary to begin instruction of the third class during the summer encampment. This instruction begins at the most elementary, starting with teaching them to halter, bridle, saddle, and how to approach and handle their horse understandingly. This preliminary exercise is given in the open air on pleasant days and in the hall on rainy days, and using the most docile and quiet mounts. Careful endeavor is made, first, to give the rider confidence, and gradually by mounting him, using the blanket and surcingle only, to give him the proper seat and balance. In addition to the regular cavalry instruction of the first class, a careful and progressive course of instruction in the methods of riding over obstacles has been given in the outdoor riding ring equipped for that purpose. Quiet and regularly gaited horses only are used, and the horse is used without bit or bridle. The cadets are mounted bareback with the blanket and surcingle, and lastly with the saddles.

The obstacles are not severe, and the horse is unhampered in his movements by being punished, or by fear of punishment from unintended jerks on the reins, or by the efforts of the rider to gain support by using the reins. In short, the best horses are selected to teach the men. With this theory and along these lines progress has been most rapid and satisfactory, as evidenced by the conduct of all the mounts in their willingness to take hurdles or jumps in the hall and not to refuse or go out of their stride, and also in the riders in the ease and grace with which they are able to sit the horse in jumping obstacles and not unnecessarily interfere with him through the means of the bridle. The voluntary riding, for which opportunity has been given to cadets to enjoy, either by riding on the road or during release from quarters to practice at polo or other mounted exercises, has been of the utmost benefit, not only in improving the horsemanship of the cadets, but also to stimulate their interest in the horse and consideration for his proper care.

In the light artillery instruction the advancement made has been marked. Opportunity to extend instruction from that of simple cannoneers to that of the duties of driver has been of the utmost benefit, not only as an increased instruction in riding, but also as a necessary instruction to an officer looking toward his proper training as an officer of light artillery. This year for the first time the exhibition drill of the light battery before the Board of Visitors was made using cadets alone both as drivers and as cannoneers. The road marches made by the artillery over rocky roads and across ravines, the target practice in the mountains, the instruction in harnessing and unharnessing and adjustment of the harness in the field, the methods of going into camp and picketing the horses, and the use of the field ovens in the preparation of meals, used whenever opportunity offered—all these features, it is believed, have been of great benefit as a matter of instruction.

Instruction in pack-train service and mountain artillery has been continued as usual. Instruction in target practice has been improved and increased, taking advantage of all spare time and every opportunity for increased instruction. Under the new order for target practice and of the authority of the War Department, cadets

are allowed to be rated, according to the scores made under prescribed conditions, except that the same time limit for qualification is not prescribed, as that could not be exacted, owing to conditions prevailing at the Military Academy. Increased interest is shown and marked improvement in marksmanship. Instruction in target practice is begun within two weeks after the new cadet reports, and is thorough and progressive.

Instruction in coast artillery is necessarily limited owing to the lack of facilities. The method of loading, range finding, and fire control is explained and carefully illustrated. Owing to the fact that a number of graduates leave here and go to different branches of the service where properly equipped seacoast fortifications probably can not be seen, I recommend that the first class be allowed to visit for one or two days some well-equipped seacoast fort in the vicinity, say Fort Wadsworth, where target practice under service conditions can be witnessed.

The living accommodations—barrack room of cadets—were insufficient and for the coming winter the conditions will be still more unsatisfactory owing to overcrowding. At present there are 459 cadets on the rolls, and between 40 and 50 more are expected the latter part of July. This number will require almost every cadet, except members of the first class, to live three in a room. This condition has been found to be unsatisfactory both for comfort and sanitary reasons, and also as a hindrance to the cadet in his academic work. I earnestly recommend that a temporary building be erected on the high ground directly in the rear of barracks, connected with the area by a broad stairway, which will accommodate 80 to 100 men, and thus relieve the congestion.

The supplies furnished cadets have been satisfactory. Since the time the commandant of cadets was authorized to regulate the amount of supplies furnished cadets, I have given careful personal attention to each requisition with very satisfactory results, my object being to limit the allowances of cadets in debt to necessities and preventing the purchase of supplies in unnecessarily large quantities at one time, which, I believe, encourages extravagance. On December 31, 1901, the Corps of Cadets as a body was in debt to the cadet store, \$22,600.40. The aggregate amount of credit of the few cadets not in debt was \$1,073.14. On April 30, 1903, after fifteen months, the aggregate indebtedness of cadets to the cadet store was \$828.02; the aggregate credit of cadets, \$17,841.16, showing a savings in fifteen months of \$38,540.46. I have received the cooperation of the cadets themselves in my endeavors to decrease their indebtedness, and I believe, with care and fair economy, every cadet after his first year's service should be out of debt, and I earnestly recommend that no cadet be allowed to go on leave or expend funds for his enjoyment when he has not a sufficient amount to his credit to meet expenses. I believe, also, with care and economy, that each graduate with the \$384 which is deposited to his credit for equipment fund, together with the amount he may be able to have to his credit from proper care of his clothing and supplies, will be enabled to go into the service absolutely free from debt. Under present conditions, I do not believe, except in case of emergency, that any young officer should have a debt of any nature. I believe that this is one of the most important principles to inculcate in the army officer, and here is the place for him to learn it.

The discipline of the academy has been good. Careful endeavor has been made to instill in every cadet the impulse to do duty for duty's sake. Increased responsibility has been given cadet officers, with instructions to exercise the functions of their office at proper times, whether on or off duty or in or out of ranks. I believe that by careful development of this principle respect for office and authority will be increased in the cadets as a whole, and that by limiting authority over new cadets entirely to cadet officers or those ordered to do duty as such will be the quickest and surest of means of wiping out old methods of improper and undue interference with new cadets by cadets having no authority over them.

I repeat my recommendation that provision be made for increased time in the physical training and development of the fourth class and also for an opportunity to give a few minutes daily, or at least every other day, for the setting-up drill and physical exercise of the upper classes. Investigation shows that a cadet after completing his first year here is in his best physical condition, and except in individual cases, where a man by his own efforts maintains his condition, they gradually fall off in their physical condition. I believe it is important that this training should be continued throughout the four years' course. I am earnestly supported in this recommendation by the senior instructor in athletics.

Fencing has continued as usual, and the team representing the United States Military Academy was again successful at the intercollegiate tournament. I repeat my recommendation that authority be requested to employ, by contract, a competent assistant instructor in fencing, and also in riding and equitation.

Proper sports of all kinds have been encouraged and opportunity been given for their enjoyment, which in all cases, I believe, have been beneficial to the cadets both mentally and physically.

Investigations have been held from time to time under paragraph 125 of the Regulations, and during the present year no instances have been developed showing any cases of hazing or organized fights.

I earnestly recommend that in the contemplated rearrangement of schedule more time be made available to the department of tactics for instruction of the second and third classes in riding.

The present second class numbers 117 members; and two hours four times a week, with the riding hall only large enough to accommodate 30 men, gives each man but two hours' instruction a week, actually only about ninety minutes (taking out time of getting to and from the riding hall), and this in connection with the fact that with 30 men in the squad the time the instructor has to devote to the individual is utterly inadequate to proper careful personal supervision.

With a large third class the conditions will be equally difficult for satisfactory instruction and progress.

During the present encampment, as well as during the camp one year ago, I have endeavored to give as much preliminary instruction in the elementary work as practicable.

To accomplish regular and progressive advancement in proficiency it will be endeavored by transfer between riding sections to stimulate interest and promote uniformity of instruction.

I have received the willing and active cooperation of all officers serving with me in the department of tactics in the performance of my duties, and to their assistance is due, to a great extent, whatever of value has been accomplished in the care and training of cadets.

Very respectfully,

CHAS. G. TREAT,
Lieutenant-Colonel, U. S. Army, Commandant of Cadets.

The ADJUTANT UNITED STATES MILITARY ACADEMY.

Programme of practical military instruction in the department of tactics, January 1 to December 1.

	Detail.		Months.	Hours.	
	Men.	Class.		A. M.	P. M.
INFANTRY.					
Manual of arms, bayonet exercise, close and extended order.	Whole	1, 2, 3, 4	Mar. 15-Apr. 1	.....	4.15-5.30
Tent pitching, outpost, advance, and rear guard, intrenching, etc.	Detail	1, 2, 3, 4	Apr. 1-Apr. 30	.....	4.15-5.30
Battalion close and extended order, outpost, advance, and rear guard, tent pitching, attack and defense, and security and information.	Whole	1, 2, 3, 4	May 1-May 31	.....	4.15-5.30
Drill	Detail	3	June 22-July 9	9.00-10.00	.....
Do	Whole	4	July 6-July 9	9.00-10.00	.....
Do	do	1, 3, 4	July 10-Aug. 15	7.00- 8.00	.....
Drill (except Saturdays)	Detail	.....	do	7.30-12.30	.....
Instruction preparatory to tactical exercises (Saturdays).	Whole	3, 4	do	7.30-12.30	.....
Do	Remdr	3	do	8.30-10.00	.....
Reconnaissance	Detail	.....	Aug. 17-Aug. 27	7.00-12.30	.....
Reconnaissance, mounted	do	3	do	7.30- 9.30	.....
Infantry with fourth class	Whole	4	do	7.30- 9.30	.....
Drill	Detail	1	do	7.30- 9.30	.....
Infantry with fourth class	do	1, 2, 3, 4	Sept. 1-Sept. 30	.....	4.15-5.20
Tent pitching, intrenching, etc	Whole	1, 2, 3, 4	Oct. 1-Oct. 15	.....	4.15-5.20
Manual of arms, firing, bayonet exercise, close and extended order.	do	1, 2, 3, 4	Oct. 16-Oct. 31	.....	4.15-5.20
Battalion drills	do	1, 2, 3, 4	.....	.....	.....
CAVALRY.					
Equitation, riding pad saddle ^a	Detail	1, 2	Apr. 1-Apr. 30	.....	4.15-5.30
Instruction in the school of the trooper, squad, troop, and squadron (eight days).	Whole	1	June 22-July 9	10.30-12.00	.....
Riding with third class	Detail	1	do	7.00- 8.30	.....
Riding	do	3	do	7.00- 8.30	.....

^a Instruction on pad saddle is given to only those members of second class whose military seat is considered satisfactory. Hereafter to be confined to first class after September 1.

22 REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY.

Programme of practical military instruction in the department of tactics, January 1 to December 1—Continued.

	Detail.		Months.	Hours.	
	Men.	Class.		A. M.	P. M.
CAVALRY—continued.					
Instruction in the school of the trooper, squad, troop, and squadron (except Saturdays).	Detail	1	July 10-Aug. 15	8.30-10.00	.....
Equitation, jumping hurdles without bridle or saddle (except Saturdays).	do	1	do	8.30-10.00	.....
Instruction preparatory to tactical exercises (Saturdays).	do	1	do	7.30-12.30	.....
Riding in hall, practical military engineering detail on rainy days.	do	3	do	7.00- 8.00	.....
Riding	do	3	Aug. 17-Aug. 27	7.30- 9.30	.....
Riding in hall, cadets, except practical military engineering detail, on rainy days.	do	3	July 10-Aug. 15	8.00- 9.45	.....
Equitation—riding pad saddle ^a .	do	1,2	Sept. 1-Sept. 30	4.15- 5.20	.....
Instruction in riding hall every other week day (Saturday excepted).	do	3	Nov. 1-Mar. 15	.....	2.00-4.00
Instruction in the riding hall every other week day (Wednesday and Saturday excepted).	do	2	Nov. 1-Mar. 31	.....	4.00-6.00
Riding on the plain and in riding hall (except Saturday and during February) every other day.	do	1	Sept. 1-June 1	11.00- 1.00	.....
Saturdays, same, except during February.	Whole	1	{Sept. 1-Dec. 1 {Mar. 15-June 1	.....	.....
LIGHT ARTILLERY.					
Instruction	Detail	1,2,3	Apr. 1-Apr. 30	.....	4.15-5.30
Instruction (eight days) divided between light, mountain, and horse artillery.	Whole	1	June 23-July 9	10.30-12.00	.....
Instruction preparatory to tactical exercises (Saturday).	Detail	1	July 10-Aug. 15	7.30-12.30	.....
Drill (except Saturday)	do	1	do	8.30-10.00	.....
Do	do	3	do	8.30-10.00	.....
Horse artillery, alternating with artillery target practice.	do	1	Aug. 17-Aug. 27	8.30-10.30	.....
Artillery target practice, alternating with horse artillery.	do	1	do	7.00 a. m. to 2.00 p. m.	.....
Drill	do	1,2,3	Sept. 1-Sept. 30	.....	4.15-5.20
The drills in light artillery included instruction in the school of the driver, fitting of harness, use of the coupling reins of off horse, use of the coupling teams with their carriages, to hitch and unhitch, employment of light artillery in the field.					
Instruction in camp in field. During the present season, Aug. 17-27, the field ration will be taken by each cadet in the way of subsistence, to be cooked and prepared individually, service conditions.					
RECRUIT INSTRUCTION, NEW CADETS.					
Physical exercises	Whole	4	June 17-July 5	7.30- 8.15	.....
Infantry instruction	do	4	June 17-July 5	8.45- 9.45	4.30-5.30
Preliminary target instruction	do	4	June 17-July 5	10.30-11.15	.....
Lectures, academic regulations, blue book, care of arms and equipments, firing regulations, security and information.	do	4	June 17-July 5	12.00-12.45	.....
COAST ARTILLERY.					
Detail	Detail	3	Apr. 1-Apr. 30	.....	4.15-5.30
Drill	do	1	July 10-Aug. 15	8.30-10.00	.....
Do	do	3	July 10-Aug. 15	8.30-10.00	.....
Do	do	3	Sept. 1-Sept. 30	.....	4.15-5.30
Instruction in coast artillery consisted in the care, cleaning, etc., of the rifle and mortar and manual of the same; use of horizontal-position finder; use of plating board to determine position, speed, and direction of moving vessels.					

REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY. 23

Programme of practical military instruction in the department of tactics, January 1 to December 1—Continued.

	Detail.		Months.	Hours.	
	Men.	Class.		A. M.	P. M.
PACK-TRAIN SERVICE.					
Drill.....	Detail	1, 2	Apr. 1-Apr. 30	.....	4. 15-5. 30
Do.....	.....do.....	1	June 22-July 9	7. 00-10. 00	.....
Do.....	.....do.....	1, 2	Sept. 1-Sept. 30	.....	4. 15-5. 20
The drills included instruction in the setting up of the aparejo, fitting the same to mules, loading cargo on the mules, and methods of adjusting the loads of different kinds.					
MACHINE GUN.					
Drill.....	Detail	3	Apr. 1-Apr. 30	.....	4. 15-5. 30
Do.....	.....do.....	1	July 10-Aug. 15	8. 30-10. 00	.....
Do.....	.....do.....	3	July 10-Aug. 15	8. 30-10. 00	.....
Do.....	.....do.....	3	Sept. 1-Sept. 30	.....	4. 15-5. 20
Do.....	.....do.....	4	July 10-Aug. 15	8. 30- 9. 30	.....
This instruction consisted of nomenclature and service of the piece, maneuver of the horsed-gun detachment, firing piece with blank ammunition and ball ammunition on target range.					
MOUNTAIN ARTILLERY.					
Drill.....	Detail	1, 2	Apr. 1-Apr. 30	.....	4. 15-5. 30
Drill (eight days) divided between light and horse artillery.	Whole	1	June 22-July 9	10.30-12.00	.....
Drill.....	Detail	1, 2	Sept. 1-Sept. 30	.....	4. 15-5. 20
The drills included instruction in the material, the gun, its ammunition, sights, etc., fitting pack saddles to mules in transportation of the battery by pack mules.					
SIEGE ARTILLERY.					
Drill.....	Detail	1, 3, 4	Apr. 1-Apr. 30	.....	4. 15-5. 30
Do.....	.....do.....	4	July 6-July 9	7. 00-8. 00	.....
Do.....	.....do.....	4	July 10-Aug. 15	8. 30-9. 30	.....
Do.....	.....do.....	1	July 10-Aug. 15	8. 30-9. 30	.....
Do.....	.....do.....	1, 3, 4	Sept. 1-Sept. 30	.....	4. 15-5. 20
This instruction comprised the service of the piece, nomenclature and general features of the pieces (rifling breech mechanism, etc.,) ammunition (weights, velocities), penetration, etc., effects of fire.					
3.2-INCH GUN FOOT DRILL.					
Drill.....	Detail	3, 4	Apr. 1-Apr. 30	.....	4. 15-5. 30
Do.....	.....do.....	4	July 6-July 9	7. 00-8. 00	.....
Do.....	.....do.....	4	July 10-Aug. 15	8. 30-9. 30	.....
Do.....	.....do.....	1	July 10-Aug. 15	8. 30-9. 30	.....
Do.....	.....do.....	3, 4	Sept. 1-Sept. 30	.....	4. 15-5. 20
This instruction consisted of the service of the piece, instruction in aiming, setting the sights for indicated ranges and for indicated deflection, fuse setting, finding the range, and finding the length of fuse.					
TARGET PRACTICE.					
Rifle.....	Detail	4	Apr. 1-Apr. 30	.....	4. 15-5. 30
Do.....	.....do.....	3	June 22-July 9	7 a. m. to 12.30 p. m.	.....
Do.....	Whole	4	July 6-July 9	7.00- 8.00	2.00-4.00
Do.....	Detail	1	July 10-Aug. 15	7 a. m. to 12.15 p. m.	.....
Rifle (additional) at time not to interfere with other duty.	Those not completed.	1	.....do.....	8.50 a. m. to 12.15 p. m.	.....
Do.....	.....do.....	3	.....do.....	10.05 a. m. to 12.15 p. m.	.....
Rifle.....	Detail	3	Aug. 17-Aug. 27	7 a. m. to 12 m.	.....

24 REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY.

Programme of practical military instruction in the department of tactics, January 1 to December 1—Continued.

	Detail.			Hours.	
	Men.	Class.		A. M.	P. M.
TARGET PRACTICE—continued.					
Rifle.....	Detail	4	Sept. 1-Sept. 30		4.15-5.20
Pistol, dismounted.....	do	1	June 22-July 9	7.00-10.00	
Pistol, mounted.....	do	1	do	7.00-10.00	
Pistol, dismounted.....	do	1	July 10-Aug. 15	10.30 a. m. to 12.15 p. m.	
DANCING.					
Instruction.....	Detail	3	June 22-July 9	10.10-11.05	
Do.....	Half.....	4	July 6-July 9	11.00-11.55	
Do.....	do	4	do	11.55-12.45	
Instruction, optional.....	do	1	July 10-Aug. 15		3.00-4.00
Instruction.....	Whole.....	3	do	11.50-12.45	
Do.....	Half.....	4	do	10.00-10.55	
Do.....	do	4	do	10.55-11.50	
Do.....	Whole.....	3	Aug. 17-Aug. 27	12.00-12.45	
Do.....	Half.....	4	do	10.00-10.45	
Do.....	do	4	do	10.45-11.30	
SWIMMING.					
Cadets not qualified.....	Detail	3	June 22-July 9	11.45-12.45	
Do.....	do	4	July 6-July 9	10.10-11.00	
Do.....	do	4	do	10.55-11.50	
Cadets not qualified, except Wednesday and Saturday.....	do	1	July 10-Aug. 15		3.00-4.00
Do.....	do	3	do		3.00-4.00
Cadets not qualified.....	do	4	do	11.00-11.50	
Do.....	do	4	do	11.50-12.45	
Do.....	do	3	Aug. 17-Aug. 27	10.45-11.30	
Do.....	do	4	do	11.45-12.45	

Lectures were delivered to the first, third, and fourth classes on days unfit for practical work out doors, from 9 to 10 a. m., on the following subjects:
 Framework of the horse, mechanically considered.
 Simple diseases and treatment.
 Stable management and horseshoeing.
 Bits and biting, seats and saddles.
 Light artillery in the field.
 Care of horses, harness, and equipments.
 Security and information.
 Infantry drill regulations.
 Coast artillery.
 Miscellaneous.

APPENDIX C.

REPORT OF INSTRUCTOR OF PRACTICAL MILITARY ENGINEERING.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 10, 1903.

SIR: Complying with instructions contained in circular No. 15, current series, Headquarters United States Military Academy, I have the honor to submit the following report of operations of the department of practical military engineering covering the period from July 1, 1902, to May 20, 1903:

ENGINEER TROOPS.

The engineer detachment, with an authorized maximum strength of 88 men, furnished a daily detail of from 10 to 11 men throughout the year for the post guard and furnished the needful details for cadet instruction in target practice and drills in practical military engineering. The detachment received instruction in target practice, infantry and engineer drills, and signaling during the summer months. During the winter months a morning school was conducted for instruction in common school subjects, with indoor engineer drills, gymnastics, gallery practice, and instruction in the carpenter and blacksmith shops during the afternoons.

The discipline of the detachment has been good and showed a decided improvement over the previous year. The instruction of the detachment as a tactical unit is hampered by the demands necessary for the administration of the Military Academy and in this respect the engineer troops at West Point are at a disadvantage as compared with the engineer companies stationed elsewhere.

CADET INSTRUCTION.

First class.—The course of instruction for the first class in practical military engineering remained unchanged during the past year. Drill was held four times per week during September, 1902, and April, 1903, from 4.15 p. m. to 5.30 p. m., one-half the class alternating in attendance. From July 10 to August 15, 1902, five drills per week were given from 10.30 a. m. to 12.15 p. m., one-half the class alternating in attendance. The course covered bridge construction, pontoon, trestle, and spar, both with the standard equipment and with improvised material; knots, lashings, and splices; rigging of spars for derricks, gins, and shears; problems in field geometry; fabrication of siege material; launching expedients and reconnaissance instruments.

Second class.—During September and April four drills per week were given to the second class in military signaling with the flag and the heliograph.

Third class.—Instruction in the practical use of surveying instruments was given daily, Sundays excepted, from June 23 to July 9, from 7 a. m. to 12.30 p. m., and daily, Saturdays and Sundays excepted, from July 10 to August 15, from 8.30 a. m. to 12.30 p. m. One-third of the class attended on each drill day. The theoretical instruction in surveying having been omitted from the course in mathematics, the method of practical instruction was modified accordingly. A portion of the day's work was devoted to lectures and immediately followed by practical demonstrations with the instruments in the hands of the cadets. The results attained were exceedingly gratifying, and attention is respectfully invited to my detailed report on this subject contained in the annual report of the Superintendent for the year 1902, and especially to the recommendations contained therein.

The need of an additional assistant in the department of practical military engineering is severely felt. At no time during the year has it been practicable to assign more than one instructor to first class drill, and with sections of 45 to 50 men daily it is difficult to impart satisfactory instruction, especially during the months of September and April, when the actual time of attendance on the drill ground does not exceed fifty minutes.

CONSTRUCTION OF NEW OFFICERS' MESS.

The erection of this building, for which ground was broken March 17, 1902, has been under the supervision of the instructor in practical military engineering. The contract time for completion was May 1, 1903, but owing to certain delays not the fault of the contractor, an extension of two months' time has been granted. The building is rapidly nearing completion and there seems no reason why it should not be ready for occupancy by July 1, 1903. Provision for gas and electric fixtures was made by an appropriation of \$2,000, immediately available, contained in the Military Academy bill for 1904. Bids have been opened and an award made for supplying and installing the fixtures, which will be in place by the time the building is otherwise completed.

ENGINEER BOATHOUSE.

Under an appropriation of \$4,000 contained in the Military Academy bill for 1903, the erection of a boathouse for properly housing the barges and small boats belonging to the Military Academy was commenced in the summer of 1902. The work has been done by day labor, with materials purchased according to law and regulations. The boathouse is located near the north dock, just east of the ordnance boathouse, and is of similar construction. It will be completed before the close of the fiscal year.

NECESSARY IMPROVEMENTS TO WATER SUPPLY.

Under an appropriation of \$10,000 contained in the Military Academy bill for 1903, the work of improving and beautifying the surroundings of the new waterworks system has been continued. The road along the east side of Lusk Reservoir has been completed, affording a continuous driveway around the latter. The road along the north and west sides received its final surfacing and a cobble-stone gutter to carry off the surface water from the roadway. Slopes were trimmed and sown in grass seed and the surroundings generally cleared of all rubbish. This season's operations will complete the work of improving the water supply.

CONSTRUCTION OF WATER TOWER, LUSK RESERVOIR.

This tower has been built and completed save for an approach from the shore which will be constructed during low water in the fall. The tower is 10 feet square and about 35 feet high, built of native stone with ornamental parapet similar to that of the dam. It has four inlet and one outlet valves so arranged that water may be drawn from different levels. Its object is to enable water to be drawn habitually from near the surface where the quality is much better, thus reducing the work of the filter beds and insuring a better quality of water during the summer and early fall months.

For the construction of the tower the reservoir was drained in November after the fall rains had set in, the post being in the meantime supplied directly from Crow's Nest and Sinclair brooks, which were led into the mains by a connection at the old water house. By the end of November the tower had advanced so far as to permit the water to again flow into the reservoir and by the middle of February the water had reached the level of the spillway.

WATERWORKS.

The annual appropriation of \$1,200 for the care of the waterworks was expended in some much needed repairs to the keeper's house at Round Pond and to the siphon and valve houses at that place; also in washing and replacing the filter sand at the main filter beds and in cleaning out the clear water reservoir.

DEPARTMENT OF PRACTICAL MILITARY ENGINEERING.

The annual appropriation of \$1,500 for the use of the department was expended in the purchase of tools, materials, and instruments for cadet instruction and for the extra-duty pay of skilled mechanics from the engineer detachment, as authorized by law.

Very respectfully,

JOSEPH E. KUHN,
*Captain of Engineers, Instructor in Practical Military Engineering,
In Charge of Water Supply.*

The ADJUTANT, UNITED STATES MILITARY ACADEMY.

OFFICE INSTRUCTOR PRACTICAL MILITARY ENGINEERING,
West Point, N. Y., August 31, 1903.

SIR: Complying with memorandum instructions from the Superintendent, I have the honor to submit the following supplementary report covering instruction in practical military engineering during the summer of 1903.

First class.—The course prescribed covered the period from July 10 to August 15, inclusive, daily, Saturdays and Sundays excepted, from 10.30 a. m. to 12.15 p. m., one-half the class being present each day. From July 10 to 22 instruction was held in knots, lashings, and splices; from July 22 to 28 in fabrication of siege materials; from July 29 to August 6, spar bridges, derricks, gins, and shears; from August 7 to 9, school of the boat; August 10 to 14, pontoon bridge by successive pontoons.

The programme of instruction was designed to cover work of the greatest practical value to the future officer in his military career and particular attention was devoted to the subject of cordage and work with spars. The average daily attendance was 58 cadets, for whom there was but a single instructor. Although the results attained were sufficiently gratifying, better work could have been done had there been more instructors.

Third class.—Instruction covered the period from June 22 to August 15, inclusive, daily, except Saturdays and Sundays. The daily attendance averaged about 30 cadets for four hours instruction. The average number of attendances per cadet was about 12 for the entire period. Until July 10 four instructors were available, and after this three, one being required to supervise first class instruction.

In general, the same methods were followed as during the summer of 1902. The somewhat smaller class enabled more attention to be devoted to the individual cadet, and the results were correspondingly improved. In the beginning practical work was preceded by a short lecture in which the theory, construction, use and adjustments of the level and transit were progressively explained. These lectures averaged about one hour in length and were immediately followed by practical work with the instruments. As the class progressed in the course and became sufficiently familiar with the instruments to justify the undertaking practical work was given in connection with the survey of the post made under the direction of the department of practical military engineering.

Three separate areas at the north and west portions of the reservation were assigned to as many instructors and the daily sections divided into three field parties, which were marched promptly to their assigned areas, where they were required to make a topographical survey, the work being subsequently plotted on the map by the civilian draftsman. While the rate of work was naturally somewhat slow and occasional errors were made, due to lack of experience, the general results were exceptionally gratifying.

Every cadet had an opportunity for using both level and transit for four hours on a regular survey besides being required to fill the positions of rodman, recorder, and axman on other days. They thus became practically familiar with all the duties of a surveying party and received the maximum amount of experience possible under the limited time available.

It is perfectly safe and reasonable to say that this class has a better practical knowledge of surveying instruments than any class heretofore graduated from the United States Military Academy.

In conclusion I see no reason for modifying the general character of the instruction now given to the first and third classes in practical military engineering under existing conditions. The number of instructors should, however, be increased by one at least, so that three officers may be available for the third class and two for the second.

Very respectfully,

JOSEPH E. KUHN,
Captain, Corps of Engineers, U. S. Army,
Instructor Practical Military Engineering, U. S. Military Academy.

The ADJUTANT, UNITED STATES MILITARY ACADEMY.

APPENDIX D.

REPORT OF THE TREASURER, QUARTERMASTER, AND
COMMISSARY OF CADETS.

OFFICE TREASURER UNITED STATES MILITARY ACADEMY,
West Point, N. Y., August 26, 1903.

SIR: In compliance with instructions contained in Circular 15, Current series, Headquarters United States Military Academy, I have the honor to make the following report of the operations of the departments under my charge for the fiscal year ending June 30, 1903:

TREASURER UNITED STATES MILITARY ACADEMY.

The treasurer of the Academy being "charged with all matters relating to the pay and accounts of the cadets," it is necessary to open an individual account with each cadet, also to keep 31 different accounts, under the heads given in the following statement, which also shows the disbursements and receipts under each account during the fiscal year:

	Dr.	Cr.
Assistant treasurer.....	\$274, 293. 55	\$259, 095. 56
Athletic association.....	1, 634. 50	1, 634. 50
Balances paid.....	29, 915. 15	28, 886. 42
Barber.....	1, 108. 20	1, 108. 20
Cadet cash.....	25, 437. 04	25, 183. 03
Cadet hospital.....	3, 207. 28	3, 207. 28
Cadet laundry.....	18, 516. 28	17, 750. 12
Cadet store.....	119, 804. 40	119, 612. 23
Cadet mess.....	93, 507. 08	91, 201. 62
Confectioner.....	137. 50	137. 50
Corps of cadets.....	322, 872. 74	336, 997. 80
Damages, ordnance.....	138. 87	138. 87
Dancing.....	515. 20	515. 20
Dentist.....	596. 00	596. 00
Deposits.....	21, 474. 50	18, 262. 55
Dialectic society.....	312. 42	440. 40
Equipment fund.....	25, 558. 00	42, 692. 00
Expressage.....	29. 39	29. 39
Gas fund.....	1, 760. 70	1, 730. 60
Hops and german.....	2, 648. 29	2, 648. 14
Miscellaneous fund.....		45. 02
Miscellaneous items.....	1, 393. 12	1, 433. 64
Oath (notary public).....	41. 50	41. 50
Paymaster.....	225, 022. 55	225, 022. 55
Rations.....	49, 270. 50	49, 270. 50
Periodicals.....	12. 77	12. 77
Photographer.....	46. 00	46. 00
Policing barracks.....	6, 587. 61	6, 587. 61
Travel pay.....	1, 328. 94	1, 328. 94
Young Men's Christian Association.....	684. 19	473. 92
Washstand, etc., fund.....		406. 85

The accounts of the treasurer are inspected every two months by an officer of the academy, detailed by the Superintendent for the purpose, to whom the result of the

30 REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY.

inspection is reported, together with a statement of all debits and credits on different accounts. The last inspection was made July 27, 1903, and reported as follows:

Assets.		Liabilities.	
Assistant treasurer.....	\$19,219.86	Balances paid.....	\$410.08
Cadet cash.....	274.01	Corps of Cadets.....	6,768.03
Cadet laundry.....	905.63	Deposits.....	51.00
Cadet store.....	14,816.88	Dialectic society.....	289.70
Cadet mess.....	5,313.67	Equipment fund.....	50,890.00
Washstand, etc., fund.....	371.90	Gas fund.....	299.30
Hops and german.....	.15	Miscellaneous fund.....	80.40
Reserve fund.....	10,000.00	Miscellaneous items.....	35.52
Cash on hand.....	8,069.56	Young Men's Christian Association.....	147.63
	58,971.66		58,971.66

The following statement will indicate quite clearly the improvement in the financial condition of the cadets:

July 1, 1901:	
Indebtedness of the corps.....	\$16,498.01
Balance due the corps.....	\$1,510.22
Number of cadets in debt.....	383
Number of cadets out of debt.....	51
July 1, 1902:	
Indebtedness of the corps.....	\$20,482.61
Balance due the corps.....	\$1,464.63
Number of cadets in debt.....	386
Number of cadets out of debt.....	46
July 1, 1903:	
Indebtedness of the corps.....	\$17,254.58
Balance due the corps.....	\$5,715.33
Number of cadets in debt.....	283
Number of cadets out of debt.....	176

QUARTERMASTER OF CADETS.

In my report of last year under this head I called attention to the inadequateness of the present cadet store building for its present use. More clothing has been manufactured than ever before, and more repairs have been made, so that each year the limited amount of room which the building affords becomes more of a tax upon the economical administration of business. As this condition will be remedied by a suitable building in the near future, this matter is only mentioned at the present time to invite attention to the difficulties attendant in carrying on the business of this department.

The following list shows the number of articles manufactured and repaired at the cadet store during the year:

	Manufactured.	Repaired.
Dress coats.....	320	1,070
Overcoats.....	205	810
Blouses.....	613	1,548
Trousers:		
Gray.....	635	1,770
White.....	2,583	1,719
Flannel.....	301	
Riding.....	72	
Officers'.....		203
Line officers'.....	82	
Staff officers'.....	27	
Riding breeches, officers'.....	20	
Dress coats, officers'.....	6	8
Overcoats, officers'.....	1	8
Blouses, officers'.....	68	109
Capes, officers'.....	4	
Miscellaneous, including "cits," etc.....	17	1,392
Chevrons sewed on.....		517
Service stripes sewed on.....		1,214
Socks.....		6,784
Socks tagged.....		4,417
Shoes tagged.....		2,790

CADET LAUNDRY.

The amount of work done by the cadet laundry during the past year has greatly increased, as is shown by the following comparative statement. The work has increased to such an extent that it has been necessary to install an additional boiler of 50-horsepower and a new modern and up-to-date engine of 40-horsepower. The laundry machinery is in excellent condition, and numerous changes in the arrangement of same have been made so as to make the operation of laundering the clothes continuous and progressive, so that all articles move forward from one machine to the next until the last operation is finished. This has reduced the cost of laundering to such an extent as to enable the laundry to handle the increased amount of work received from the cadet mess and the cadet hospital (which is washed without charge) without additional cost to the corps of cadets.

The following comparative statement will show the amount of work done this year, and the increase in each class of articles over last year's report:

For cadets.

Belts, shoulder	44,728	Sheets	34,704
Belts, sword	4,391	Shirts, white and negligee	32,601
Belts, waist	24,554	Shirts, night	14,768
Blankets, single	94	Shirts, under	57,620
Coats, fatigue	17	Socks, pairs	59,313½
Clothes bags	7,606	Towels	91,075
Comfortables	105	Trousers, gray	174
Collars	132,910	Trousers, white	37,685
Cuffs, pairs	113,962		
Drawers	53,727	Total	885,388½
Gloves, pairs	56,054	Total 1901-2	899,894½
Handkerchiefs	95,703		
Pajamas, suits	3,838	Decrease during year	14,506
Pillowcases	19,759		

For cadet hospital.

Aprons	31	Shirts, hospital	1,497
Bedspreads	719	Tablecloths	181
Blankets, single	27	Towels	10,529
Mattress covers	5		
Napkins	1,340	Total	23,409
Pajamas, suits	670	Total 1901-2	15,831
Pillowcases	3,583		
Sheets	4,827	Increase during year	7,578

For cadet mess.

Aprons	8,937	Tablecloths	17,787
Caps	164	Table felts	642
Jackets	8,432	Towels	15,938
Meat cloths	824		
Napkins	149,908	Total	205,859
Overalls	273	Total 1901-2	104,153
Pillowcases	998		
Sheets	1,956	Increase during year	101,706

Grand total of pieces laundered	1,114,656½
Grand total of pieces laundered, 1901-2	1,019,878½

Increase during year

94,778

COMMISSARY OF CADETS.

The material and personnel of this department is in better condition this year than last year, owing to the better facilities which have become available during this period. The north wing of the new addition has been at last finished sufficiently to be occupied. The large, handsome, and modern kitchen, equipped with up-to-date and labor-saving appliances for cooking, has added more than any other factor to benefit the mess. The largely increased refrigerators have also exerted a most bene-

ficial influence, permitting large quantities of perishable stores to be purchased at one time and be stored without fear of loss, thus enabling these costly articles of food to be purchased at the lowest market price.

The constant changes which have been made in the mess and its appurtenances, owing to the alterations and improvements which have been undertaken during the past year, have rendered the successful operation of this department rather difficult, but now that excellent facilities for storing, preparing, and serving food have been obtained, and suitable quarters for the numerous employees are available, it is believed that this department can be run with better results, less friction, and more satisfaction to all concerned than has been the case in the past.

The new addition, comprising the south wing of the cadet mess, is in progress of construction. While this will greatly enlarge the already existing facilities, it is so planned that the mess can be operated without any annoyance or friction from this source during its period of building.

With the exception of coffee and sugar, all of the staple articles of food have been maintained at the high prices of last year, but the better facilities of the mess, together with the constant effort to purchase all stores from first hands wherever possible, has resulted in furnishing wholesome, nutritious food for the cadets' table, without material increase in the cost to them.

The following statement shows the quantity of the principal articles of food consumed at the mess during the year:

Butter	pounds..	31, 842	Eggs	dozen..	15, 802
Coffee	do....	5, 652	Flour	pounds..	115, 086
Fish	do....	15, 155	Meat, fresh	do....	198, 368
Meat, salt	do....	12, 400	Poultry	do....	13, 613
Milk	gallons..	49, 197	Sugar	do....	82, 949
Potatoes	pounds..	235, 884			

The cost of subsistence of the mess during the last year has been 53.85 cents per day, as against 59.3 cents per day for last year, which amounts to a reduction in the cost of board per cadet per annum of \$19.89.

Very respectfully,

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

THE ADJUTANT UNITED STATES MILITARY ACADEMY.

APPENDIX E.

REPORT OF THE SURGEON.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 20, 1903.

SIR: In compliance with your circular of April 14, 1903, I have the honor to submit the following general report of the work done in the medical department during the year ending on this date.

The health of the command during the year has been remarkably good, in spite of the unusually severe and trying winter, showing the hygienic efficiency of the rules and regulations in force on this reservation. The only prevalent disease has been influenza which, during the winter and spring, affected a large proportion of the population, fortunately without dangerous complications or sequels.

There have also been 5 cases of typhoid fever, all among cadets, following each other in quick succession and evidently due to a common cause, the first one being admitted on March 18, 1903, and the last on April 13, 1903. So far as it is possible to determine, the milk (which is very liberally supplied to cadets for drinking) appears to have been the source of the infection. From the time the supply was changed and obtained from a different locality no new case was contracted. The three dairies now furnishing the milk have been carefully selected and a thorough sterilization of the cans is insisted upon. As a further precaution, all the milk is pasteurized before being served in the mess hall. Arrangements are now made to obtain the entire supply from one dairy.

Outside of influenza and typhoid fever, and 1 case of tuberculosis transferred to Fort Bayard, N. Mex., no other case of infectious disease has occurred in the Corps of Cadets. Among officers and enlisted men the only other cases of infectious diseases have been tuberculosis 2, diphtheria 1 (contracted outside), and chicken pox 5.

Recognizing the fact that malarial fever is mostly, if not exclusively, produced by the bite of the anopheles mosquito, every measure has been taken to destroy that insect and prevent its propagation, so that it is expected that but few original cases of fever will occur this summer and fall. As a further measure, a list of all cases of malarial fever observed this year has been prepared, so that necessary precaution may be taken to prevent mosquitoes from having access to them.

The food of the cadets has been quite satisfactory, and the few well-grounded complaints made in regard to it have been promptly corrected. I believe the interval between breakfast (6.30 a. m.) and dinner (1 p. m.) is too long, and have recommended the hour for dinner be changed from 1 to 12.30; the result of such a change would also be a longer time for recreation before work is resumed at 2 p. m.

There have been no deaths among the cadets, officers, or enlisted men during the year.

The cadet hospital is badly planned and arranged for its purposes; besides the new wing now being built, several alterations have been recommended and estimates for them submitted. The soldiers' hospital is also undergoing important changes and improvements.

The statistical report of admissions to hospital, operations performed, and result of treatment will be submitted at the usual time.

Very respectfully,

V. HAVARD,
Lieutenant-Colonel, Deputy Surgeon-General, U. S. Army, Surgeon.

The ADJUTANT, UNITED STATES MILITARY ACADEMY.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 7, 1903.

SIR: I have the honor to submit the following report of the work of the medical department at this post for the year ending June 30, 1903:

Cases treated as patients in the cadet hospital, including officers	985
Cases treated at soldiers' hospital (hospital and quarters)	467
Civilians treated (members of officers and soldiers' families and all others to whom medical attendance is usually extended)	2, 158
Prescriptions filled at cadet hospital:	
On written prescriptions	2, 727
On verbal prescriptions (estimated)	2, 500
Prescriptions filled at soldiers' hospital and subdispensary	1, 341
Recruits examined	120

The health of the command during the year has been very good. Table A, hereto appended, shows the causes, number, and ratio of admissions for officers, cadets, and enlisted men.

The largest number of admissions for any disease was from influenza (126), which prevailed in a mild and subacute form during the winter and spring, fortunately without dangerous complications or sequels. Next in order of frequency are, malarial fever (99), all latent or recurrent cases, having been contracted in previous seasons; indigestion (93), mostly the result of indiscreet eating; tonsilitis and pharyngitis (71), from exposure to the trying winter and spring weather; intestinal diseases (54) and bronchial affections (52).

Of acute infectious diseases there were 5 cases of typhoid fever in March and April, probably caused by infected milk. All necessary measures to prevent a recurrence of the disease, from this cause, were promptly taken. This outbreak of typhoid fever has been the subject of several special reports.

As stated in a previous report, believing that the anopheles mosquito is the cause of the propagation of malarial fever, every effort was made to prevent the breeding of mosquitoes on this reservation and to isolate fever cases, with the result that, up to July 1, not a single case of malarial fever is of record as having been contracted at this post. Mosquitoes, however, have been rather common at times, with the easterly winds, being blown from the extensive marsh on the other side of the Hudson River; but as these mosquitoes have no opportunity of becoming infected, they were innocuous. The use of mosquito bars in camp, enforced by orders, had doubtless the excellent effect of preventing the propagation of malarial fever among the cadets, besides adding materially to their comfort.

It should be noted that the eyesight of a large proportion of cadets is more or less defective and needs correction by glasses to enable them to pursue their studies. This condition is not special to cadets, but is about the same as that which prevails among educated classes in civil life, and is in no way attributable to bad lighting or any other hygienic defect. Table B, hereto appended, shows the record of eye work done by Asst. Surg. Theo. C. Lyster, a record which is not much more than half of the entire ophthalmic work done during the fiscal year.

There have been no deaths during the year among officers and cadets. Among enlisted men, one was killed by railroad train and another died in hospital of tubercular peritonitis.

The cadet hospital, as well as the soldiers' hospital, are both undergoing important alterations and repairs which, when completed, will make them as nearly perfect for their purpose as could be desired.

The question of changing the cadets' time for meals to more suitable hours, for their comfort and health, has been made the subject of a special report.

Table C, hereto appended, shows the record of surgical operations performed.

Very respectfully,

V. HAVARD,

Lieutenant-Colonel, Deputy Surgeon-General, U. S. Army, Surgeon.

The ADJUTANT UNITED STATES MILITARY ACADEMY.

REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY. 35

A.—Causes, number, and ratio of admissions for officers, cadets, and enlisted men for the year ending June 30, 1903.

Causes of admission to sick report.		Number of admissions.	Ratio per 1,000 of mean strength.
Abscess	Officers and cadets	14	28.98
	Enlisted strength	0	0
Asthma	Officers and cadets	6	12.42
	Enlisted strength	0	0
Adenitis	Officers and cadets	2	4.14
	Enlisted strength	0	0
Appendicitis	Officers and cadets	4	8.28
	Enlisted strength	0	0
Asthenopia	Officers and cadets	2	4.14
	Enlisted strength	0	0
Alcoholism	Officers and cadets	0	0
	Enlisted strength	11	24.31
Aphonia	Officers and cadets	0	0
	Enlisted strength	1	2.21
Bronchitis	Officers and cadets	52	107.64
	Enlisted strength	7	15.47
Carbuncle	Officers and cadets	1	2.07
	Enlisted strength	0	0
Circumcision	Officers and cadets	24	49.68
	Enlisted strength	0	0
Corns	Officers and cadets	42	86.94
	Enlisted strength	0	0
Cystitis	Officers and cadets	2	4.14
	Enlisted strength	1	2.21
Conjunctivitis	Officers and cadets	10	20.70
	Enlisted strength	2	4.42
Catarrh (nasal and pharyngeal).	Officers and cadets	10	20.70
	Enlisted strength	0	0
Coryza	Officers and cadets	24	49.68
	Enlisted strength	18	39.78
Constipation	Officers and cadets	0	0
	Enlisted strength	5	11.05
Cellulitis	Officers and cadets	3	6.21
	Enlisted strength	0	0
Examination of eyes	Officers and cadets	15	31.05
	Enlisted strength	0	0
Exhaustion	Officers and cadets	15	31.05
	Enlisted strength	4	8.84
Fistula of anus	Officers and cadets	1	2.07
	Enlisted strength	0	0
Furuncle	Officers and cadets	43	89.01
	Enlisted strength	22	48.62
Gastritis	Officers and cadets	2	4.14
	Enlisted strength	15	33.15
Hemorrhoids	Officers and cadets	8	16.56
	Enlisted strength	7	15.47
Hernia	Officers and cadets	0	0
	Enlisted strength	3	6.63
Intestinal diseases	Officers and cadets	64	132.48
	Enlisted strength	31	68.51
Ingrowing toe nail	Officers and cadets	2	4.14
	Enlisted strength	0	0
Indigestion	Officers and cadets	93	192.51
	Enlisted strength	23	50.83
Ivy poisoning	Officers and cadets	4	8.28
	Enlisted strength	6	13.26
Influenza	Officers and cadets	126	260.82
	Enlisted strength	16	35.36
Jaundice	Officers and cadets	3	6.21
	Enlisted strength	0	0
Hypertrophy of heart	Officers and cadets	0	0
	Enlisted strength	1	2.21
Laryngitis	Officers and cadets	1	2.07
	Enlisted strength	5	11.05
Malarial fever	Officers and cadets	99	204.93
	Enlisted strength	68	150.28
Malingering	Officers and cadets	0	0
	Enlisted strength	4	8.84
Neuralgia	Officers and cadets	22	45.54
	Enlisted strength	2	4.42
Nervous diseases	Officers and cadets	0	0
	Enlisted strength	4	8.84
Otitis media	Officers and cadets	7	14.49
	Enlisted strength	3	6.63
Pharyngitis	Officers and cadets	28	57.96
	Enlisted strength	8	17.68
Prolapse of rectum	Officers and cadets	0	0
	Enlisted strength	1	2.21

A.—Causes, number, and ratio of admissions for officers, cadets, and enlisted men for the year ending June 30, 1903—Continued.

Causes of admission to sick report.		Number of admissions.	Ratio per 1,000 of mean strength.
Pleurisy	Officers and cadets	0	.....
	Enlisted strength	2	4.42
Rheumatism	Officers and cadets	15	31.05
	Enlisted strength	27	59.87
Synovitis	Officers and cadets	2	4.14
	Enlisted strength	2	4.42
Typhoid fever	Officers and cadets	5	10.35
	Enlisted strength	0	.....
Tuberculosis	Officers and cadets	1	2.07
	Enlisted strength	2	4.42
Tonsillitis	Officers and cadets	43	89.01
	Enlisted strength	14	30.94
Tattooing removed	Officers and cadets	1	2.07
	Enlisted strength	0	.....
Urethral stricture nonvenereal.	Officers and cadets	5	10.35
	Enlisted strength	0	.....
Vaccinia	Officers and cadets	4	8.28
	Enlisted strength	0	.....
Skin diseases	Officers and cadets	11	22.77
	Enlisted strength	3	6.63
Vertigo	Officers and cadets	4	8.28
	Enlisted strength	0	.....
Wounds and injuries	Officers and cadets	146	302.22
	Enlisted strength	112	247.52
Worms	Officers and cadets	1	2.07
	Enlisted strength	0	.....

B.—Record of ophthalmic work done by First Lieut. Theo. C. Lyster, assistant surgeon, U. S. Army, from January 28, 1903 (date from which data have been kept), to June 30, 1903.

The number of cases was about equally divided among cadets and the other members of the garrison. In all, 108 recorded cases have been examined. Seven of these were not tested for any refractive error; the balance, however, were examined, and out of these glasses were prescribed for 73 cases. Homatropine was used only in young children or when necessary in a few special instances.

Among the cases were found the following pathological conditions exclusive of refractive errors:

Central choroiditis (left)	1	Trachoma	2
Glaucoma, chronic	1	Conjunctivitis:	
Senile cataract	3	Acute, both eyes	1
Concomitant convergent strabismus	1	Subacute, both eyes	2
Divergent strabismus	1	Chronic, both eyes	2
Chalazion	2	Pannus	1
Hordeolum	5	Foreign bodies	3
Cellulitis, right upper lid	1		

The following errors in refraction were found:

Compound hyperopic astigmatism	25	Hyperopia	3
Simple hyperopic astigmatism	14	Myopia	2
Compound myopic astigmatism	38	Mixed astigmatism	4
Simple myopic astigmatism	9	Irregular	3
Presbyopia	3		

The uncompleted pathological cases which need attention are—

Central choroiditis	1	Divergent strabismus	1
Glaucoma, chronic	1	Trachoma	1
Senile cataract	3		

The balance of the pathological cases have entirely recovered or improved sufficiently so that they do not desire further treatment. The cases of Chalazion and Hordeoli were operated upon with good results. Two of the cases of senile cataract, the case of divergent strabismus, and the case of trachoma are ready for and desire operative treatment.

C.—Surgical operations performed during the year ending June 30, 1903.

	Cases.
Ingrowing toe nails (9 cadets, performed by Maj. J. D. Glennan; 1 cadet, by Lieutenant-Colonel Havard; 2 cadets, by First Lieut. Theo. C. Lyster).....	12
Tonsilotomy (2 cadets, performed by Captain Stark; 1 cadet, by Major Glennan; 2 soldiers and 3 civilians, by Captain Stark; 2 soldiers, by Lieutenant Lyster; 1 civilian, by Lieutenant Lyster)	10
Circumcisions (10 cadets, performed by Major Glennan, 11 by Captain Stark, 1 by Lieutenant-Colonel Havard, 6 by Lieutenant Lyster, all cadets; and 13 soldiers, by Captain Stark).....	41
Appendectomy (2 cadets and 1 civilian, by Captain Stark).....	3
Removal of tattooing (1 cadet, by Captain Stark)	1
Removal of polypus (1 cadet, by Captain Stark; 1 cadet, by Lieutenant Lyster)....	2
Abscess cervical glands (2 cadets, performed by Captain Stark)	2
Varicocele (2 cadets and 11 soldiers, performed by Captain Stark)	13
Trachelorrhaphy (10 civilians, by Captain Stark).....	10
Uterine curettage (11 civilians, by Captain Stark)	11
Adenoid curettage (3 soldiers, 7 civilians, by Captain Stark)	10
Excision hemorrhoids (1 officer, 9 soldiers, 3 civilians, by Captain Stark)	13
Hystero-salpingo-oophorectomy (1 civilian, by Captain Stark and Doctor Barrows, New York City).....	1
Curettage varicose ulcer (1 civilian, by Captain Stark)	1
Straightening septum of nose (1 cadet, 2 civilians, by Captain Stark).....	3
Excision tubercular gland (1 soldier, by Captain Stark).....	1
Craniectomy (1 civilian, by Captain Stark)	1
Laparotomy for tubercular peritonitis (1 soldier, by Captain Stark).....	1
Amputation right arm (1 civilian, by Captain Stark)	1
Salpingo-oophorectomy, double (1 civilian, by Lieut. George H. R. Gossman) ...	1
Paracentesis of membrana tympani (1 cadet, 1 civilian, and 1 soldier, by Lieutenant Lyster)	3
Nephrectomy (1 cadet, by Doctor Lilienthal, Mount Sinai Hospital, New York City)	1
Hernia, radical operation (3 soldiers, 4 civilians, by Captain Stark).....	7
Perineorrhaphy (8 civilians, by Captain Stark).....	8

APPENDIX F.

REPORT OF QUARTERMASTER AND DISBURSING OFFICER.

OFFICE QUARTERMASTER AND DISBURSING OFFICER,
West Point, N. Y., July 11, 1903.

SIR: In compliance with instructions from your office, per circular No. 15, dated April 14, 1903, I have the honor to submit herewith the following report, in triplicate, of the operations of the quartermaster's department, United States Military Academy; Quartermaster's Department, U. S. Army, and as director of the gas works, United States Military Academy, for the year ending June 30, 1903.

QUARTERMASTER'S DEPARTMENT, UNITED STATES MILITARY ACADEMY.

My duties in this branch are defined in paragraph 14, Regulations of the United States Military Academy, 1902.

Contracts entered into during the year and those made in previous years and remaining in force in part or for the whole of the fiscal year to which this relates are as follows:

No.	Contractor.	Date.	Purpose.
1	The Penn Metal Ceiling and Roofing Co., Limited.	July 22, 1901	Steel ceilings, extension cadet mess building.
2	James O'Toole, jr.	Oct. 24, 1901	Construction of south wing cadet hospital.
3	Hewitt & Warden	Oct. 26, 1901	Electrical conduits, south wing cadet hospital.
4	J. A. Toscani & Co.	Oct. 30, 1901	Marble and tile work, cadet hospital.
5	James O'Toole & Son.	Dec. 17, 1901	Enlarging cadet mess hall.
6	Hewitt & Warden	Dec. 24, 1901	Electric work, cadet mess hall.
7	John H. Parker Co.	Feb. 10, 1902	Construction officers' mess and quarters.
8	The Neuchatel Asphalt Co., Limited.	May 1, 1902	Asphalting, cadet hospital.
9	Dickson & Eddy	June 2, 1902	Anthracite coal.
10	Westmoreland Coal Co. ....	.....do.....	Gas coal.
11	Steele & Condict	June 28, 1902	Reconstructing ice and refrigerating machinery.
12	Standard Oil Co., of New York.	.....do.....	Gas oil.
13	Hewitt & Warden .....	.....do.....	Generator and engine, cadet mess.
14	E. A. Matthews .....	.....do.....	Steam-heating plant and plumbing, cadet hospital.
15	Fitzgibbons Boiler Co.	Sept. 15, 1902	Boilers for cadet mess hall.
16	Eastern Bridge and Structural Co.	Nov. 3, 1902	Roof of cadet mess hall.
17	Alexander S. Traub	Dec. 3, 1902	Completion of cadet mess hall.
18	West Side Foundry Co.	Dec. 4, 1902	Iron stairs, etc., cadet mess hall.
19	J. A. Toscani & Co.	Dec. 10, 1902	Floor tiling, etc., cadet mess hall.
20	The Penn Metal Ceiling and Roofing Co., Limited.	Dec. 18, 1902	Metal ceilings for cadet mess hall.
21	Wrought Iron Range Co.	Jan. 13, 1903	Cooking apparatus, cadet mess hall.
22	Black & Boyd Manufacturing Co.	May 12, 1903	Gas and electric fixtures, new officers' mess and quarters.
23	Brooklyn Fire Brick Works.	May 20, 1903	Floor benches, gas house.

All of the above contracts, with the exception of those numbered 5, 9, 10, 11, 15, 16, and 21, are still in force.

The following improvements and repairs have been made:

Building 5 sentry boxes for use in cadet camp.

Laying 2,000 feet of flooring in post stable.

Repainting office of livery stable.

Excavating, concreting, and ventilating basement, and placing new furnace in quarters 15.

- Building new back and front porches at quarters 39, concreting back area, converting alcove room on second floor into modern bathroom with fixtures complete.
- Enlarging dining room of quarters 27 and building modern bathroom on third floor.
- Draining basement of quarters 29 and 31.
- Building bay window and enlarging porch of quarters 23.
- Converting 2 bathrooms into bedrooms, reflooring 3 bedrooms in quarters 21.
- Painting exterior and interior of restaurant.
- Painting tin roofs of artillery stable.
- Painting tin roof of engine house.
- Painting tin roof of quartermaster's stables.
- Renovating interior of hotel, repairing ranges, relining refrigerators, repairing area walls, bake ovens, reshingling roof of ice house.
- Making storm sash for 3 sets of officers' quarters.
- Making 14 large modern refrigerators.
- Post cemetery, addition to greenhouse 60 feet long by 8 feet wide.
- Painting interior walls, ceilings, and woodwork, cottage in cemetery.
- Repairing leaders and gutters of 35 sets of enlisted men's quarters.
- Painting interior walls, ceilings, and woodwork of 24 officers' quarters.
- Painting and paperhanging interior of band leader's quarters.
- Placing new floors in 5 rooms and halls, new plumbing in bathroom, installing furnace heat.
- Remodeling double set of enlisted men's quarters west of engineer's barracks into officers' quarters.
- Reshingling and repairing roofs of 5 sets of officers' quarters.
- Painting interior walls, ceilings, and woodwork of south guardhouse.
- Reflooring double set of enlisted men's quarters throughout.
- Painting exterior woodwork, roofs, and porches of soldiers' hospital.
- Painting and touching up interior walls, ceilings, and woodwork of cadet hospital.
- Placing metal ceilings in two squad rooms.
- Making eight upright lockers for hospital corps.
- Flooring two rooms in cadet store, connecting two rooms into one by archway, cutting two new doors, and painting interior of four rooms.
- Building seven sets of wooden steps leading up to terrace of new officers' quarters.
- Building picket fence 7 feet high with double and single gates at south-dock ferry.
- Painting lamp-posts and iron railings throughout the post.
- Repairing plaster cornices of drawing academy and painting walls, ceilings, and woodwork of same.
- Painting interior walls and woodwork of hospital steward's quarters on duty at the cadet hospital.
- Building squad room in stable of quartermaster's department and providing same with five upright lockers.
- Excavating basement under quartermaster's storehouse and placing windows in same.
- Excavating basement under carpenter shop and placing windows in same.
- Remodeling basement rooms under barracks of field musicians into modern bathroom and washroom with fixtures complete.
- Concreting floor of furnace room.
- Repairing roof, gutters, and leaders of band-practice room and painting same.
- Building 2 bedrooms in attic of quarters 49.
- Remodeling attic of quarters 48; placing dormer windows, bedrooms, and bathroom with modern fixtures.
- Building 75 feet two-story brick addition to cadet laundry.
- Concreting floor and placing gutters in first floor of laundry.
- Installing 2 new boilers; changing smokestack.
- Repainting interior of post guardhouse and placing new floors in same; installing hot-air furnace.
- Repairing glass roof of gymnasium. Placing new bowling alleys.
- Painting interior walls and woodwork of gymnasium.
- Placing permanent benches in 3 galleries of riding hall.
- Building shower baths in cadet camp.
- Painting and calcimining interior walls, ceilings, and woodwork of all rooms in cadet barracks; repairing floors and laying new floors in eleventh and twelfth divisions; painting porch roofs and laying granolithic sidewalk in front of eleventh and twelfth divisions and in west sallyport.
- Making 150 white-pine box lockers for use of cadets in camp.
- Making 18 large packing boxes for use of cadets in barracks.

Making 400 feet of shelving for attic of library.

Repairing roof, gutters, and leaders of headquarters building.

Painting exterior woodwork of building.

Making wooden window and door screens for six sets of officers' quarters.

Laying 640 feet of sewer and 250 feet of water pipe in cadet camp.

Laying 1,750 feet of 6-inch water main from the corner of the academy building to the hotel.

One hundred and forty feet of subway conduit for steam pipes of a cross section of 5 by 6 feet.

Two 60-horsepower engines installed and 8,000 feet of steam pipe laid.

The steam plants on the post kept in repair and in proper working order.

Two benches with 6 retorts at the gas house renewed.

All plumbing kept in repair during the year.

The cemetery and grounds kept in excellent repair during the year.

The number of requests for small repairs to the houses, plumbing, etc., amounted to 5,700, from which it will readily be seen that the amount of labor and material required for the small every-day repairs occurring about the quarters of the post is enormous.

PUBLIC WORKS UNDER CONSTRUCTION.

Addition and extension of the cadet mess hall, which was being done under contract with James O'Toole & Son, has been greatly delayed, due to the inability of the contractors to handle a work as large as this. The Fidelity and Deposit Company of Maryland, being the bondsmen on the contract, have about completed the work, which included the north wing and kitchen. The south wing is to be done by Alexander S. Traub, who will begin the work of the erection of the structure as soon as the excavation is completed. This work is being done by the post quartermaster. When this building is completed it will be the best and most practical of its kind, the kitchen being supplied with all modern appliances for cooking, cold storage, electric plant for lighting the building and running fans to keep the temperature down.

New south wing to cadet hospital.—This work was being done under contract with James O'Toole, jr., and has been delayed for the same reason as the work on the extension of the cadet mess hall. The same bondsmen were on his contract and are completing his work. The work on this building is completed to the roof line, and the work is steadily advancing toward completion.

I desire particularly to invite attention to the necessity for providing ample storage capacity for coal when the plans are being made for the enlargement of the post. It would be economical to have storage capacity capable of storing a year's supply of coal for the entire requirements of the post. For the last three years the increase in the price of coal has caused the appropriation for fuel and apparatus to be insufficient for the needs of the post. This led to a very careful and exhaustive study of prices of the coal trade, and I discovered that under the present system of determining the prices for coal the minimum price is set for delivery made during the month of April, and that a 10 per cent advance per ton is added to this minimum price for deliveries during each successive month after the month of April until this minimum has been increased 50 cents per ton. The price then remains constant until the following April.

It will be seen from this that a saving of 50 cents a ton can be made on the price of coal for the post provided the coal is stored in April. At the present rate of coal consumption at this post a saving of from \$5,000 to \$7,000 per year can be made by having coal sheds for storing a year's supply of coal when it is selling at the minimum price. As these sheds are merely four walls and a roof, the saving to the Government in the cost of coal would more than pay for the storage sheds in a few years.

The number of animals at the post has increased greatly during the past few years and should be increased at least 50 per cent more in order to furnish proper and efficient transportation facilities for the needs of the post. As it now is, the storage capacity for forage is insufficient. In order to obtain the most economical prices for forage at this post, it is necessary to have delivery made by boat, and in order to do this there should be storage capacity for at least a six months' supply of forage, so as to carry the department over the time during which transportation is shut down by the freezing of the river.

The stables for the public animals are insufficient. It has been necessary for the last few years to make temporary inclosures to protect the animals from the weather. A modern stable of sufficient capacity should be built as soon as practicable.

Statement of the receipts and disbursements under the various heads of appropriations during the year ending June 30, 1903, accompanies this report, marked "A."

QUARTERMASTER'S DEPARTMENT, UNITED STATES ARMY.

The duties pertaining to this Department are enumerated in paragraph 1076, Army Regulations 1901.

Contracts entered into during the year and prior thereto remaining in force in part or for the whole of the fiscal year are as follows:

No.	Contractor.	Date.	Purpose.
1	C. Daly	Apr. 9, 1902	Hard and soft pine wood.
2	Dickson & Eddy .....	.....do	Anthracite coal.
3	Richey, Brown & Donald	May 21, 1902	Steel and iron, upper porch army-service barracks.
4	E. A. Matthews	June 25, 1902	Road and retaining wall.
5	William E. Dante	Aug. 27, 1902	Oats.
6	O'Brien & Kellogg .....	.....do	Hay.
7	Chas. L. Rickerson .....	.....do	Forage and straw.
8	E. A. Matthews	Feb. 24, 1903	Road and retaining wall to southern end of post.
9	The Schilling Co	Feb. 27, 1903	Terazzo flooring, etc., at soldiers' hospital.
10	E. A. Matthews	June 26, 1903	Construction of road.

All of the above contracts except those marked 9 and 10 have been completed. The work on both the last-mentioned contracts is progressing.

The following improvements and repairs were made by the Quartermaster's Department of the Army during the year:

The plumbing at the soldiers' hospital was entirely renovated, making a lavatory for each ward composed of shower baths, water-closets, and basins, with linen closets opening upon the hall. The entrance into the lavatories is from the wards through a vestibule. A third lavatory for the attendants has been placed upon the second floor of the hospital.

Upright lockers for the field musicians were installed in their barracks.

General repairs to the quarters occupied by the officers on duty with the troops and of the married enlisted men.

Road from the south dock to the south end of post.

I desire to invite particular attention to this road, which, in my opinion, is one of the important improvements of the post. It will greatly facilitate the transportation of persons and material from the railroad station and south dock to the south end of the post, saving both time and expense. It will be a most economical investment when completed. This road will be 2,779 feet long, rising by an easy grade of 8.33 per cent for 880 feet; then follows a bench with a grade of 2 per cent for 783 feet 9 inches, and then rising to the level of the main road of the post by a grade of 6.25 per cent for 1,115 feet 3 inches.

At the south end, where it will join with the main road of the post, it will link together a number of roads from different sections of the post, furnishing ready and expeditious communication with the railroad station, the ferry, and the south wharf.

The work on this road, which was originally begun on January 28, 1901, and which has been going along very slowly until last year because there was no money available for this work particularly, has now made good progress, and with the appropriation of \$30,000, which is asked for in the Military Academy bill for the fiscal year 1904, and such money as can be contributed to it from the general funds of the Army for road making, should complete the road entirely.

The following is an approximation of the work which has been done on this road:

Beginning at the south end of the road, for a distance of 360 feet it is completed and ready for the macadam. From this section about 800 cubic yards of earth have been excavated.

From the 360-foot point to the 500-foot point the road level averages 3 feet below the grade, and about 360 cubic yards of filling have been completed.

From the 500-foot point to the 800-foot point the road level averages 5½ feet below the grade. The completed retaining wall averages 14½ feet high, 7 feet wide, and contains 1,130 cubic yards of stone. About 370 cubic yards of fill have been made along this section.

From the 800-foot point to the 1,200-foot point the road averages 3 feet below the grade. The retaining wall averages 9 feet high by 7 feet wide and contains 890 cubic yards of stone. About 1,000 yards of filling have been done along this section.

From the 1,200-foot point to the 1,400-foot point this section is ready for the macadam, and the breast-high wall is completed except the coping. Five hundred and eighty cubic yards of retaining wall have been built and 200 cubic yards of rock excavated from this section.

From the 1,400-foot point to the 1,600-foot point the road level averages 2 feet below the grade. One thousand cubic yards of rock have been excavated, 3,000 cubic yards of retaining wall built, and 450 cubic yards of fill made.

From the 1,600-foot point to the 1,740-foot point this section is ready for the macadam. About 4,600 cubic yards of rock have been excavated from this section.

From the 1,740-foot point to the 2,370-foot point there has been practically no work done. About 25 yards of retaining wall have been built, and about 50 cubic yards of rock excavated. Considerable rock has been cleaned off along this section, making it ready for blasting, but the total work done on the section is very slight compared with what has to be done between these points.

From the 2,370-foot point to the 2,779-foot point the road level is nearly ready for the macadam. One thousand four hundred and eighteen cubic yards of rock have been excavated, and 431 cubic yards of concrete wall, with foundation for same, have been built.

An approximate estimate of the work still to be done on this road is as follows:

To be excavated	cubic yards..	8,000
Filling	do....	3,700
Retaining wall	do.....	820
Concrete	do.....	150
Breast-high wall	linear feet..	2,170
Granolithic sidewalk	do.....	2,779

I most earnestly urge the pushing of this road to a rapid completion on the lines on which it has been laid out.

TRANSPORTATION.

In addition to the ordinary every day demand upon this office for draft purposes and daily policing of the post, transportation has been furnished for the hauling of the following:

One thousand six hundred and eighty tons of forage; 8,500 tons of coal; 200 cords of wood; material for the repair of over 18 miles of roads and paths; 387 tons of building materials; 360 tons of subsistence stores; 751 loads of clothing and equipment; 313 loads of supplies for post exchange; 360 loads of gravel; 900 cubic yards of sand, and 1,000 barrels of tar.

POST CEMETERY.

The total number of interments in this cemetery which was first laid out in 1816 up to include June 30, 1903, is 1,229. The number of interments from July 1, 1902, to June 30, 1903, is 31. The care and maintenance of this cemetery is provided for in the appropriations of the United States Military Academy.

Experience in the past has shown the necessity of a receiving vault at the post cemetery, due to the increase in the number of bodies which are being brought here from other places for interment in this cemetery.

In this connection I desire to invite attention to the pay of \$900 given Mr. Rhodes, the superintendent and keeper of the post cemetery, who not only has charge of the interments, but the keeping up of the grounds and everything pertaining thereto. He should really be designated as the superintendent and gardener of the post cemetery, and his pay should be raised to \$1,200 a year, for he is well worth the same, and his duties more than warrant such a raise in his pay.

DETACHMENT OF ARMY-SERVICE MEN, QUARTERMASTER'S DEPARTMENT.

The detachment of army-service men of the quartermaster's department has now a strength of 150 men. It would seem on the surface that this number of men would be sufficient for the purposes for which they are used, but upon a careful examination of the roster indicating the duties on which these men are engaged it will be seen that, after deducting the men who are on permanent duties, such as janitors, clerks, policemen, teamsters, mechanics, etc., the number of men available for general laboring work does not average more than 12, provided none of the men are on sick report. It is readily seen that it is impossible to answer the calls for handling the enormous amount of freight which arrives at this post, do such moving of property as is necessary about the post, and all the general work which comes up in different shapes and forms during the day with 12 men. The result is it is necessary to hire a large number of civilians for work which should be done by men of the army-service detachment. For this reason I most urgently recommend that the strength of the detachment be increased to 200 men, and I have, with the authority of the Superintendent, introduced into the estimate for the Military Academy for the fiscal year 1904 an item increasing the strength of this detachment to 200 men.

I feel that the men of this organization as a class, if properly handled, render services as good in quality and greater in quantity than the civilian employees who are hired in large numbers during the working season of the year. It is not only more economical for the Government to increase the strength of this detachment than it is to hire civilians to do the work done by these men, but the men themselves are always on hand to respond for any emergency calls which are made upon them outside of the usual working hours of the day.

DISBURSEMENTS.

The amounts received, disbursed, etc., under the various heads of appropriations are shown in the accompanying statement marked "B."

GAS WORKS UNITED STATES MILITARY ACADEMY.

As director of the gas works, I am charged with providing the necessary illuminating gas for the needs of the post. The revenue derived from the sale of gas, coke, and tar is applied to payment of the civilian employees at the gas works and purchase of gas coal if the appropriation therefor is not sufficient and for miscellaneous expenses not provided for by the annual appropriations of Congress. Gas is charged for at the rate of 75 cents per 1,000 feet for all persons using it for personal use and for public buildings which is chargeable to the United States Quartermaster's Department, except cadets who pay 35 cents each month to the gas fund irrespective of the amount of gas used by them.

Coke is sold at \$1.17 per 18 bushels. During the past winter it was sold by the wagon load at the same proportionate price and in such a manner as to aid greatly the inhabitants of the adjoining village of Highland Falls and to mitigate in a great degree the suffering incident to these people from the scarcity of coal due to the coal strike of the preceding summer.

It is customary to receive bids for the yearly output of tar. The recorded price for it during the past fiscal year has been $2\frac{1}{2}$ cents per gallon.

During the fiscal year 23,646,600 cubic feet of gas were manufactured, which is an increase of 2,303,800 cubic feet over the preceding fiscal year; 5,301,000 pounds of gas coal and 4,700 gallons of oil were used in the manufacture of this gas.

In this connection special attention is invited to the increased demand upon the gas works during the past fiscal year. The capacity of the holders when full is 83,000 cubic feet, and sometimes during the winter the amount of gas consumed in twenty-four hours has been over 100,000 cubic feet; in fact, throughout the winter months the consumption of gas averages for the twenty-four hours more than the storage capacity which necessitates the entire plant being kept in action day and night, and in case of any accident or breakdown of any kind would leave the post short of gas.

It will be some years before the new power plant can be erected, and I would recommend an increase of the present gas plant simply as a prevention against the complete loss of ability of illuminating the post and the buildings thereon in case of a breakdown of the gas plant.

The present superintendent of the gas works, Mr. Long, is a most able, capable, and earnest man with his work. It is due entirely to his efficiency that the plant has been able to cope with the demand upon it, which is shown above to be nearly 25 per cent greater than its capacity.

The receipts and disbursements pertaining to the gas works are shown in the statement of special contingent fund marked "C."

The amount of gas manufactured during the fiscal years 1902 and 1903 are given in months in an appendix marked "D."

SPECIAL CONTINGENT FUND UNITED STATES MILITARY ACADEMY.

This fund is derived from the rent of hotel, stables, store, post-office, and miscellaneous receipts.

Expenditures from this fund are made under direction of the Superintendent, under authority of chapter 212, act of Congress, May 1, 1888.

Expenditures for the repairs of the buildings which pay rent are made from this fund into which the rental goes. The estimate of the receipts and disbursements are included in the statement marked "C."

* * * * *

Very respectfully,

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Quartermaster U. S. Military Academy,
Post Quartermaster and Director of Gas Works.

The ADJUTANT U. S. MILITARY ACADEMY.

REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY. 45

A.—Statement showing receipts and disbursements, etc., of funds pertaining to the appropriations for the support of the United States Military Academy during the fiscal year ending June 30, 1903.

To whom paid.	Date.	Current and ordinary expenses.	Miscellaneous items and incidental expenses.	Buildings and grounds.	Memorial Hall.	Total.
Cr.						
Balance on hand fiscal year:						
1899	July 1, 1902	\$18.00				\$18.00
1900				\$2.52		2.52
1901		1,896.60	\$45.44	774.72		2,716.76
Deficiency June 30—						
1901		368.02	.85	42.93		411.30
1901-2		1,294.32	207.89	40,181.32		41,683.53
1902		6,372.87	773.21	14,471.01		21,617.09
Urgent deficiencies June 30, 1902.		2,815.47	1,208.42	.04		44,023.93
Memorial Hall					\$4,000.55	4,000.55
Received since fiscal year—						
1899		144.00				144.00
1901-2				6,000.00		6,000.00
1902				21,367.22		21,367.22
1903		90,838.35	38,293.00	84,826.00		213,957.35
1903-4		110.00	1,019.00	32,000.00		33,129.00
B. and G. (no year):						
Officers' quarters and mess ..				108,950.00		108,950.00
Enlarging the Military Academy ..				110,000.00		110,000.00
Terrace platform, Memorial Hall ..				5,000.00		5,000.00
Total		103,857.63	41,547.31	423,615.76	4,000.55	573,021.25
DR.						
Deposited fiscal year 1901	June 30, 1903	1,896.60	45.44	774.72		2,716.76
Deficiency June 30, 1901	do	368.02	.85	11.93		380.30
Urgent deficiencies June 30, 1902.	do	140.65	3.54	.04		144.23
Disbursed fiscal year:						
1899	do	162.00				162.00
1900	do			2.52		2.52
Deficiency June 30—						
1901	do			31.00		31.00
1901-2	do	1,050.47	38,347.70			39,398.17
1902	do	5,102.29	677.26	21,704.78		27,484.33
Urgent deficiencies June 30—						
1902	do	2,674.82	1,204.88			3,879.70
1903	do	85,439.08	34,018.44	63,116.35		182,573.87
1903-4	do	92.25	218.95	8,406.39		8,717.59
B. and G. (no year):						
Officers' quarters and mess ..	do			93,089.61		93,089.61
Enlarging the Military Academy ..	do			57,557.53		57,557.53
Balance on hand fiscal year—						
1901-2	do	243.85	207.89	7,843.62		8,295.36
1902	do	1,270.58	95.95	14,133.45		15,499.98
1903	do	5,399.27	4,274.56	21,709.65		31,383.48
1903-4	do	17.75	800.05	23,593.61		24,411.41
B. and G. (no year):						
Officers' quarters and mess ..	do			15,860.39		15,860.39
Enlarging the Military Academy ..	do			52,442.47		52,442.47
Terrace platform, Memorial Hall ..	do			5,000.00		5,000.00
Memorial Hall	do				4,000.55	4,000.55
Total		103,857.63	41,547.31	423,615.76	4,000.55	573,021.25

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Disbursing Officer United States Military Academy.

WEST POINT, N. Y., July 11, 1903.

46 REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY.

B.—Statement of funds pertaining to the Quartermaster's Department, United States Army, received and disbursed during the fiscal year ending June 30, 1903.

Balance on hand June 30, 1902.....	\$12,964.15
Received since:	
Regular supplies	51,830.03
Incidental expenses	11,512.41
Transportation of the Army	27,708.85
Barracks and quarters	4,932.10
Hospitals	5,716.01
Clothing and equipage	390.30
Sales to officers, etc	6,170.43
Sales at auction	877.15
Total to be accounted for.....	<u>122,101.43</u>
Disbursed:	
Regular supplies	56,332.04
Incidental expenses	11,441.27
Transportation of the Army.....	26,738.79
Barracks and quarters	6,229.99
Hospitals	3,617.25
Clothing and equipage.....	799.93
Deposited	7,808.86
Balance on hand June 30, 1903.....	<u>9,133.30</u>
Total.....	122,101.43

J. B. BELLINGER,
Major and Quartermaster, U. S. Army.

WEST POINT, N. Y., July 11, 1903.

C.—Statement of receipts and expenditures pertaining to the special contingent fund, United States Military Academy, from July 1, 1902, to June 30, 1903.

Balance on hand July 1, 1902	\$1,062.05
Amounts received:	
Hotel	\$2,000.00
Post-office	112.50
Stables	310.00
Store	312.50
	<u>2,735.00</u>
From sale of—	
Gas	7,815.17
Coke	1,139.63
Coal tar	663.78
Miscellaneous	665.95
	<u>10,284.53</u>
Total to be accounted for	14,081.58
Disbursed	10,964.12
On hand June 30, 1903	<u>3,117.46</u>

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Treasurer Special Contingent Fund, U. S. Military Academy.

WEST POINT, N. Y., July 11, 1903.

REPORT SUPERINTENDENT OF U. S. MILITARY ACADEMY. 47

D.—Statement of gas manufactured from July 1, 1901, to June 30, 1903, showing quantity of coal and oil used in manufacture.

Month.	Coal used.	Gas made.	Oil used.
	<i>Pounds.</i>	<i>Cubic feet.</i>	<i>Gallons.</i>
1901.			
July.....	188,300	923,700	372
August.....	192,400	925,600	372
September.....	347,300	1,361,800	801
October.....	392,800	1,886,600	620
November.....	498,900	2,055,600	600
December.....	581,600	2,540,400	620
1902.			
January.....	594,800	2,611,600	620
February.....	514,800	2,247,900	560
March.....	458,000	2,044,300	590
April.....	408,800	1,818,300	420
May.....	388,900	1,573,500	350
June.....	300,300	1,429,300	200
Twelve months.....	4,811,700	21,424,600	6,125
1902.			
July.....	252,700	1,117,100	155
August.....	259,300	1,186,200	155
September.....	382,500	1,686,600	316
October.....	456,900	2,005,100	465
November.....	536,800	2,313,000	600
December.....	649,900	2,776,000	640
1903.			
January.....	642,500	2,845,600	558
February.....	518,800	2,361,800	520
March.....	500,600	2,303,000	385
April.....	427,100	1,906,000	300
May.....	338,600	1,541,900	310
June.....	335,300	1,547,300	300
Twelve months.....	5,301,000	23,652,600	4,704
	4,811,700	21,424,600	.....
Increase.....	489,300	2,228,000	.....

Respectfully submitted.

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Director of Gas Works, U. S. Military Academy.

WEST POINT, N. Y., July 11, 1903.

APPENDIX G.

REPORT OF THE INSTRUCTOR OF ORDNANCE AND GUNNERY.

WEST POINT, N. Y., *May 20, 1903.*

SIR: In compliance with instructions in circular No. 15, of April 14, 1903, I have the honor to submit the following report of the principal operations in and connected with the department of ordnance and gunnery, the office of post ordnance officer, etc., at the United States Military Academy during the fiscal year ending June 30, 1903:

LABORATORY.

Beyond the necessary repair work, painting, etc., to keep the laboratory buildings properly preserved, nothing specially noteworthy has been done at the laboratory during this fiscal year, except that metal ceilings to replace plaster, which was falling in many places, have been installed in the principal rooms.

The routine work of caring for and preserving the service and obsolete ordnance, trophy guns, etc., at the post; the repair and supply of ordnance material necessary in the practical instruction of cadets in their various duties, and the preparation of ammunition, blank cartridges, and fireworks have all been satisfactorily performed.

The ordnance detachment continues in a high state of efficiency. The daily details from the detachment for the post guard have been required during the year. It is hoped that this requirement may soon be modified, for it so reduces the available strength of the small detachment that, with the exception of the winter months, it interferes with the satisfactory performance of all the other varied duties.

MUSEUM.

Contributions continue to be made to the interesting and valuable collection which is exhibited in the ordnance museum. Additions during the year, besides articles contributed by officers of the army in the Philippines, have been: By the family of the late Gen. William Ludlow, interesting articles from Japan, Egypt, Cuba, and Nicaragua; by the daughter of the late Capt. J. B. Scott, a handsome sword presented to her father in 1847 by the citizens of New Haven, Conn.; by Señor Antonio San Miguel, of Habana, a handsome Toledo blade from his own collection; by Maj. Lea Febiger, a case used by Gen. George H. Thomas; and by the widow of the late W. R. Whitehead, M. D., of Denver, Colo., a very complete "collection of old-time arms, armor, etc.," consisting of nearly 200 items, nearly all of which differ from anything now on hand.

In my report for the fiscal year ending June 30, 1902, I stated:

"The museum is very much crowded, and to provide space for the proper care and exhibition of the late additions it has been necessary to remove and store many older and less interesting exhibits; many of these are, however, of sufficient interest to be shown.

"In addition to its value for purposes of instruction, the museum is one of the most interesting features of the post to the thousands of citizens who visit it every year, and more room should be provided for this valuable collection, at the earliest possible date, to permit the proper exhibition of all the articles on hand."

The conditions then stated become more pronounced as time passes and emphasize the necessity of providing more room at the earliest possible date. I can not too strongly invite attention to this matter and commend it to the most serious consideration.

During the past year, estimating the ten days from this date to May 31, the museum has been visited by more than 61,000 persons. The greatest number of visitors in any one day was 3,842. During the summer there were about 40,000 visitors, in the spring and autumn the average was about 6,000 per month, and during the winter about 500 per month. Needed repairs and additions to models, cases, etc., have been made during the year.

MODELS.

The models of machines and of service cannon, carriages, projectiles, etc., used in cadet instruction in this department have been added to during the year by the manufacture of one complete drill press, one-fifth size, and a model of the boring and turning lathe used in manufacture of large guns is now in a well-advanced stage of completion.

In addition there have been furnished by the Ordnance Department for use in connection with the theoretical instruction of cadets—

- 1 shrapnel, 3-inch, sectionalized.
- 10 boards fuzes of the the various types in service.
- 1 board axial and radial vent friction primers.
- 1 board electric primers.
- 1 board electric primers, obturating.
- 1 board friction primers, obturating.
- 2 boards combined electric-friction primers, obturating, for seacoast guns and mortars.
- 2 boards friction primers, obturating, siege, model 1902.
- 1 board, caliber .30, cartridge and parts.
- 2 cartridge cases, 6-pounder, sectionalized.
- 1 shrapnel, 3.2-inch, B. L. R., sectionalized.
- 1 sample breech mechanism of United States magazine rifle, caliber .30, model 1898, skeletonized.

And the following has been added to the post ordnance material for use in practical instruction of cadets:

- 4 artillery drill cartridges for 75-millimeter Vickers-Maxim mountain gun.
- 1 1-pounder subcaliber gun, complete, with fixtures, accessories, and spare parts for 8-inch B. L. R., model 1888.
- 2 subcaliber attachments, caliber .30, complete, for 5-inch siege rifle, model 1898.
- 2 subcaliber attachments, caliber .30, complete, for 7-inch siege howitzer, model 1890.

Very respectfully,

F. E. HOBBS,

Captain, Ordnance Department, U. S. Army, Instructor Ordnance and Gunnery.
The ADJUTANT U. S. MILITARY ACADEMY.

APPENDIX H.

REPORT OF THE LIBRARIAN.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 20, 1903.

SIR: I have the honor to submit the following report upon the work of the library for the period August 20, 1902, to May 20, 1903, with some data relating to the period since November 1, 1901, when I reported for duty:

Personnel.—The working force has consisted of the librarian and four enlisted men, one of whom acts as janitor. The Military Academy appropriation bill for the fiscal year 1902-3 provided for a librarian and a librarian's assistant. Under its provisions Dr. Edward S. Holden was appointed by the Secretary of War to the former position in July, 1902. Mr. W. L. Ostrander was appointed assistant on May 18, 1903. The force available during the past year has not been sufficient to do even the routine work of the library in a thorough manner, and therefore only the most important matters have been attended to, while others have necessarily been put to one side for the present.

Users of the library.—The library is used by 81 officers attached to the academy, by their families, by 446 cadets, by 20 enlisted men, and by 35 civilians to whom its privileges have been extended by order of the Superintendent.

Number of books.—The number of books and pamphlets reported in the library on November 1, 1901, was about 46,000. This number included many duplicates. It has not yet been possible to make a count of the books, nor will it be advisable to do so until the whole collection has been rearranged.

Accessions since November 1, 1901.—Four thousand seven hundred and eighty-eight books, pamphlets, maps, etc., have been added to the library since November 1, 1901. Periodicals purchased are not included in this count. Substantially every book received has been catalogued, and is now on the shelves in use.

Periodicals.—The list of periodicals subscribed for was thoroughly revised by the library committee in the autumn of 1902, after consulting many of the officers of the post. We now subscribe for 142 periodicals which will be continued year by year. Most of these will be bound and preserved on our shelves. A few are kept for a year only and then turned over to the post library for enlisted men. A list of all the periodicals received by this library, by the department libraries, and by the cadet societies (Young Men's Christian Association and Dialectic), by gift and subscription, includes 265 periodicals. The literature and science of to-day are thus fully available to our readers.

Recent fiction.—The library subscribes to the Tabard-Inn Library of Philadelphia, and has the right to keep 125 of the Tabard-Inn books in circulation, changing any or all of them once monthly. The plan has worked well on the whole. We are able to see the newest books, and are freed from the necessity of lumbering up our shelves with books many of which are of trifling literary value. There are 446 cadets in the corps; 125 new novels in circulation among them would seem to be a sufficient provision. All standard works of English fiction, and many in French, Spanish, Italian, and German, are owned by the library of the United States Military Academy.

Statistics of circulation.—The force of the library has been too much occupied to permit of the collection of full statistics of circulation. The following items will be of interest:

On March 6, 1903, the library was visited by 12 officers, 52 cadets, 23 ladies, 18 civilians, and 2 children; total, 107.

On March 14, 1903, books were issued to 18 officers, 26 cadets, and 6 civilians; total, 50.

During the months of November, 1902, to March, 1903, the corresponding numbers were considerably larger.

During the month of November, 1901, 750 books were drawn from the library by cadets, as follows:

	Volumes.
Fiction (usually the same books over and over again)	600
History and literature (including some standard fiction)	105
Science (usually text-books)	18
Military	27

The data for other analyses of the kind are on file, but have not been discussed for lack of time.

Library committee.—The library is under the general charge of a library committee of four members of the academic board, viz, the professors of drawing, chemistry, modern languages, and engineering. Their advice is constantly at command, and on all important questions advice has been sought from and freely given by other members of the board and by officers on duty in the departments.

Lectures to cadets.—By direction of the Superintendent a lecture to the fourth class of cadets was given on October 11, 1902, by the librarian, on the best methods of utilizing the library's collections by cadets during their term at the academy. The librarian has been freely consulted by cadets in respect to their reading during the year.

Special exhibitions of books.—Special books have been brought together in the main room for easy consultation by cadets at various times. Collections of the sort have been made for the class for Bible study; a collection of historical novels was made in December for the use of cadets studying history, etc. The new books are placed together in special cases, where they remain for several months, so that every cadet may see and handle all accessions.

Engraved portraits and photographs of graduates.—The library owns the class albums of graduates since 1857 (with the exception of 1858, 1860, 1861, 1862, 1867, 1872, 1873, and 1874) and a large number of groups and single photographic portraits not yet classified. During the year an effort was made to secure for the association of graduates a copy of an engraved portrait of each graduate, and such portraits were obtained for 451 out of our 4,000 graduates.

Permanent exhibition of memorabilia.—Frames in the library have been arranged to contain portraits, maps, manuscripts, and other memorabilia relating to West Point, to the academy, to the Revolution, to the civil war, to the war with Mexico, and to the Spanish-American war. Most of these are the property of the library. Many are loans. Every precaution is taken to insure the safety of these valuable mementos.

Photographs and illustrated books.—There is no quicker way to exhibit to the young gentlemen of the Corps of Cadets a picture of the world from which their isolation and their duties shut them out than to display on the library tables and walls collections of photographs, engravings, and maps. Information received through the eye is easily acquired and long retained. During the year many such collections have been exhibited, of which two deserve special mention. The first is contained in 32 albums of photographs of the Philippines and China presented by the Chief of Engineers United States Army. The second is a large collection of photographs of the masterpieces of Italian art. The method thus put into operation can be carried very much further with great advantage.

Military manuscripts.—An earnest effort has been made to collect and to examine military manuscripts, especially such as relate to the history of West Point and the United States Military Academy. The principal series are:

The Cullum manuscripts in the possession of the Association of Graduates United States Military Academy. These manuscripts have been carefully examined by Capt. Bertram C. Gilbert, Artillery Corps, and by myself. They include many letters by Colonel Thayer.

The Swift manuscripts loaned to the United States Military Academy by the heirs of Gen. J. G. Swift, first graduate (1802) of the United States Military Academy. These priceless papers were, by the great kindness of General Swift's heirs, deposited in the library in October and November, 1902, and have been thoroughly examined by Captain Gilbert and myself.

Miscellaneous manuscripts, orderly books of the Revolution, etc., in the library of the academy have been thoroughly searched by Capt. Gordon Heiner, Artillery Corps, and by myself.

Manuscript records of the Dialectic Society United States Military Academy, ditto.

The manuscript papers (returns, reports, orderly books, letters, etc.), written at West Point in the years 1795 to 1829, which were transferred (in February, 1903), from the records of the Schuylkill Arsenal to the United States Military Academy,

through the courtesy of Capt. John T. Knight, U. S. Army, by authority of the Quartermaster-General and of the Adjutant-General U. S. Army, have been searched as thoroughly as time allowed, by myself.

Manuscripts, orderly books, and regimental returns of West Point during the Revolution belonging to the Pocumtuc Valley Memorial Association of Deerfield, Mass., were most kindly loaned to us for examination in 1903, through the kindness of the president and secretary of the association, and have been searched by myself.

The General Orders, Headquarters United States Military Academy, from February 19, 1838 (the date of the disastrous fire which destroyed the records of the academy) to 1857, were examined by Lieut. A. F. Casad, Artillery Corps, during November, 1902. Capt. Gordon Heiner, Artillery Corps, has been good enough to continue this examination from 1857 to 1902; and Capt. Frederick W. Sladen, Fourteenth Infantry, has gone over the same records independently.

Capt. H. M. Reeve, Third Infantry, U. S. Army, during the summer of 1902, thoroughly searched the manuscripts of the State Department and of the library of Congress and made accurate copies of all documents relating to the academy, which he kindly transmitted to us.

The library hopes to receive shortly the manuscript papers of Gen. George B. McClellan; the manuscript papers of Gen. H. W. Halleck; a number of the manuscript papers of Gen. W. T. Sherman; the manuscript papers of Gen. W. S. Hancock; the manuscript papers of Capt. Alden Partridge, superintendent United States Military Academy 1814-1817; the manuscript papers of Colonel Gratiot, inspector United States Military Academy 1828 to 1838.

Bibliographies.—From the foregoing and other materials I have made the following bibliographies, which are now in manuscript:

1. A bibliography of West Point 1694-1902, its history, maps, views, etc. (about 900 titles).

2. A bibliography of the United States Military Academy 1776-1902 (about 2,000 titles).

3. A bibliography of the writings of all graduates United States Military Academy from 1802 to 1902, about 4,000 in number, including list of their portraits and statues and references to their obituary notices (about 17,000 titles).

4. A list of the names of all members of the Board of Visitors United States Military Academy 1819 to 1902 (about 1,000 titles). Total, about 21,000 cards.

Shelf room.—The report of Captain Kuhn (1902), under whose supervision the library was fitted with shelves, says that more stacks will soon be needed. That time has now arrived, and it is hoped to supply the most pressing wants during the summer of 1903. When the appropriation for building the new academy becomes available it is hoped that funds may be allotted for the following pressing needs:

1. A fireproof floor to the attic.

2. Fireproof shelving throughout the attic.

3. Wall cases to be continued to the ceilings throughout library.

4. The basement to be fitted with fireproof stacks.

Maps and charts.—Our collection has been arranged, catalogued when necessary, and made available for convenient reference. Some 1,300 maps have been backed with linen during the year. A great number of State, county, and road maps (including bicycle routes) has been added. This department of the library still requires many additions and improvements. If the library had a room with wall spaces suitable for the display of maps and charts much could be done in the way of educating the cadets in military geography. This is an important matter as there is no such course in our curriculum.

Congressional documents.—All our Congressional documents are now bound and arranged on the shelves in order. Steps have been taken to complete our series which is already very full.

Officer's study room.—A large room is devoted solely to the use of officers. Here all purely military works are kept (duplicates of the more important are shelved in the lower rooms). The study room is a valuable innovation and it has been in constant use by instructors engaged looking up matters connected with their teaching and by officers working on their own account or in special volunteer work in aid of the library.

Volunteer work of officers.—Seeing the necessity for skilled assistance several officers have volunteered to do special pieces of work in aid of the library. Complete author-indexes to various military journals have been made by Captain Willcox, Captain Roberts, and Capt. R. C. Davis. The bibliography regularly published in the journal of the United States artillery has been each month placed on cards by Captain Bowley. A complete card catalogue of all campaigns and battles is in process of making by Lieutenant Jewell. Other valuable volunteer work by officers is mentioned under the head of military manuscripts (above).

Paul Larned, candidate United States Military Academy, has examined several thousand portraits of graduates, and aided in the selection of the best.

Binding.—The binding of our books is very much in arrears. Since November 1, 1901, about \$2,400 has been expended for the purpose. It could be more economically done if the library possessed a bindery of its own. One workman would be sufficient.

Catalogue department.—Very much remains to be done to make our catalogues helpful to our special class of readers. The subject catalogue, in particular, requires extensive additions. All books received since November, 1901 have been catalogued under all the appropriate catchwords. The author catalogue was separated from the subject catalogue during the winter of 1902-3. During the year the principal cards of nearly every book have been written by Corporal Maher. The books with the cards are then sent to the librarian's desk and the cards are revised and completed by him before being placed on the shelves. I desire to call especial attention to the very intelligent and faithful work of Corporal Maher in this department. At least 21,000 cards have been added to the catalogue since November, 1901.

The Dewey system is followed in the classification except for fiction, biography, periodicals, and military works. The present classification of the latter class of books is entirely unsatisfactory. I have therefore worked out a new scheme, on about 10,000 cards, which is now in the hands of Doctor Dewey. It has been revised and criticised by various officers of the army at West Point and elsewhere, and it has been compared with the scheme of the International Bibliographic Bureau by Captain Willcox of the Artillery Corps. To all of these gentlemen our best thanks are due.

Libraries of the departments, United States Military Academy.—Each of the departments of the academy has a special library, kept in its own rooms, where the books are immediately available to the instructors. With the cooperation of the heads of the departments it is hoped to make a complete card catalogue of all such books (on yellow cards) and to insert the cards in their proper order among the (white) cards of our own catalogue. In this way a complete inventory of the books owned by the Government at this post will be obtained; this list will be very useful to officers; and it will be an important guide to the United States Military Academy library in its purchases. About 1,000 cards have already been written.

Library of the association of graduates.—By a resolution of the council, the association of graduates voted to lend its collection of books to the United States Military Academy library. This will be kept in a case of its own in the officers' study, where it will be more available to graduates than in its former narrow quarters in Memorial Hall.

Books relating to West Point.—A special effort has been made to purchase every book and pamphlet relating to the history of West Point and of the United States Military Academy, and to collect and bind all books and manuscripts of the sort already in our collections. The case devoted to this special department now contains 341 bound volumes.

Additions to the building and fixtures.—The quartermaster United States Military Academy has taken especial interest in putting the library building and its fittings into convenient and safe condition, and a very considerable amount of work has been done under his direction during the year. The attic rooms have been floored and shelved (with wood). Temporary wooden shelves have been placed on the tops of the steel wall cases (and also on the tops of the steel stacks in the officers' study by Captain Kuhn, Corps of Engineers). All the chandeliers of the main room have been lowered 4 feet, with excellent results. Gas has been introduced into the basement and the attic. A number of new electric lamps have been put in. New steam coils have been provided for the rooms with a north exposure, etc. All these additions were necessary, and it has been a great advantage to the library to have them so promptly made.

Memorial volume.—A volume to be memorial of the centennial of the academy has been edited, under the direction of the academic board, by myself. The manuscript is now very nearly completed. It is to contain the addresses made at the jubilee, and chapters covering the services of the graduates during the period 1802-1902, etc. A great part of my own time during the past year has been given to the editorial work.

Service.—The service of the library has been performed intelligently and cheerfully, under some unavoidable disadvantages, by Corporal Maher and Privates Brownley and Boyle, library attendants, and by Private Cody, janitor. The addition of a competent clerk to the force (in May, 1903), will enable the library work to be systematized and extended.

Gifts.—At the end of this report a list of presents received during the year is given. Special mention should be made of gifts from Mr. S. P. Avery, of New York, and for his generous permission to copy his splendid portrait of Washington (the Gibbs-

Channing portrait by Gilbert Stuart), which has never before been copied; and for the gift of the Army and Navy of the United States (edition de luxe) from Loyall Farragut, esq., United States Military Academy, 1868.

Conclusion.—The experience of the past year has shown that the library may be made very useful to the cadets of the academy. These young gentlemen are at West Point during a very impressionable part of their lives, and they see only such things as are exhibited to them here. The work of the academic departments can be enforced, and to a slight degree, supplemented, by the library; and at least a glimpse of the world outside of the experience of cadets can be exhibited through its books. With the cooperation of the academic board a beginning has been made in this direction, which promises well for the future.

Respectfully submitted.

EDWARD S. HOLDEN, *Librarian.*

The SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

List of gifts to the library.

Name of donor.	Books.	Pam- phlets.	Charts.
Adjutant-General United States Army.....	5		
Adjutant-general State of North Carolina.....	2		
Adjutant-general State of South Carolina.....	1		
Adjutant-general State of Connecticut.....	1		
Adjutant-general State of Florida.....	1		
Adjutant-general State of Michigan.....	1		
Adjutant-general State of Virginia.....	4		
Adjutant-general State of West Virginia.....	1		
Adjutant-general State of Rhode Island.....	1		
Adjutant-general State of New Hampshire.....	1		
Adjutant-General's Department.....	2		
Altstaetter, Lieut. F. W. (number of maps).			
American Scenic and Historical Preservation Society (1map).			
Army Officers Athletic Association.....		2	
Avery, S. P., New York City (1 engraving).....	1		
Barrie, George, & Son..... (1 engraving).....		500	
Bass, Colonel.....	2		
Bellinger, Maj. J. B.....	1		
Bigelow, Hon. John.....	1		
Black, W. T.....	1		
Borden, F. W.....	2		
Bower, G. M.....	1		
Boynton, H. V.....	1		
Bureau of Insular Affairs, War Department.....	2		
Bureau of Navigation, United States Navy.....	22	1	
Chief of Engineers United States Army (1,152 photographs).....		1	6
Chief Signal Officer United States Army.....	4		
Civil Service Commissioners United States.....	1		
Commandant School of Submarine Defense, Fort Totten, N. Y.....		1	
Commissary-General United States Army.....		1	
Commissioner of Navigation United States.....	4		
Callan, Captain, U. S. Army.....		2	
Cary, Clarence, New York City.....		1	
Charnowitz, H. L., Newburg, N. Y.....		1	
Clark, Thomas F., New York City (1 map).....		1	
Cooper, Theodore, New York City.....	1		
Cormack, J. D.....	1		
Department of Agriculture United States.....	1		
Department of drawing United States Military Academy.....		4	
Department of modern languages United States Military Academy.....	2	3	
Department of ordnance and gunnery United States Military Academy.....		2	
Department of State United States.....	1		
Director American Museum of Natural History, New York.....		5	
Director of University State of New York.....	2		
Director of Washburn Observatory, Wisconsin.....	1		
Director of Yerkes Observatory, Wisconsin.....	1		
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Dudley, Colonel, U. S. Army.....		3	
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Farragut, Loyall, New York City.....	1		
Freeman, John R.....	1		
Gettysburg National Military Park Commission.....	1		
Gosman, Doctor, U. S. Army.....	1		
Grandgent, Chas. H.....		1	
Greble, Captain.....			
Green, Hon. A. H.....	15		
Guayaquil and Quito R. R. Co. (2 maps).....	1		

List of gifts to the library—Continued.

Name of donor.	Books.	Pam- phlets.	Charts.
Headquarters United States Military Academy.....			
Hamilton, James (1 newspaper).....		4	
Holden, Dr. E. S.....	16	123	
Huse, Colonel, Highland Falls.....	1		
Institution of Civil Engineers, London.....	2		
Judge-Advocate-General United States Army.....		1	
Kemble, G. (manuscript letters).....			
King, Gen. Charles.....		1	
Larned, Professor.....	1		
Lawson, T. W.....	1		
Loubat, Duc de.....		3	
Maynard, Geo., New York.....	1		
Marvin, Frederick R.....	1		
Miller, Capt. H. W., U. S. Army.....		1	
Moore, Capt. J. K., U. S. Army.....		1	
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Robinson, Capt. Wirt, U. S. Army.....		1	
Roebling, Col. W. A.....	1		
Royal Society of London.....	8		
Secretary Board on Geographic Names United States.....	2		
Secretary of the Navy United States.....	2		
Secretary of the Treasury United States.....	1		
Smithsonian Institution.....	1	1	
State historian New York.....	2		
Superintendent of Documents United States.....	1		
Simpson, Col. W. A.....			1
Summerlin, Captain, U. S. Army (1 medal).....			
Thompson, Capt. J. K., U. S. Army.....	1		
Thompson, Gilbert, Washington.....	1		
Tripp, Mr., West Point (1 engraving).....	1		
United States Civil Service Commission.....		1	
United States Coast and Geodetic Survey.....	2		
United States Commission of Fish and Fisheries.....	1		
United States Geological Survey.....	3		
United States Infantry and Cavalry School.....		1	
United States Naval Observatory.....		1	
University of Chicago.....		1	
Volney Streamer.....	3		
Wagner, Col. A. L., U. S. Army.....		1	
Walker, Benj. A. (1 pen-and-ink drawing).....			
Walsh, Rev. W. (1 engraving).....	4		
Ward, Wm., West Point (1 old newspaper, 1800; 1 map, 1836; quill pen used by Gen. Winfield Scott).....		62	
Wilson, Gen. James H.....	1		
Wood, Thomas C.....	1		

APPENDIX I.

RULES GOVERNING ARCHITECTURAL COMPETITION.

IMPROVEMENTS AT WEST POINT.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., February 3, 1903.

The following compilation of the rules approved by the honorable Secretary of War to govern the limited architectural competition for a preliminary general plan for improvements at West Point, N. Y., is published for the information and convenience of competitors and of all others concerned.

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

I. (Extract, act of Congress approved June 28, 1902.) "To increase the efficiency of the United States Military Academy at West Point, New York, and to provide for the enlargement of buildings and for other necessary works of improvement in connection therewith, and to provide for an increased water supply at a cost not to exceed one hundred thousand dollars, made necessary by the increased number of cadets now authorized by law, immediately available and to remain so until expended, two million dollars: *Provided*, That before any part of this amount is expended, except so much as may be necessary to provide an immediate increased water supply; to install a heating and lighting plant, and to complete the improvements begun on the cadet mess building, complete plans shall be prepared and approved by the Secretary of War, covering all necessary buildings and improvements at West Point, and for each and every purpose connected therewith, which plans shall involve a total expenditure of not more than five million five hundred thousand dollars, including the sum herein appropriated: *Provided further*, That after the preparation and approval of the plans herein provided, the Secretary of War is authorized to enter into a contract or contracts for any part or all of the improvements herein authorized within the said limit of cost, to be paid for from the appropriations annually made for this purpose: *Provided further*, That no money shall be expended or obligation incurred for architects after the plans for improvements above provided for have been approved by the Secretary of War, except that the Secretary of War is hereby authorized to employ, in his discretion, a consulting architect at a compensation not exceeding five thousand dollars per annum."

II. In carrying the above enactment into effect the Secretary of War wishes to secure a plan for the improvements which shall at the same time meet the practical requirements of the Military Academy and provide for a treatment worthy of the historic associations and natural beauties of the site. The Secretary of War names the following conditions which must be met:

The plan must provide for additional cadet barracks, academic building, chapel, post headquarters, headquarters of the corps of cadets, bachelor officers' quarters, riding hall, artillery barracks, stables, and gun sheds, cavalry barracks and stables, hotel, and many other buildings of minor importance.

It must afford opportunity for future extension and enlargement as the institution shall be enlarged with the growth of the country.

It must locate the buildings habitually occupied by the cadets so conveniently near each other as to meet the requirements of efficient administration and supervision, health, comfort, and economy of time.

It must maintain undiminished the present plain or campus for infantry instruction.

It must produce a general result in harmony with a number of the present buildings which are to be retained, such as the cadet barracks, the academic building, the library, the cadet mess, the cadet hospital, the gymnasium, the memorial hall, and the officers' mess.

It must be capable of execution at such a cost that the entire work now specifically provided for, including all the items mentioned in the statute, will not cost more than \$5,000,000, thus leaving a margin of \$500,000 against contingencies.

III. The preliminary general plan desired is required to show a proposed arrangement of buildings and treatment of the ground to meet the various requirements of the Academy, together with an indication of the architectural treatment of the separate buildings. In preparing his plan each competitor is at liberty to associate with himself a landscape architect or gardener and to submit the plan in his own name or the joint names, as he may prefer.

IV. The Secretary of War has appointed the following jury to give him professional advice in making the award of the competition: Lieut. Gen. John M. Schofield, Col. Albert L. Mills; Mr. George B. Post, architect; Mr. Walter Cook, architect; Mr. Cass Gilbert, architect.

V. The exhibits in the competition shall be limited to the following:

(A) The Superintendent of the Academy has furnished each competitor with a contour map of West Point drawn to a scale of 1 inch to 150 feet. On an enlargement of this map,^a as described in section B, each competitor shall show the general disposition of the below-mentioned essential buildings. In addition, the map shall show the treatment of the grounds and the principal public buildings to be retained, which are the cadet barracks, academic building, library, cadet mess, cadet hospital, gymnasium, memorial hall, and the officers' mess.

1. Additional cadet barracks.
2. New academic building.
3. Chapel.
4. Riding hall.
5. Post headquarters and museum.
6. Administration building of the corps of cadets.
7. Building for contagious diseases, adjacent to cadet hospital.
8. Cadet store.
9. Post-office, telegraph and telephone exchange building.
10. Building for bachelor officers' quarters.
11. Quarters for married officers.
12. Main guardhouse.
13. Post-exchange and commissary building.
14. Cavalry barracks.
15. Cavalry stables.
16. Artillery barracks.
17. Artillery stables and gun shed.
18. Cadet laundry.
19. Fire-engine houses.
20. Heating and lighting plant.
21. Hotel for 200 guests.

(B) A plan mounted on cloth showing the development of the grounds and the buildings proposed, as contained within the boundary lines of the map described in Section A and drawn to the scale of 100 feet equal to 1 inch; also five sections or elevations of any portion of these same grounds showing elevations of buildings suggested, at a scale of 25 feet equal to 1 inch. The lines on which these sections are taken are to be chosen by each competitor in such a way and to be of such length as to best explain, in his judgment, the general composition of his design, and the lines through which these sections have been taken are to be indicated on the plan.

The plan shall be drawn in ink and rendered in black and white; brush work; shadows may be cast, and all buildings or structural features shall be tinted with a flat light wash of yellow ochre.

The five sections or elevations shall be rendered in black and white; brush work; all shadows cast.

No perspective drawings are to be submitted.

(C) Drawings shall be submitted of the buildings numbered above as follows—3 and 4.

These drawings shall show a ground plan and elevations of two dissimilar fronts. One longitudinal section of the chapel shall be submitted.

The drawings described in this section shall be on a scale of one-eighth of an inch equals 1 foot.

All of the drawings called for in this section shall be rendered as desired by competitors, with shadows cast at an angle of 45° with vertical and horizontal planes of projection. Light will be assumed to fall from the left-hand upper angle and from front to rear. The drawings may be rendered with accessories of landscape at the option of each competitor, and a single human figure may be introduced to give scale.

All drawings described in this section shall be mounted on stretchers or heavy

^a Competitors may, if they desire, add to this map additional ground at the north-west part of the post.

binder boards with gray border. It is desired that these drawings shall approximate as nearly as possible the same size, and that the plain border outside the inclosing line shall not exceed 4 inches in width. Drawings of elevations above required shall be kept separate, although drawings of the two elevations of the same building may appear on the same sheet. Drawings of different buildings shall not appear on the same sheet, except for the purpose of showing association, and in such case the associated building shall be shown in outline only and tinted within this outline a gray wash.

VI. In the solution of the problem competitors may use their discretion in showing the change or removal of any buildings, notwithstanding it is stated in Paragraph II of this programme that certain designated buildings are to be retained. A competitor, however, making use of this authority does so at his own risk as to how much his chance of award is thereby affected.

VII. Textual description shall accompany the work of each competitor. It shall be either typewritten or printed, and should be as concise as possible. It shall embrace, besides comments on individual buildings, a discussion of the general scheme, including the provisions for possible future extension and shall outline the proposed method of procedure and state in general terms the material of which it is proposed to erect the buildings, and shall give a statement of the approximate number of cubic feet in each building in the design, the altitudes being measured from the bottom of the foundations to the average roof lines.

VIII. No other drawings than those herein described shall be submitted. The submission of more than one design for any building or of alternative designs for a portion of a building is prohibited.

IX. The competition shall be anonymous. Each set of drawings with its accompanying description shall be securely wrapped and sealed and in typewriting addressed to the Superintendent of the United States Military Academy, West Point, New York, plainly and conspicuously marked "Drawings for U. S. Military Academy Competition." Neither drawings nor wrapper shall have any distinguishing mark or device which might disclose the identity of the competitor, each of whom shall enclose with his drawings a plain white, opaque, unmarked envelope within which he shall enclose a card bearing his name and address. The envelope shall be securely sealed with a plain wax seal having no impression or identifying mark upon it. The Superintendent of the Military Academy shall, at a designated time, open each package and shall place a number upon the envelope containing the name and address of competitor, and shall place the same number upon every inclosure within the package. He shall preserve unopened the envelopes until after the final award. The packages containing drawings of competitors shall be sent in time to reach their destination on or before noon May 15, 1903.

The jury to advise the Secretary of War in making the award shall recommend to him that any set of drawings as to which the foregoing conditions have not been observed or which deviate in essential respects from the requirements of these rules shall be placed out of competition and that no compensation therefor be made.

X. During the competition there shall be no communications relating to its subject-matter between any of the competitors and any individual connected with the Military Academy, except in writing and through the Superintendent of the academy. All communications shall be addressed to the Superintendent United States Military Academy. There shall be no oral communication of this character unless authorized by the Superintendent and under conditions prescribed by him. Any information given by the Superintendent, whether oral or written, shall be free to all competitors, and when given to one shall be immediately issued to all others, if not already in their possession. The Superintendent will be glad to furnish any information that it is practicable to give, provided the request for such information reaches him not later than April 1, 1903, which is fixed as the date for closing all inquiry, and competitors are invited to freely consult him and to visit the buildings and grounds.

XI. No drawing or subject-matter shall be made public until after the award by the Secretary of War, and not then without consent of its author.

XII. The compensation of \$2,000 for each architect, or firm of architects, who presents a plan in response to the invitation contained in the letter of the Superintendent of October 20, 1902, and in accordance with these rules, shall be in full payment for all charges for their services in making and presenting said plan, including any expenses for travel.

XIII. The Superintendent of the Military Academy shall return the drawings of unsuccessful competitors to their owners immediately after the award by the Secretary of War, and no matter original to any competitor shall be made use of without the owner's consent and suitable compensation therefor, and the question of such

original feature and the compensation therefor shall be determined by the jury of award, subject to the approval of the Secretary of War.

XIV. The successful competitor shall furnish the Superintendent of the Military Academy the original drawings, or careful tracings or prints of the drawings, and textual descriptions of his designs as soon as possible after the competition.

XV. It is understood that the architect producing the accepted preliminary plan shall, in developing it into the complete plan described by the statute, make all necessary preliminary studies, general working drawings, and specifications required for the erection of all the buildings not included in the competition, compensation therefor to be on the same basis as that of the principal buildings.

XVI. It is also understood that it shall be a part of the work of the consulting architect to prepare the general working drawings, specifications, and details of the various modifications of, repairs and additions to existing buildings; also for the roads and changes in grounds that will be required in carrying out the general scheme of improvements.

The compensation to be paid the successful competitor in executing his design and planning buildings is fixed at $3\frac{1}{2}$ per cent of the cost of the buildings, to be paid upon the approval of the complete plan by the Secretary of War, or as soon thereafter as the cost can be ascertained. The Government will also undertake that the consulting architect, to be appointed at a yearly salary of \$5,000, shall be the successful competitor, or some one connected with his office. The Government will pay such traveling and office expenses as may be incurred by the consulting architect in the performance of his duties in connection with the execution of the plans; but this expense, together with the salary of the consulting architect, will not in any case be allowed to exceed $1\frac{1}{2}$ per cent of the cost of the buildings.

XVII. Competitors are cautioned that the report of the board of officers, already furnished them, is intended to show the general scope of the improvements which are projected at the Military Academy and the practical requirements which are to be met. None of the statements or expressions in said report or in the pamphlets and other printed matter furnished competitors, either as to location or character of buildings, or as to the treatment of the subject, are to be regarded as in any degree binding upon competitors. With the exception of the practical requirements given in the report of the board of officers, the matters referred to must be regarded only as individual expressions of opinion.