

ANNUAL REPORT

OF THE

SUPERINTENDENT OF THE UNITED STATES MILITARY ACADEMY.

1904.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 12, 1904.

SIR: I have the honor to submit the following report of the Military Academy for the year ending August 31, 1904:

I have performed the duties of Superintendent throughout the year, except for a leave of absence from July 30 to August 6, 1904, 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, 1904, was 7 professors, 1 associate professor, 79 commissioned officers, 1 librarian, 1 chaplain, 1 contract dental surgeon, 3 civilian instructors in languages, and 1 teacher of music, a total of 94. In addition, 1 officer was present on temporary duty.

The total for duty September 1, 1903, was 89. The difference in the totals between this year and last is accounted for by an increase of three officers and three civilians as instructors and a loss of one officer as associate professor.

The personnel of the academic board during the past year suffered a severe loss in the death of Lieut. Col. Wright P. Edgerton, professor of mathematics. A copy of the order announcing his death is attached hereto (Appendix A). Lieut. Col. Charles P. Echols, then captain and associate professor of mathematics, was appointed to fill the vacancy.

Another change in the personnel of the board has been the relief of Maj. Frank E. Hobbs, Ordnance Department, from duty as instructor of ordnance and gunnery after four years of efficient service as the head of that department, and the detail as his successor of Capt. Ormond M. Lissak, Ordnance Department. In addition to the performance of his duties as instructor of ordnance and gunnery and as ordnance officer of the post, Major Hobbs, as a member of the board convened by the Superintendent to act in an advisory capacity during the preparation and development of the complete plan for the improvements at the Military Academy, devoted himself to the seri-

ous consideration of the many matters referred to the board, and, with the other members, rendered excellent service to the academy in the performance of this duty.

In addition to the usual duties pertaining to the department of practical military engineering and the position of officer in charge of water supply, Maj. Mason M. Patrick, Corps of Engineers, has had charge of the large amount of work entailed in carrying out the act of Congress providing for an adequate water supply for the post. This work became so burdensome during the past summer that, with the sanction of the War Department, Capt. Henry Jervey, Corps of Engineers, was detailed as instructor of practical military engineering, relieving Major Patrick of this much of his work.

The accompanying roster (Appendix B) 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 481 on the rolls of the academy, divided among the four classes as follows:

| | |
|--------------------|-----|
| First class | 115 |
| Second class | 78 |
| Third class | 130 |
| Fourth class | 158 |

The following changes occurred during the year:

| | |
|--|-----------|
| Discharged for deficiency in studies | 21 |
| Discharged for deficiency in conduct | 3 |
| Discharged for physical disability | 1 |
| Total discharged | 25 |
| Resigned | 16 |
| Graduated | 124 |

The graduating class was the largest in the history of the academy.

But one examination of candidates for admission was held this year, the regular one at various army posts beginning May 3, May 1 falling on Sunday. For this examination there were appointed 353 candidates, including principals and alternates, and including also 11 former cadets. Of this number 74 failed to report, 6 failed to complete the examination, 20 were rejected by the medical boards, being qualified mentally, 47 were rejected upon the mental examination, being qualified physically, and 13 were rejected both mentally and physically. There were no vacancies for 42 qualified alternates.

There were admitted in June, 138; in July, 1; in August, 12—a total of 151. The following table gives the number of those admitted who qualified by examination, by certificate, etc.:

| | |
|--|------------|
| Former cadets taking physical examination only | 10 |
| Accepted on certificate, 80 principals and 20 alternates | 100 |
| Accepted on examination, 37 principals and 4 alternates | 41 |
| Total | 151 |

HEALTH.

The health of the command generally has continued good throughout the year. It is worthy of note that there has not been a single case of typhoid fever among officers, cadets, or enlisted men, and it is gratifying also to report that malarial fever has been very much diminished, due, it is believed, to the continuation of the vigorous methods pursued to prevent the breeding of mosquitoes. Up to the present time there is no record of a case of this fever having been contracted at this post this year. Of infectious diseases, there were a number of cases of measles, mumps, and chicken pox. They emphasize the necessity for an infectious-disease building apart from the regular hospital. Such a building is included in the scheme of general improvements, but it will be a number of years before it can be made ready. In the meantime the recommendation of the surgeon that a temporary infectious-disease building be constructed is approved, and the necessary estimate has been submitted. The report of the surgeon is hereto appended, marked "C."

CADET ALLOWANCES AND SUPPLIES.

The provision in the current Military Academy appropriation bill under which the Government bears the expense of cleaning and lighting barracks and maintaining the cadet baths, which expense has been borne by cadets heretofore, makes a welcome addition of about \$21 per year to the allowance of each cadet. Advantage of this has been taken to increase the fund retained for each graduate's equipment by \$1.50 per month, making it in all \$9.50 per month, which will go well toward enabling him to pay for his outfit on graduation and to enter the service without debt—a most desirable end to attain.

The accompanying report of the treasurer and quartermaster and commissary of cadets (Appendix D) gives the operation of the departments relating to the pay and accounts of cadets. The supplies of clothing and other articles provided during the year have been of excellent quality. The food furnished has never been better in quality and in variety. The unusual high prices of all food supplies that have prevailed during the year have materially increased the cost of subsisting cadets, which has averaged 64.3 cents per cadet per day as against 53.9 cents for the previous year. The increased cost is due in part, however, to maintaining an extra table during the season of athletic games and to the visits of instruction the classes have made during the year.

DISCIPLINE.

The discipline of cadets continues to be satisfactory. The battalion maintains its soldierly appearance as well as its perfection at drills and other military exercises.

The regard of cadets for the regulations governing the treatment of fourth classmen has been excellent, and springs, I believe, not alone from the fear of results which follow infractions of this rule, but also from an increasing disposition to willingly comply with authority and adhere to regulations. In other respects the standard among them of courtesy, character, and efficient performance of duty is most gratifying.

PRACTICAL MILITARY INSTRUCTION.

The appended very interesting reports of the commandant of cadets (Appendix E) and of the instructor of practical military engineering (Appendix F) give in detail the character of this work which was accomplished during the year, and attention is invited to both. Visits by the first class to the battlefield of Gettysburg, to Watervliet Arsenal, and to the Sandy Hook proving grounds were made again this year, and, in addition, the class spent three days in camp at Fort Totten, N. Y., where, through the cooperation and courtesy of Maj. Arthur Murray, Artillery Corps, commanding, the class was exercised in the service of seacoast artillery and submarine defense. The second class was again afforded an opportunity to visit for a day the Metropolitan Museum of Art in New York City.

It is a pleasure to record the privilege which, by the courtesy of the Fair Commission and the assistance of the War Department, was extended to the entire Corps of Cadets to visit in June the Louisiana Purchase Exposition. The annual examinations and the usual June exercises before the Board of Visitors were held earlier than usual this year, enabling the trip to be made between May 28 and June 11. In the report of the commandant of cadets, who was in command of the organizations attending, will be found a résumé of the important incidents connected with the visit.

ACADEMIC INSTRUCTION.

The academic instruction of cadets has been maintained throughout the year at its usual standard of thoroughness, and the degree of proficiency attained in the several classes has been highly satisfactory.

The isolation of the Military Academy from all other institutions of learning in this country, except the Naval Academy, is in no respect more marked perhaps than in the manner by which instructors are obtained for the academic departments. The position of instructor is generally recognized to be one requiring selected men and demanding a thorough training in the exercise of the art of teaching. That the Military Academy successfully depends upon the services of its graduates, given by four-year periods scattered throughout their careers, speaks well not only for the character of the institution's product, but also for its system of instruction. The element of this

system, on which especial emphasis is placed, is the effort to make the course of instruction a training school for the mind as well as affording the opportunity for the acquisition of information. It is vitally important, however, for the welfare and continued success of the academy, that educational results and methods should not be subordinated to other requirements, but that the academy should continually improve and keep abreast of the progress in educational matters throughout the country. To accomplish this end it is indispensable that the academy should receive every consideration, compatible with other equally important interests, in the choice of the officers to serve here as instructors. It is a matter where general rules governing details should not be allowed to hamper the selection of a particular individual to perform the particular duties for which his qualifications are established.

The rule that an officer shall have four years of service after graduation before he returns to the academy for duty often results in officers who would make the most suitable instructors being secured for other important duties before the expiration of the four years. The four-year rule was previously established by law, but the act of Congress now in force prescribes two years of duty between graduation and a detail as instructor. In certain branches the sooner an officer returns to the academy after graduation the better qualified he is for his work as instructor and the better instructor he makes. This is particularly the case in the mathematical departments and also in the department of languages, unless the officer has had an opportunity to keep up his study of languages. I believe that a rule requiring three years of service after graduation and before detail at the academy would have all the good effects of one requiring four and none of the disadvantages of one requiring two. The present rule of the War Department regarding the proportion of officers belonging to the various arms of the service which is to be maintained at the academy and the requirement that the officer applied for shall be on duty in this country and shall have had a tour of duty in the Philippines frequently entail further difficulties in obtaining the officers most desirable for the important work required of instructors.

It seems but just that the academy should have the benefit of its best production, and the remark of the late Professor Church that "the academy is the goose that lays the golden eggs" should not be forgotten.

Another element which it appears to me will have the effect of rendering more difficult the selection of the most efficient corps of instructors is the organization of the General Staff and the detailed staff. The number of officers rendered ineligible for the position of instructor on account of staff duty is theoretically increased 50 per cent by the detail staff system and practically increased by probably considerably more. An officer detailed on the staff becomes ineligible

not only during his period of service but also for two years after his service on the staff is completed. It is expected that second details to the staff will be the rule, especially when efficient service is performed during the first detail.

Under the present system of detailing instructors at the academy it is of course possible for an officer to have two tours of duty here, but such a second tour, instead of being regarded as evidence of a difficult task successfully performed, is often looked upon as a successful attempt to again evade duty with the officer's corps or regiment and to throw upon other shoulders additional work.

I believe that all of these questions would be fairly met and overcome, that the efficiency of the academy would be increased, and that higher ideals would be sought and obtained in the educational work by making all instructors at the academy members of the detailed staff, the period of service therein to be fixed by law at not more than four years, with at least two years between the expiration of one detail and the commencement of another, and appointments thereto causing vacancies in the branches of the service at large to be filled by the regular order of promotion, the same as in the details to the staff departments at the present time. Such action by Congress would afford relief in no small measure to the organizations throughout the service which are now taxed to provide the academy with officers, and the result to the Military Academy and through that to the Army would, in my opinion, far more than justify the slight proportional increase in the expense of maintaining the military establishment.

In the line of improvement the department of modern languages now has the services of a civilian instructor in French and two in Spanish, natives, respectively, of the countries indicated. It is believed their services will be of great value in increasing the interest of cadets in the study of the two languages by improving their knowledge of pronunciation and their conversational ability. It has not seemed advisable, at least at the outset, to intrust the entire management of sections to civilians without previous experience in the recitation methods of the academy. For this reason a plan has been adopted utilizing their services in conjunction with those of the regular instructors and enabling their efforts to be distributed over the entire class or concentrated on particular portions of it, as may seem advisable to the head of the department.

The course of instruction in French and Spanish is now completed at the end of the third-class year. There is consequently a lapse of two years between that time and the cadet's graduation, during which period much of the practical knowledge of both languages which has been acquired is abandoned or forgotten. It is, therefore, the intention to supplement the present course of instruction by requiring cadets to spend a small portion of their time—perhaps one hour each week—during their last two years at the academy in conferences or

conversations with instructors who speak fluently either French or Spanish. The civilian instructors will be extremely useful in assisting with this work. They will also be of much benefit to the officers who are instructors in the department of languages, and who will be thus afforded excellent opportunities to perfect their pronunciation of these languages and to obtain a practical knowledge of foreign manners, usages, and modes of address.

Attention is invited to the report of the instructor of ordnance and gunnery (Appendix K), particularly to that portion of it referring to the practical instruction of cadets in machinery. The remarks of Major Hobbs on this subject deserve very careful consideration.

The vacancy in the office of associate professor of mathematics, caused by the promotion of its late incumbent to the office of professor, has not been filled, it being the intention of the War Department to recommend to Congress an amendment of the present law which will enable the position to be filled hereafter by the detail of an officer from the Army at large. The basis of this recommendation is to give a wider field for selection when a vacancy occurs in the professorship. The detailing of an associate professor also will have the important result of keeping him in touch with the needs of graduates upon entering the service. It is hoped Congress will approve the recommendation and also place the associate professor of mathematics on the same footing regarding pay and allowances as is the case with the associate professor of modern languages.

THE LIBRARY.

The accompanying report of the librarian (Appendix G) gives briefly the work which has been accomplished during the past year in the library. The liberal appropriation for the support of this feature of the academy is expended with the greatest care, the aim being to make of it an efficient aid in accomplishing the purposes of the institution.

ATHLETICS.

The differences between the athletic associations of the Naval and Military academies, which for a time last year threatened to result in a suspension of inter-academy athletic sports, have happily been adjusted. The Superintendents of the two academies, having been requested to represent the respective associations, agreed, after a full consideration of the subject, to the adoption of a set of rules to govern the annual football game for three years, thus settling for that period all questions at issue.

I believe the stimulus which annual games of football and baseball between the two national academies give to athletics at this institution is a most desirable one. With no final competition at the close of each athletic season to which cadets may look forward as some-

thing to diligently strive for, athletic interest and spirit must dwindle more or less and active participation will be confined to smaller numbers. The object of athletics at any school is not only its good effect upon the physical development of the portion of the student body participating therein, but also the beneficial influence exerted over all the students by providing, in hours of recreation, amusement and interest which will remove from their minds for the time being all thought of books and studies. Each will return to the more sober work of his life with renewed zest and vigor, and the net result in scholarship will invariably be increased over that which would have been gained had the entire time been devoted to books.

While believing that interest in athletics should be cultivated at the academy, and that no one thing more effectually accomplishes this result than annual games of baseball and football between the two national academies, I also believe it absolutely essential that there should be fostered in the minds of both officers and cadets a true spirit of sportsmanship which can suffer defeat with the same hearty good will for the opponent that results from the achievement of a victory. At the beginning of athletic relations between the academies the unusual incident of a football game caused exceptional rivalry which, in certain cases, may have degenerated into too ardent partisanship. Whatever the result in the past, that such a condition exists now can, I am sure, be emphatically denied. The annual game is not only beneficial, but a natural sequence of the positions in this country occupied by these two institutions.

Inquiries are frequently made as to the privileges granted cadets who engage in various forms of athletics at the Military Academy and as to the effect of athletics on the scholarship of the participants. The following letter shows most of the privileges granted to the football squad, and as the training for football demands more time and care than the training for any other branch of athletics, even more privileges are given to football players than to cadets engaging in other sports:

HEADQUARTERS UNITED STATES MILITARY ACADEMY,

West Point, N. Y., August 31, 1904.

SIR: The Superintendent directs me to say that he authorizes the following for the present football season:

1. The establishment of a training table in the mess hall. In the interests of economy he desires admissions to the table regulated so that only those cadets for whom its advantages are intended are admitted to it.
2. Cadets practicing football may be permitted to wear their hair longer than is ordinarily allowed.
3. Cadets practicing football may be excused from police duties before breakfast when they exercise on the plain or in the gymnasium at that time.
4. By reporting their departure and return to the officer of the day members of the football squad in ordinary confinement may be permitted to exercise in the gymnasium or on the plain before breakfast, and to attend the regular meetings and practices of the football squad.

5. Members of the first two teams (about 24 cadets) may be inspected under arms in the area of barracks on Saturdays of regular match games.

6. The supper for members of the football squad may be delayed on week days in October until half an hour before call to quarters when it is desired.

7. Authority is granted for members of the football squad to send to the laundry such articles as may be prescribed by the commandant of cadets as necessary in excess of the weekly allowance; notice to be given by the commandant to the quartermaster and commissary of cadets.

8. Visiting teams may be authorized to take their meals at the cadet mess.

9. Permission is given for one trainer to take his meals with the cadets at the training table if it is desired.

10. On the afternoons when cadets practice football only members of the football squad will be allowed to use hot water in the cadet bathrooms after 4 o'clock.

11. The cadet captain of the football team and the cadet football manager are authorized to visit the quarters of Captain Pierce, the quarters of Lieutenant Boyers, and the office of the Army Athletic Association at such times as will not interfere with any duty. Visits during call to quarters will be made only when desired by the officer concerned, and in such cases departure and return will be reported at the guardhouse.

Very respectfully,

F. W. COE,

Captain, Artillery Corps, Adjutant.

The COMMANDANT OF CADETS,

Present.

In addition to the privileges extended by the above letter, cadets are allowed to have their hours of instruction so arranged that after the 1st of November all football players may, if they so desire, attend recitation in the afternoon from 2 to 3 p. m. when, according to the regular schedule, they attend from 3 to 4. All cadets average only one hour of recitation or attendance at duty in the afternoon between the hours of 2 and 4.

During November football practice is allowed between the hours of 3 and 4 p. m. This period is taken from the regular study hours, and is the only time employed in football training outside of the regular recreation hours. The regular recreation hours in September and October available for practice are from 4 to 6 p. m. Wednesday afternoons and from 3 to 6 p. m. Saturday afternoons. In November the regular recreation hours available for practice are the same, on Wednesday and Saturday, as in September and October, and in addition from 4 p. m. until dark (about 5.30 p. m.) on other week days.

The privilege of practicing football from 3 to 4 during November implies no excuse from any duty, nor allows a lack of preparation for recitation in any department. The time thus taken up from the usual study hours must be made up, if necessary, during some other recreation period. This principle, that football practice and training must not interfere with the preparation of any lesson or the attendance at any duty, has been rigidly maintained since football was established at the Military Academy.

At the beginning of each athletic season each member of the aca-

demie board is furnished with a list of all cadets who are practicing for athletic contests. When, in the opinion of any department, any such cadet is in danger of being found deficient in any course of study prescribed for that department the fact is reported to the Superintendent. If, upon investigation, it appears likely that the elimination of such a cadet from the athletic squad will improve his standing, he is forbidden to engage in further practice with the squad.

Various investigations have from time to time been instituted to determine whether or not the practice of football at the Military Academy has had any influence upon the standing of the cadets engaged in it. The results of such investigations have shown invariably that participation in this sport has not had the effect of lowering the class standing of the average cadet engaged therein. At the end of last season the football squad numbered 29 men. During this season, taking their standing for September, October, and November, these 29 men had gained in class standing, on the whole, 838 places and lost 744 places. Taking their positions in each subject studied during that time there were 50 cases of a loss in standing, 52 cases of a gain in standing, and 3 cases where the standing was the same in November as in September. As results sometimes fail to follow immediately the causes producing them, it may be interesting to carry the investigation a step further: Taking the same 29 men, their standing at the end of November and their standing at the end of the term (September to December), it was found that in 50 cases there was a loss of standing, in 49 cases a gain, and in 6 cases no change. These figures are derived from a table (Appendix H) which gives the standing of each of the members of last year's football squad in the various subjects of study for the months of September, October, and November and at the end of the term.

BUILDINGS AND GROUNDS.

The report of the quartermaster (Appendix I) gives in detail the large amount of work accomplished and improvements made during the year. The most important improvements completed are the cadet mess building and the south wing of the cadet hospital. The latter adds to the hospital service two much-needed wards which have been built to accord with modern requirements. The remodeled cadet mess building is proving most convenient in its arrangements. Its excellent equipment, noted in detail in the report of the commissary of cadets (Appendix D), provides everything essential for the care, proper preparation, and economical service of food. Especial credit is due the officers who have been directly charged with the construction and equipment of this building.

The new road giving access from the south dock and the railroad station to the south end of the reservation is open for traffic and nearly completed. It is a much-needed public convenience, and will

also greatly facilitate the delivery of material for the new buildings to be erected at that end of the post.

The provision made at the last session of Congress insures for West Point the obtaining of an abundant and excellent water supply, not only ample for present needs, but sufficient for any future change likely to be undertaken. In consequence, this vexatious and perplexing problem can now be considered as satisfactorily solved. The approved project consists in bringing water by gravity from the Popolopen stream at Fort Montgomery to the Lusk reservoir. The stream has a drainage area of about 29 square miles and carries a considerable volume of water at all seasons of the year. The necessary steps have been instituted to acquire the land and water rights, and the survey for the location of the pipe line is almost completed. Fortunately, abundant rains during the past summer have enabled the present supply to fairly meet all necessities.

The work upon plans for the new buildings and other improvements provided for in the act of Congress approved June 28, 1902, is being prosecuted with all diligence. The general block plan, fixing the location of the buildings to be erected under the appropriation made and the lines which it is believed any future expansion of the plan should follow, was approved by the Secretary of War January 27, 1904. The plans and specifications for the riding hall, cavalry barracks and stables, artillery barracks, stables, and gun shed have been completed and approved; and those of the cadet barracks, cadet headquarters and store, and double and triple sets of officers' quarters are practically ready for approval. It is hoped to commence the construction this winter of the officers' quarters which are to take the place of those now located on the site of the new cadet barracks. The new barracks are much needed, but can not be built until the site is cleared by the removal of the old officers' quarters now occupying it. The construction of the heating and lighting plant—the plans and specifications for the boilers, engines, and electrical machinery of which have been completed and approved—will also be commenced at an early date.

In my last annual report reference was made to important forestry work to be undertaken, having for its object the proper management of the forest lands of the reservation. A plan of management has been perfected by the United States Bureau of Forestry, and the work has been entered upon in accordance with the principles of scientific forestry. The plan provides for extensive improvements to the present stand of timber, for re-foresting worn-out areas and unused cleared lands, for protecting the forests from fires, and for the administration of the forest reservation. Ten years will be required to carry out the plan, and it is expected that the wood, cut in improvement trimmings, will cover the cost of all the improvements to be made.

It is of interest to note also that, with the approval of the Secretary of War, a contract has been made with Messrs. Olmsted Brothers, landscape architects, for the preparation of a general plan for landscape improvements at West Point—such a one as can be systematically and gradually carried out as means and labor are available. This plan, combined with the forestry and building plans, constitutes a complete plan for improvements which, having been carefully formulated and duly approved by the Secretary of War, will be respected as a permanent guide and will enable the executive officers of the academy to pursue for the future a consistent and continuous policy in directing these highly important matters.

The approved building plan has evoked some criticism. In one instance the criticism has been due to a misconception concerning the lines along which the plan was developed. In others it has arisen owing to extremely conservative views regarding the functions of the Military Academy. Criticism was to be expected, and has been welcome and helpful when well directed. It can be freely stated that no pains have been spared to obtain the views of persons best qualified to judge the subject, and, in deciding upon the many features involved in the plan, their views have been given the closest study and consideration. I believe the result is one which in all its essential features will receive the approval of unbiased judgment. The plan meets the present requirements of the Military Academy and the requirements which will come from its natural growth for many years. It is susceptible of expansion if at any time it becomes the policy of the Government to materially increase the number of cadets, but this feature is not obtained at unwarranted expense or at the expense of any of the practical requirements of the academy. The plan retains all the important old buildings which can be saved, meets and overcomes the natural restrictions of the site, and in the opinion of competent experts it is not only a plan that can be constructed with economy, but one that will harmonize with the character of the landscape. The provision for a possible considerable increase over the present number of cadets has been made in such a way that the present buildings and ones to be constructed at the present time will form an integral part of the final result and not have to be torn down in any possible future projects.

ESTIMATES.

The estimates for the next fiscal year are forwarded with this report. The necessity for the few new items embodied is fully explained in the remarks following them. It is hoped all will meet with approval. Especial attention is again 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 for a common

school education for the many children, mostly soldiers', residing here. West Point is isolated and, especially in winter, the difficulties of access to neighboring towns are so great that a school for young children is a necessity. I feel the responsibility for this work largely rests upon the Government and that it should assume the burden as a matter of right and justice.

In conclusion, I have the honor to express grateful appreciation of the help I have received from the officers on duty at West Point and of the cordial support the War Department has given in all matters tending to improve existing conditions at the academy.

Very respectfully,

A. L. MILLS,

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

The MILITARY SECRETARY,

War Department, Washington, D. C.

List of Appendixes.

Appendix A.—General orders announcing the death of Prof. Wright P. Edgerton.

Appendix B.—Roster of officers and troops.

Appendix C.—Report of the surgeon.

Appendix D.—Report of the treasurer, quartermaster, and commissary of cadets.

Appendix E.—Report of the commandant of cadets.

Appendix F.—Report of instructor of practical military engineering.

Appendix G.—Report of the librarian.

Appendix H.—Table showing standing of members of football squad in 1903.

Appendix I.—Report of quartermaster and disbursing officer.

Appendix K.—Report of instructor of ordnance and gunnery.

APPENDIX A.

GENERAL ORDERS ANNOUNCING DEATH OF PROF. WRIGHT P. EDGERTON.

GENERAL ORDERS, }
No. 15. }

HEADQUARTERS U. S. MILITARY ACADEMY,
West Point, N. Y., June 24, 1904.

It has become the sad duty of the Superintendent to announce to the officers, cadets, and graduates of the United States Military Academy the death, at 6 o'clock this morning, of Lieut. Col. Wright Prescott Edgerton, U. S. Army, professor of mathematics at this institution, at the early age of 51.

Lieutenant-Colonel Edgerton was graduated from the academy and promoted to a second lieutenant in the Second Artillery on June 17, 1874. During the next eight years he served on garrison duty at ten different stations located in six States, including terms of duty at the Artillery School at Fort Monroe and the Engineer School of Application at Willets Point. He became a first lieutenant of artillery in March, 1881. From August, 1882, to August, 1887, he was assistant professor of mathematics at the Military Academy. Between this latter date and January, 1889, he again did garrison duty in the States of Louisiana and New York and served as acting quartermaster at the Hot Springs in Arkansas. From January, 1889, to July, 1893, he was a second time on duty as assistant professor of mathematics at the academy. In July, 1893, he became associate professor of mathematics, and in October, 1898, he was appointed professor of mathematics.

His duty at so many posts in nearly as many States gave him an unusually wide acquaintance both in and out of the Army and supplied him an excellent opportunity for knowing both men and things, an opportunity of which his close observation, keen intellect, and ready perception made full avail. This army experience proved of the greatest benefit to him in his academic career.

Before becoming professor of mathematics he had served eight years as assistant professor and five years as associate professor in that department, and thus came admirably prepared to the position which he has so satisfactorily and honorably filled for the last six years.

His continued interest in active service is shown by the fact that as soon as his academic duties were completed, in June of 1898, he, by persistent effort, succeeded in being assigned to duty in connection with the transportation of troops from Port Tampa to Cuba. He was later engaged in the Porto Rican campaign, being attached to the headquarters of the Major-General Commanding the Army of the United States.

Professor Edgerton was a man of broad culture and much reading, taking the keenest interest in all that pertained either to the academy, the military service, or public affairs generally. Fully appreciating the past, he was deeply alive to all possible beneficial changes of the present. In addition to his great interest in purely academic matters, he strongly advocated and greatly encouraged athletic sports at the academy, and was for eight years president of the athletic association. His death terminates a period of nineteen years of honorable, honored, devoted, and able service to the institution that he loved so deeply and unselfishly.

He was an accomplished officer, devoted to his duties, an inspiring teacher, loyal to his superiors, considerate of his subordinates, courteous to all—a type of man and soldier of which the Military Academy is justly proud. All who have come in contact with him socially or officially will ever remember his genial personality, his courteous manner, and the perpetual charm of variety which made him so delightful a companion. In his death the country, the Army, and the academy have cause to lament the loss of a noble character.

The officers of the academy and of the Battalion of Cadets will wear the usual badge of mourning upon the sword hilt for the period of thirty days.

By command of Brigadier-General Mills:

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

APPENDIX B.

ROSTER OF OFFICERS AND TROOPS.

SUPERINTENDENT.

Albert L. Mills, brigadier-general, U. S. Army.

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. Louis M. Nuttman, Ninth Infantry, commissary, and in charge of post exchange.

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

First Lieut. Robert C. Foy, First Cavalry, assistant to quartermaster.

Lieut. Col. Harry O. Perley, deputy surgeon-general, U. S. Army, surgeon.

First Lieut. Thomas L. Rhoads, assistant surgeon, U. S. Army.

First Lieut. George M. Ekwurzel, assistant surgeon, U. S. Army.

First Lieut. James W. Van Dusen, assistant surgeon, U. S. Army.

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. (15 June, 1901.)

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

Capt. Francis C. Marshall, Fifteenth Cavalry, assistant instructor of tactics; commanding company of cadets.

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

Capt. Merch B. Stewart, Eighth Infantry, senior instructor of infantry tactics; commanding company of cadets

Capt. Albert J. Bowley, Artillery Corps, senior instructor of artillery tactics.

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. Ira C. Welborn, Ninth Infantry, assistant instructor of tactics; commanding company of cadets.

Capt. Charles W. Exton, Twentieth Infantry, assistant instructor of tactics; commanding company of cadets.

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

First Lieut. Herman Glade, Sixth Infantry, assistant instructor of tactics and gymnastics.

DEPARTMENT OF CIVIL AND MILITARY ENGINEERING.

Gustav J. Fiebeger, lieutenant-colonel, U. S. Army, professor. (4 May, 1896.)

Capt. James P. Jervey, Corps of Engineers, assistant professor.

Capt. Frederick W. Altstaetter, Corps of Engineers, instructor.
 Capt. James A. Woodruff, Corps of Engineers, instructor.
 First Lieut. Horton W. Stickle, Corps of Engineers, instructor.
 First Lieut. Lewis H. Rand, Corps of Engineers, instructor.

DEPARTMENT OF NATURAL AND EXPERIMENTAL PHILOSOPHY.

William B. Gordon, lieutenant-colonel, U. S. Army, professor. (27 March, 1901.)
 Capt. Palmer E. Pierce, Thirteenth Infantry, assistant professor.
 First Lieut. Charles M. Wesson, Eighth Cavalry, instructor.
 First Lieut. William I. Westervelt, Artillery Corps, instructor.
 Second Lieut. William S. Browning, Artillery Corps, instructor.

DEPARTMENT OF MATHEMATICS.

Charles P. Echols, lieutenant-colonel, U. S. Army, professor. (29 June, 1904.)
 Capt. George Blakely, Artillery Corps, assistant professor.
 Capt. William R. Smith, Artillery Corps, instructor.
 Capt. Mortimer O. Bigelow, Eighth Cavalry, instructor.
 Capt. Claude H. Miller, Twenty-fourth Infantry, instructor.
 Capt. Lytle Brown, Corps of Engineers, instructor.
 First Lieut. Leon B. Kromer, Eleventh Cavalry, instructor.
 First Lieut. Joseph A. Baer, Sixth Cavalry, instructor.
 First Lieut. Frank O. Whitlock, Fourteenth Cavalry, instructor.
 First Lieut. Willis V. Morris, Sixth Cavalry, instructor.
 First Lieut. Archibald H. Sunderland, Artillery Corps, instructor.
 Second Lieut. Francis W. Clark, Artillery Corps, instructor.
 Second Lieut. Guy E. Carleton, Artillery Corps, instructor.
 Second Lieut. Wade H. Carpenter, Artillery Corps, instructor.

DEPARTMENT OF CHEMISTRY, MINERALOGY, AND GEOLOGY.

Samuel E. Tillman, colonel, U. S. Army, professor. (21 December, 1880.)
 Capt. Henry Jervey, Corps of Engineers, assistant professor.
 Capt. John McA. Palmer, Fifteenth Infantry, instructor.
 Capt. Paul B. Malone, Twenty-seventh Infantry, instructor.
 Capt. Fred H. Gallup, Artillery Corps, instructor.
 Second Lieut. William R. Bettison, Artillery Corps, instructor.

DEPARTMENT OF DRAWING.

Charles W. Larned, colonel, U. S. Army, professor. (25 July, 1876.)
 Capt. Charles B. Hagadorn, Twenty-third Infantry, assistant professor.
 Capt. Charles H. Paine, Twenty-ninth Infantry, instructor.
 Capt. Harold Hammond, Twenty-third Infantry, instructor.
 Capt. Chauncey B. Humphrey, Twenty-second Infantry, instructor.
 First Lieut. George B. Comly, Third Cavalry, instructor.

DEPARTMENT OF MODERN LANGUAGES.

Edward E. Wood, colonel, U. S. Army, professor. (1 October, 1892.)
 Capt. William Kelly, jr., Ninth Cavalry, associate professor. (1 July, 1903.)
 Capt. Thomas G. Hanson, Nineteenth Infantry, assistant professor of the Spanish language.
 Capt. William O. Johnson, Sixteenth Infantry, assistant professor of the French language.
 Capt. Arthur Thayer, Third Cavalry, instructor.
 Capt. William Newman, First Infantry, instructor.
 Capt. Americus Mitchell, Fifth Infantry, instructor.
 Capt. Harvey W. Miller, Thirteenth Infantry, instructor.
 First Lieut. Charles F. Martin, Fifth Cavalry, instructor.
 First Lieut. Robert E. Wood, Third Cavalry, instructor.
 First Lieut. Charles R. Lawson, Artillery Corps, instructor.
 Second Lieut. Arthur H. Bryant, Artillery Corps, instructor.
 Second Lieut. Frank P. Lahm, Sixth Cavalry, instructor.
 Second Lieut. Stephen Abbot, Artillery Corps, instructor.

Civilian instructors.

A. Marin La Meslée, in French.
 José M. Asensio, in Spanish.
 N. T. Quevedo, in Spanish.

DEPARTMENT OF LAW AND HISTORY.

Edgar S. Dudley, colonel and judge-advocate, U. S. Army, professor. (31 July, 1901.) (By assignment under act 6 June, 1874.)
 Capt. John K. Moore, Fifteenth Infantry, assistant professor.
 First Lieut. Irvin L. Hunt, Nineteenth Infantry, instructor.
 First Lieut. George S. Simonds, Twenty-second Infantry, instructor.
 First Lieut. Halsey E. Yates, Fifth Infantry, instructor.
 First Lieut. Edwin G. Davis, Artillery Corps, instructor.
 First Lieut. Pressley K. Brice, Artillery Corps, instructor.
 Second Lieut. Edward Canfield, jr., Artillery Corps, instructor.

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

Capt. Henry Jervey,^a Corps of Engineers, instructor. (July 12, 1904.)
 First Lieut. Michael J. McDonough, Corps of Engineers, senior assistant instructor.

DEPARTMENT OF ORDNANCE AND GUNNERY.

Capt. Ormond M. Lissak, Ordnance Department, instructor. (July 1, 1904.)
 Capt. Jens Bugge, Twenty-eighth Infantry, senior assistant instructor.
 Capt. Joseph Wheeler, jr., Artillery Corps.
 Second Lieut. William P. Emnis, Artillery Corps, assistant instructors.

IN CHARGE OF WATER SUPPLY.

Maj. Mason M. Patrick, Corps of Engineers.

LIBRARIAN.

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

CHAPLAIN.

Rev. Herbert Shipman. (Reappointed April 22, 1904.) (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. Harry O. Perley, deputy surgeon-general, commanding.
 First Lieut. Thomas L. Rhoads, assistant surgeon.
 First Lieut. George M. Ekwurzel, assistant surgeon.
 First Lieut. James W. VanDusen, assistant surgeon.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ARMY SERVICE MEN.

Maj. John M. Carson, jr., quartermaster, commanding.
 First Lieut. Robert C. Foy, First Cavalry.

^aSee Department of Chemistry.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ENGINEERS.

Maj. Mason M. Patrick, Corps of Engineers, commanding.
 First Lieut. Michael J. McDonough, Corps of Engineers.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ORDNANCE.

Capt. Ormond M. Lissak, Ordnance Department, commanding.

UNITED STATES MILITARY ACADEMY DETACHMENT OF CAVALRY.

Capt. Godfrey H. Macdonald, First Cavalry, commanding.
 Capt. Lincoln C. Andrews, Fifteenth Cavalry.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ARTILLERY.

Capt. Albert J. Bowley, 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— |
|----------------------------|---|---------------------------|
| SUPERINTENDENT. | | |
| Mills, Albert L..... | Brigadier-general, U. S. Army | 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 |
| Febeger, Gustav J..... | Professor (May 4, 1896)..... | May 30, 1896 |
| Gordon, William B..... | Professor (Mar. 27, 1901)..... | May 2, 1901 |
| Echols, Charles P..... | Professor (June 29, 1904)..... | Dec. 27, 1898 |
| COLONEL. | | |
| Dudley, Edgar S..... | Colonel and judge-advocate, professor (July 31, 1901). | July 31, 1901 |
| LIEUTENANT-COLONELS. | | |
| Treat, Charles G..... | Captain, Artillery Corps, commandant of cadets (June 15, 1901). | Aug. 31, 1900 |
| Perley, Harry O..... | Lieutenant-colonel and Deputy Surgeon-General | Aug. 25, 1904 |
| MAJORS. | | |
| Carson, John M., jr..... | Quartermaster..... | July 8, 1903 |
| Patrick, Mason M..... | Corps of Engineers..... | Aug. 31, 1903 |
| CHAPLAIN. | | |
| Shipman, Rev. Herbert..... | Chaplain..... | Apr. 25, 1896 |
| ASSOCIATE PROFESSOR. | | |
| Kelly, William, jr..... | Captain, Ninth Cavalry..... | Oct. 19, 1898 |
| CAPTAINS. | | |
| Lissak, Ormond M..... | Ordnance Department..... | July 1, 1904 |
| Jervey, Henry..... | Corps of Engineers..... | Dec. 15, 1903 |
| Macdonald, Godfrey H..... | First Cavalry..... | Aug. 20, 1903 |
| Hanson, Thomas G..... | Nineteenth Infantry..... | Aug. 20, 1901 |
| Hagadorn, Charles B..... | Twenty-third Infantry..... | Aug. 20, 1903 |
| Johnson, William O..... | Sixteenth Infantry..... | Aug. 22, 1904 |
| Pierce, Palmer E..... | Thirteenth Infantry..... | Nov. 8, 1901 |
| Thayer, Arthur..... | Third Cavalry..... | Aug. 22, 1904 |
| Marshall, Francis C..... | Fifteenth Cavalry..... | July 5, 1904 |
| 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 |
| Paine, Charles H..... | Twenty-ninth Infantry..... | Aug. 22, 1904 |
| Mitchell, Americus..... | Fifth Infantry..... | Aug. 20, 1903 |
| Andrews, Lincoln C..... | Fifteenth Cavalry..... | June 30, 1903 |
| Franklin, Thomas..... | Subsistence Department..... | Jan. 8, 1902 |

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

| Names. | Corps or regiment. | On duty at academy since— |
|--------------------------|---|---------------------------|
| CAPTAINS—continued. | | |
| Nuttman, Louis M | Ninth Infantry | Jan. 31, 1903 |
| Jervey, James P | Corps of Engineers | Jan. 4, 1899 |
| Blakely, George | Artillery Corps | Jan. 24, 1903 |
| Coe, Frank W | do. | July 2, 1903 |
| Smith, William R | do. | Feb. 14, 1903 |
| Stewart, Merch B | Eighth Infantry | Aug. 22, 1904 |
| Bigelow, Mortimer O. | Eighth Cavalry | Aug. 20, 1901 |
| Wheeler, Joseph, jr | Artillery Corps | Aug. 20, 1902 |
| Bowley, Albert J | do. | Aug. 20, 1901 |
| Newbold, Henry L | do. | Aug. 20, 1903 |
| Moore, John K | Fifteenth Infantry | Aug. 27, 1902 |
| Miller, Claude H | Twenty-fourth Infantry | Aug. 28, 1902 |
| Miller, Harvey W | Thirteenth Infantry | Aug. 25, 1902 |
| Hammond, Harold | Twenty-third Infantry | Aug. 20, 1902 |
| Davis, Robert C | Seventeenth Infantry | Aug. 10, 1901 |
| Welborn, Ira C | Ninth Infantry | Aug. 22, 1904 |
| Exton, Charles W | Twentieth Infantry | Sept. 15, 1903 |
| Humphrey, Chauncey B | Twenty-second Infantry | Oct. 18, 1901 |
| Altstaetter, Frederick W | Corps of Engineers | Aug. 20, 1902 |
| Brown, Lytle | do. | Jan. 12, 1903 |
| Gallup, Fred H | Artillery Corps | Aug. 31, 1903 |
| Woodruff, James A | Corps of Engineers | Aug. 20, 1903 |
| FIRST LIEUTENANTS. | | |
| Hunt, Irvin L | Nineteenth Infantry | Aug. 1, 1903 |
| Simonds, George S | Twenty-second Infantry | Aug. 22, 1904 |
| Yates, Halsey E | Fifth Infantry | Aug. 20, 1902 |
| Rhoads, Thomas L | Assistant surgeon | Aug. 19, 1904 |
| Stickle, Horton W | Corps of Engineers | Aug. 22, 1904 |
| Rand, Lewis H | do. | Aug. 1, 1904 |
| Kromer, Leon B | Eleventh Cavalry | Sept. 5, 1903 |
| Foy, Robert C | First Cavalry | Sept. 1, 1904 |
| Baer, Joseph A | Sixth Cavalry | Aug. 20, 1903 |
| Whitlock, Frank O | Fourteenth Cavalry | do. |
| Martin, Charles F | Fifth Cavalry | Oct. 24, 1903 |
| Wood, Robert E | Third Cavalry | Aug. 20, 1903 |
| Morris, Willis V | Sixth Cavalry | Aug. 22, 1904 |
| Wesson, Charles M | Eighth Cavalry | Aug. 20, 1903 |
| Comly, George B | Third Cavalry | do. |
| Koehler, Herman J | Instructor of military gymnastics and physical culture. | Feb. 1, 1885 |
| McDonough, Michael J | Corps of Engineers | Apr. 17, 1903 |
| Ekwurzel, George M | Assistant surgeon | July 22, 1904 |
| VanDusen, James W | do. | Jan. 20, 1904 |
| Lawson, Charles R | Artillery Corps | Aug. 22, 1904 |
| Westervelt, William I | do. | do. |
| Davis, Edwin G | do. | Aug. 20, 1903 |
| Sunderland, Archibald H | do. | Aug. 22, 1904 |
| Brice, Pressley K | do. | do. |
| Glade, Herman | Sixth Infantry | Mar. 14, 1902 |
| SECOND LIEUTENANTS. | | |
| Browning, William S | Artillery Corps | Aug. 20, 1904 |
| Clark, Francis W | do. | Aug. 27, 1904 |
| Canfield, Edward | do. | Aug. 20, 1903 |
| Ennis, William P | do. | Aug. 19, 1904 |
| Bryant, Arthur H | do. | Aug. 22, 1904 |
| Lahm, Frank P | Sixth Cavalry | Aug. 20, 1903 |
| Carleton, Guy E | Artillery Corps | Aug. 28, 1904 |
| Bettison, William R | do. | Aug. 20, 1903 |
| Carpenter, Wade H | do. | Aug. 22, 1904 |
| Abbot, Stephen | do. | do. |

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 1, 1904.

APPENDIX C.

REPORT OF THE SURGEON.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., July 30, 1904.

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, 1904:

| | |
|--|-------|
| Number of admissions to cadet hospital, including officers | 1,091 |
| Number of enlisted men treated at soldiers' hospital and in quarters | 375 |
| Civilians treated (members of officers and soldiers' families and all others to whom medical attendance is usually extended) | 1,801 |
| Prescriptions filled at cadet hospital (exclusive of medicines dispensed on verbal directions) | 4,496 |
| Prescriptions filled at soldiers' hospital and subdispensary (exclusive of medicines dispensed on verbal directions) | 395 |
| Number of recruits examined | 96 |

The health of 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 among officers, cadets, and enlisted men was from intestinal diseases and indigestion (190), the usual result of indiscreet or excessive eating and drinking, and in all cases promptly and entirely cured. Next in order of frequency are tonsillitis and pharyngitis (108), from exposure to the trying winter and spring weather; influenza (93), which prevailed in a mild and subacute form during the winter and spring, without dangerous complications or sequels; bronchitis (84); coryza (59); boils (58); malarial fever (57); mumps (57).

By far the greatest number of admissions was for wounds and injuries (305), nearly all slight and none followed by permanent disability.

Comparing these figures with those of last year, it is seen that wounds and injuries have increased (from 258 to 305), while malarial fever has very much diminished (from 167 to 57). Influenza has also been less prevalent. The other diseases do not show any marked difference.

Of infectious diseases there were—measles, 11 cases, namely, 10 among officers and cadets and 1 among enlisted men; chicken pox, 4 cases, all among cadets; mumps, 57 cases, all among cadets. They all recovered without serious complications.

There were also 9 cases of pneumonia, all among enlisted men, with 2 deaths.

It is worth noting that there has not been a single case of typhoid fever among officers, cadets, and enlisted men.

This post is not yet provided with an infectious-disease hospital. Such a hospital is included in the scheme of improvements now under consideration; but as it will be at least three or four years before it can be completed, I have recommended and urged the construction of a provisional infectious-disease hospital, to be erected as soon as the appropriation is available.

The measures started by my predecessor to control malarial fever by preventing the breeding of mosquitoes and isolating all fever cases have been vigorously continued. The result is a notable diminution in the number of cases, as shown above; up to this time there is as yet no record of any case contracted at this post this year. Mosquitoes, however, have been rather common, at times, with 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 are innocuous. The use of mosquito bars in camp, enforced by orders, had doubtless the excellent effect of preventing the propagation of malarial fever among cadets, besides adding materially to their comfort.

The eye and ear work has been particularly active, occupying most of the time of a medical officer. Over 250 persons were examined or reexamined during the fiscal year for refractive errors and 237 pairs of suitable glasses prescribed.

A new wing has been added to the cadet hospital and turned over to the surgeon about March 1, 1904. This has rendered possible the transfer of the hospital corps from the third story to the lower ward, north wing, which is least suitable for patients. This transfer has made 2 rooms on the third story available for officers. Outside of these rooms the hospital can now easily accommodate 45 patients. Several important alterations are still needed in the cadet hospital in order to make it as perfect as possible for its purpose. Estimates have been submitted accordingly.

The soldiers' hospital has undergone important alterations which have very much improved it, so that it is now in excellent condition.

The mortality during the year has been as follows: Officers, 1 from heart disease; enlisted men, 3. 2 from pneumonia and 1 from angina pectoris; cadets, none.

The diet of the cadets and enlisted men has been frequently inspected by medical officers and always found satisfactory. I renew my recommendation that the dinner hour for cadets be changed from 1 p. m. to 12.30 p. m., for the reasons specified in former reports on the subject.

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

Very respectfully,

V. HAVARD,

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

The ADJUTANT UNITED STATES MILITARY ACADEMY.

TABLE A.—Causes, number, and ratio of admissions for officers, cadets, and enlisted men for the year ending June 30, 1904.

| Causes of admission to sick report. | Rank. | Number of admissions. | Ratio per 1,000 of mean strength. |
|---|---------------------|-----------------------|-----------------------------------|
| Abscess | Officers and cadets | 22 | 3.68 |
| | Enlisted men | 7 | 1.25 |
| Adenitis | Officers and cadets | 4 | .67 |
| Appendicitis | do | 8 | 1.35 |
| Alcoholism | Enlisted men | 6 | 1.07 |
| Aphonia | do | 1 | .17 |
| Bronchitis | Officers and cadets | 68 | 11.13 |
| | Enlisted men | 16 | 2.83 |
| Concussion of brain | Officers and cadets | 1 | .16 |
| Catarrh (nasal) | Enlisted men | 1 | .17 |
| Circumcision | Officers and cadets | 11 | 1.84 |
| Corns | do | 20 | 3.58 |
| Conjunctivitis | do | 21 | 3.52 |
| | Enlisted men | 2 | .33 |
| Chorea | Officers and cadets | 1 | .16 |
| Chicken pox | do | 4 | .67 |
| Coryza | do | 40 | 6.72 |
| | Enlisted men | 19 | 3.39 |
| Constipation | Officers and cadets | 21 | 3.52 |
| | Enlisted men | 2 | .35 |
| Cellulitis | Officers and cadets | 4 | .67 |
| | Enlisted men | 4 | .71 |
| Cystitis | do | 3 | .53 |
| Examination of eyes | Officers and cadets | 5 | .83 |
| Exhaustion | do | 46 | 7.71 |
| | Enlisted men | 7 | 1.25 |
| Epilepsy | do | 1 | .17 |
| Felon | do | 2 | .35 |
| Frostbite | do | 5 | .89 |
| Hordeolum | Officers and cadets | 6 | 1.02 |
| Hammer toe | do | 1 | .16 |
| Hemorrhoids | do | 3 | .50 |
| | Enlisted men | 2 | .35 |
| Heart disease | Officers and cadets | 2 | .33 |
| Hernia | do | 1 | .16 |
| | Enlisted men | 3 | .58 |
| Insomnia | Officers and cadets | 1 | .16 |
| Iritis | Enlisted men | 1 | .17 |
| Intestinal diseases, including indigestion. | Officers and cadets | 134 | 24.14 |
| | Enlisted men | 56 | 10.00 |
| Ingrowing toe nail | Officers and cadets | 4 | .67 |
| Influenza | do | 49 | 8.21 |
| | Enlisted men | 44 | 7.83 |
| Lymphangitis | do | 1 | .17 |
| Laryngitis | Officers and cadets | 2 | .33 |
| | Enlisted men | 5 | .89 |
| Mumps | Officers and cadets | 57 | 9.55 |

TABLE A.—Causes, number, and ratio of admissions for officers, etc.—Cont'd.

| Causes of admission to sick report. | Rank. | Number of admissions. | Ratio per 1,000 of mean strength. |
|-------------------------------------|---------------------------|-----------------------|-----------------------------------|
| Malaria fever..... | Officers and cadets | 33 | 5.53 |
| | Enlisted men | 14 | 2.50 |
| Measles | Officers and cadets | 10 | 1.67 |
| | Enlisted men | 1 | .17 |
| Neuralgia | Officers and cadets | 33 | 5.53 |
| | Enlisted men | 1 | .17 |
| Nose bleed..... | Officers and cadets | 1 | .16 |
| Otitis | do | 4 | .67 |
| | Enlisted men | 1 | .17 |
| Orchitis (sequel to mumps)..... | Officers and cadets | 2 | .33 |
| Pharyngitis | do | 50 | 8.38 |
| | Enlisted men | 2 | .35 |
| Pneumonia | do | 9 | 1.58 |
| Pleurisy | Officers and cadets | 2 | .33 |
| | Enlisted men | 2 | .35 |
| Rheumatism | Officers and cadets | 29 | 4.86 |
| | Enlisted men | 18 | 3.21 |
| Skin disease | Officers and cadets | 18 | 3.01 |
| | Enlisted men | 14 | 2.50 |
| Septum deflected..... | Officers and cadets | 2 | .33 |
| Trachoma | do | 1 | .16 |
| Testicle undescended | do | 1 | .16 |
| Tonsillitis | do | 44 | 7.37 |
| | Enlisted men | 12 | 2.13 |
| Venereal diseases | Officers and cadets | 25 | 4.19 |
| | Enlisted men | 20 | 3.57 |
| Vaccinia | Officers and cadets | 7 | 1.18 |
| | Enlisted men | 4 | .67 |
| Varicocele | Officers and cadets | 4 | .71 |
| | Enlisted men | 3 | .53 |
| Wounds and injuries | Officers and cadets | 220 | 36.89 |
| | Enlisted men | 85 | 15.17 |
| Worms | Officers and cadets | 2 | .33 |
| Wry neck..... | Enlisted men | 1 | .17 |

TABLE B.—Surgical operations performed during year ending June 30, 1904.

The following operations have been performed:

| | Cases. |
|--|--------|
| Hemorrhoids (2 officers by Lieutenant Lyster; 2 soldiers and 1 civilian by Captain Stark)..... | 5 |
| Hernia (2 soldiers and 2 civilians by Captain Stark; 1 soldier and 1 civilian by Captain Webb) | 6 |
| Excision of ulcer (2 civilians by Captain Stark) | 2 |
| Wiring of dislocated patella (1 civilian by Captain Stark) | 1 |
| Varicocele (3 cadets and 1 soldier by Captain Stark; 3 soldiers and 1 civilian by Captain Webb) | 8 |
| Circumcision (3 cadets, 2 soldiers, and 1 civilian by Captain Stark; 2 civilians by Captain Webb; 8 cadets by Lieutenant Lyster) | 16 |
| Deflected septum (2 cadets by Captain Stark) | 2 |
| Trachelorrhaphy* (4 civilians by Captain Stark) | 4 |
| Tonsillotomy (1 soldier by Captain Stark; 2 cadets by Lieutenant Lyster) | 3 |
| Pelvis abscess (1 cadet by Captain Stark; 1 cadet by Lieutenant Lyster) | 2 |
| Undescended testicle (1 cadet by Captain Stark) | 1 |
| Hammer toes (1 cadet by Lieutenant Lyster) | 1 |
| Abscess lower lip (2 cadets by Lieutenant Lyster) | 2 |
| Perineorrhaphy (4 civilians by Captain Stark) | 4 |
| Nephrectomy (1 civilian by Captain Stark) | 1 |
| Adenoid curettage (2 civilians by Captain Stark) | 2 |
| Uterine curettage (4 civilians by Captain Stark; 2 civilians by Captain Webb) | 6 |
| Laparotomy (1 civilian by Captain Stark; 2 civilians by Captain Webb) | 3 |
| Oöphorectomy (1 civilian by Captain Stark) | 1 |
| Ingrowing nails (1 soldier by Lieutenant Lyster; 2 soldiers by Captain Webb) | 3 |
| Appendectomy (2 civilians by Captain Webb; 1 civilian by Captain Stark) | 3 |
| Amputation of breast (1 civilian by Captain Webb) | 1 |
| Ventral suspension (1 civilian by Captain Webb) | 1 |
| Resection of 2 inches, sixth and seventh ribs (2 civilians by Captain Webb) | 2 |
| Resection of 2 inches, seventh rib (1 civilian by Captain Webb) | 1 |
| Total..... | 81 |

APPENDIX D.

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

OFFICE TREASURER UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 8, 1904.

SIR: In compliance with instructions contained in circular 57, 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, 1904:

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..... | \$299,267.24 | \$287,309.88 |
| Athletic association..... | 1,964.00 | 1,964.00 |
| Balances paid..... | 38,505.16 | 38,316.74 |
| Barber..... | 1,140.60 | 1,140.60 |
| Cadet cash..... | 22,645.22 | 22,567.63 |
| Cadet hospital..... | 3,156.03 | 3,156.03 |
| Cadet laundry..... | 18,696.58 | 18,149.13 |
| Cadet store..... | 142,377.13 | 124,573.88 |
| Cadet mess..... | 116,513.65 | 114,265.29 |
| Confectioner..... | 444.00 | 444.00 |
| Corps of Cadets..... | 355,054.63 | 358,801.22 |
| Damages, ordnance..... | 65.29 | 65.29 |
| Dancing..... | 735.20 | 735.20 |
| Dentist..... | 1,266.00 | 1,266.00 |
| Deposits..... | 21,916.47 | 21,814.06 |
| Dialectic society..... | 453.46 | 573.52 |
| Equipment fund..... | 38,202.00 | 43,968.00 |
| Expressage..... | 39.98 | 39.98 |
| Gas fund..... | 1,896.45 | 1,896.45 |
| Hops and german..... | 2,477.18 | 2,477.18 |
| Miscellaneous fund..... | 9.00 | 59.99 |
| Miscellaneous items..... | 2,174.17 | 2,477.18 |
| Oaths (notary public)..... | 34.00 | 34.00 |
| Paymaster..... | 235,545.48 | 235,545.48 |
| Periodicals..... | 31.40 | 31.40 |
| Photographer..... | 74.25 | 74.25 |
| Poling barracks..... | 6,904.93 | 6,904.93 |
| Young Men's Christian Association..... | 769.83 | 797.45 |
| Washstand, etc., fund..... | 303.65 | 416.76 |
| Travel pay..... | 6,497.15 | 6,497.15 |
| Rations..... | 51,664.40 | 51,664.40 |

The accounts of the Treasurer are inspected every two months by an officer of the academy, detailed by the Superintendent, to whom the result of the inspection is reported, together with a statement of all debits and credits on different accounts. The last inspection was made July 27, 1904, and reported as follows:

| Assets. | | Liabilities. | |
|----------------------------|------------------|--|------------------|
| Assistant treasurer..... | \$7,762.50 | Balances paid..... | \$221.66 |
| Cadet cash..... | 551.60 | Corps of Cadets..... | 3,021.44 |
| Cadet laundry..... | 358.18 | Dialectic society..... | 429.76 |
| Cadet mess..... | 7,561.96 | Equipment fund..... | 56,656.00 |
| Cadet store..... | 32,620.13 | Young Men's Christian Association..... | 175.25 |
| Reserve fund..... | 10,000.00 | Miscellaneous fund..... | 131.39 |
| Washstand, etc., fund..... | 258.79 | Deposits..... | 153.41 |
| Cash on hand..... | 2,253.90 | Gas fund..... | 647.10 |
| Miscellaneous items..... | 65.95 | | |
| Total..... | 61,436.01 | Total..... | 61,436.01 |

I append herewith a statement which shows the volume of business transacted by this office for the fiscal years ending June 30, 1903 and 1904, respectively.

| | |
|-----------------------------|----------------|
| Total Dr., fiscal year— | |
| 1903..... | \$1,227,859.24 |
| 1904..... | 1,370,803.93 |
| Balance in favor, 1904..... | 143,944.69 |
| Total Cr., fiscal year— | |
| 1903..... | 1,236,591.30 |
| 1904..... | 1,347,421.99 |
| Balance in favor, 1904..... | 110,830.69 |

This shows quite clearly the enormous increase in the business of this office. The volume of business handled through the Treasurer's office is much greater than that of many good-sized country banks.

QUARTERMASTER OF CADETS.

The volume of business transacted by the cadet store has also increased. The better financial condition of the cadets has given them greater purchasing power, and this has consequently increased the business of their supply department, the cadet store; especially in the sales of athletic goods is this increase noticeable. The old building is too small and the entire plant is inadequate to handle the business devolving upon it with the facility and smoothness which are requisite for the most economical practice. This is especially true of the tailoring and shoe and clothing repairing departments. This congested condition, however, it is hoped will soon become a thing of the past, as a splendid building for the cadet store has been planned which will afford ample room not only for the present needs of the cadet store, but for any reasonable future demands which may be made upon it. In the plans of this new structure have been incorporated those features which the experience gained in the many years' occupancy of the present building have shown to be desirable.

The usual list showing the amount of clothing manufactured and repaired at the cadet store during the year follows:

| | Manu- factured. | Re- paired. |
|---|--------------------|----------------|
| Dress coats..... | 474 | 1,216 |
| Overcoats..... | 180 | 987 |
| Blouses..... | 587 | 1,405 |
| Trousers: | | |
| Gray..... | 767 | 1,397 |
| White..... | 1,457 | 1,989 |
| Flannel..... | 324 | |
| Riding..... | 160 | |
| Line officers'..... | 111 | 303 |
| Staff officers'..... | 12 | |
| Riding breeches, officers'..... | 71 | |
| Dress coats, officers'..... | 1 | 22 |
| Overcoats, officers'..... | 0 | 41 |
| Blouses, officers'..... | 204 | 109 |
| Capes, officers'..... | 3 | 16 |
| Miscellaneous, including "cits," etc..... | | 1,072 |
| Chevrons sewed on..... | | 489 |
| Service stripes sewed on..... | | 1,244 |
| Socks tagged..... | | 7,632 |
| Shoes..... | | 2,815 |
| Total..... | 4,351 | 20,714 |

The above total only shows the articles which were made or repaired at the cadet store, but from it can be gained an insight into the large volume of business transacted in supplying the cadets with the numerous articles required by them, such as underclothing, bedding, stationery, toilet articles, text-books, drawing material, athletic goods, in fact, every article of every description whatsoever required for their physical well-being, except food.

CADET LAUNDRY.

The amount of work done at the cadet laundry during the last year has also increased, as is shown by the following comparative statement. The additional boiler and new engine installed a year ago have enabled the laundry to answer all demands made upon it.

The laundry building, the main part of which is quite old, is only in fair condition, but it has not been thought advisable to expend any large sum of money in thoroughly repairing same, as it is anticipated that the present building will make way for a modern structure, so constructed and arranged that the cost of laundering will be reduced to a minimum. For this reason only such repairs have been made as are absolutely necessary to maintain the building in a slightly and sanitary condition. At the present time a new roof over the entire building, of a temporary character, is being laid, as it is not thought advisable for the above-stated reasons to have an expensive permanent roof of metal or slate put on.

The laundry machinery is in good condition, and the system, order, and management of the business has, in my opinion, been greatly improved during the past year.

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 | 46,387 | Sheets | 32,126 |
| Belts, sword | 4,231 | Shirts, white and negligee | 29,276 |
| Belts, waist | 24,727 | Shirts, night | 10,555 |
| Blankets, single | 82 | Shirts, under | 56,800 |
| Coats, fatigue | 17 | Socks | 59,784 |
| Clothes bags | 6,951 | Towels | 85,982 |
| Collars | 128,679 | Trousers, gray | 173 |
| Cuffs | 103,215 | Trousers, white | 39,976 |
| Drawers | 53,121 | | |
| Gloves | 52,118 | Total | 854,476 |
| Handkerchiefs | 93,489 | Total, 1902-3 | 885,388 |
| Pajamas | 7,955 | | |
| Pillowcases | 19,122 | Decrease during year | 30,912 |

For cadet hospital.

| | | | |
|------------------------|-------|----------------------------|--------|
| Bedspreads | 898 | Tablecloths | 136 |
| Blankets, single | 7 | Towels | 14,023 |
| Mattress-covers | 5 | | |
| Napkins | 974 | Total | 25,800 |
| Pajamas | 893 | Total 1902-3 | 23,409 |
| Pillowcases | 3,618 | | |
| Sheets | 4,199 | Increase during year | 2,391 |
| Shirts, hospital | 1,047 | | |

For cadet mess.

| | | | |
|-------------------|---------|----------------------------|---------|
| Aprons | 9,673 | Tablecloths | 20,323 |
| Caps | 221 | Table felts | 1,179 |
| Jackets | 9,626 | Towels | 37,533 |
| Meat cloths | 374 | | |
| Napkins | 167,668 | Total | 251,224 |
| Overalls | 519 | Total 1902-3 | 205,859 |
| Pillowcases | 1,357 | | |
| Sheets | 2,751 | Increase during year | 45,365 |

| | | | |
|---|--|--|-----------|
| Grand total of pieces laundered | | | 1,131,500 |
| Grand total of pieces laundered, 1902-3 | | | 1,114,656 |

Increase during year

16,844

COMMISSARY OF CADETS.

It is with great pleasure I begin this part of my report, for here is one department under my charge which is equipped with a modern plant in a building of such ample size as to give plenty of much-needed room for all the operations attendant upon the serving of good food in ample quantity and variety to the Corps of Cadets. The long-desired improvements have been at last completed, and the remodeled mess hall, with its splendid new additions and its thoroughly modern, up-to-date plant, superbly equipped with every labor-saving device which experience has shown to be necessary, constitutes an ideal mess.

With the splendid facilities for storing foodstuffs it is now possible to buy not only staple groceries in large quantities from first hands, thus obtaining them at the lowest possible price, but perishable articles of every description are bought in the same manner and stored in the splendid refrigerators, which are maintained at the proper temperatures by artificial refrigeration.

The cadet mess is now complete within itself. It is dependent upon no outside source for light, heat, or power. The powerful battery of boilers furnishes ample steam for all necessary purposes. A dynamo so large in capacity that it not only furnishes all the light and power required in the cadet mess, but also lights the library and drives the sewing machines in the tailor shops of the cadet store, is installed in the engine room. In addition an auxiliary machine of about one-half this capacity enables the cadet mess to utilize power from an outside source. This duplication of the generating machinery insures electric light and power at all times.

Besides the electric generating units, the engine room is equipped with a fine refrigerating machine of the ammonia absorption type, all the working parts of which are in duplicate to insure its operation under almost any conceivable eventuality. An air fan for furnishing pure, cold air to the kitchen, a hot-water heater of enormous capacity, in which the water is heated by the exhaust steam from all of the steam-using apparatus, and a very large and handsome distributing switch board completes the equipment of the engine room.

The new bakery has been fitted with every labor-saving device possible to utilize. It is a very handsome room, ideally sanitary, and the quantity and quality of goods turned out by it are remarkable.

Among the other labor-saving devices with which the cadet mess has been equipped may be mentioned a few of the many: A "fool-proof" hydraulic elevator for lifting heavy stores from the basement storerooms to the kitchen floor; a potato-peeling machine, which peels a half bushel of potatoes in four minutes and only removes the skin, not the potato; a milk-sterilizing apparatus, in which every drop of milk used in the cadet mess either for drinking or cooking is thoroughly sterilized. Tests made of this milk at the laboratory of the Department of Health, New York City, after being sterilized, showed the entire absence of bacteria. Although the milk is produced on a dairy splendidly located, very distant from the surrounding farms, and from well-fed, healthy cows, no chances are taken with the milk, but every can is sterilized as soon as it reaches the cadet mess, and then stored in a temperature of 45° until it is used. This dairy produces milk only for the cadet mess, and, by the terms of the contract, must be operated in accordance with certain stipulated conditions, which insure an ample supply of pure milk. In addition, the dairy is under the constant surveillance of the Superintendent.

Ice cream is made by machinery, and ice for all purposes is broken by a machine. The ice used in the cadet mess is made by a refrigerating machine from distilled water.

The kitchen proper is thoroughly equipped with every requisite cooking appliance. In the butcher shop adjoining the kitchen, from the time the meat, which is bought in carload lots, is received it does not have to be lifted by human hands until it is to be used, as it is equipped with overhead tracks and trolleys, which eliminate the old-time handling and lifting of the meats.

Not only are the working parts of the mess thoroughly equipped, but the dormitories and lavatories provided for the employees of the mess will bear favorable comparison with the rooms set apart in the best hotels in this country for this class of employees.

Every endeavor has been made to make the cadet mess what it should be, clean and comfortable, and the keynote of the means by which this result has been obtained is system. It is not to be believed for one instant that the present system is perfect. It can be and will be greatly improved upon, but just now the results of system are manifest.

The gratifying results which have followed the completion of this splendid

plant leads me to believe that when similar modern, up-to-date buildings, carefully planned for the needs of the situation, are furnished for the cadet store and for the cadet laundry that the same results will follow in those two departments.

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

| | | | | | |
|---------------------------|----------|---------|--------------|-----------|---------|
| Butter..... | pounds.. | 38,128 | Milk..... | gallons.. | 62,350 |
| Coffee..... | do.... | 9,165 | Eggs..... | dozen.. | 14,202 |
| Fish, fresh and salt..... | do.... | 17,250 | Flour..... | pounds.. | 146,344 |
| Meat, fresh..... | do.... | 242,977 | Poultry..... | do.... | 20,230 |
| Meat, salt..... | do.... | 15,183 | Sugar..... | do.... | 78,154 |
| Potatoes..... | do.... | 215,391 | | | |

The cost of subsistence of the mess during the last year has been 64.3 cents per day, as against 53.9 cents per day for the last year, which amounts to an increase in the cost of board per cadet per annum of \$37.96.

The cost of nearly all food supplies has been maintained at a very high level during the past fiscal year. Higher prices have been paid this year for every one of the articles enumerated in the table above than was the case last year. In addition to the high prices paid for food, a considerable sum of money has been expended for new silver, china, and glassware and for table linen, all of which has materially contributed to increase the cost of the board bill. It is believed, however, that the improvement in quality, variety, and service more than compensates for the additional cost of living to the cadet.

Very respectfully,

THOS. FRANKLIN,

Captain and Treasurer, United States Military Academy.

The ADJUTANT UNITED STATES MILITARY ACADEMY.

APPENDIX E.

REPORT OF THE COMMANDANT OF CADETS.

HEADQUARTERS UNITED STATES CORPS OF CADETS,
West Point, N. Y., July 30, 1904.

SIR: In compliance with Circular No. 57, Headquarters United States Military Academy, July 14, 1904, I have the honor to submit the following report:

The regular programme for practical instruction in the department of tactics is appended herewith. Changes in order and arrangement have been made in numbers attending and in methods of instruction as circumstances and progressive development of the course indicated necessary. The constant aim of the department has been to include in its course of instruction every requirement and duty that a military man is called upon to perform and be proficient in as an instructor of enlisted men, based on the principle that an officer to be an efficient instructor and leader must be intimately and practically acquainted with all the details of his work and personally able to perform them. With this end in view, the programme has been constantly amended and enlarged to include the actual performance of all duties that an enlisted man is called upon to perform, the last year being made as far as practicable of a normal character, using cadets as assistant instructors and giving them opportunities for exercising the functions of command.

A course of lectures has been prepared and delivered to the first class from January 15 to March 14 by the commandant of cadets and tactical officers in the following subjects:

| | |
|--|--|
| Company records and returns. | Regimental and post records and returns. |
| Quartermaster's records and returns. | Customs of the service. |
| Subsistence records and returns. | Uniform and field equipments. |
| Post treasurer's and exchange returns. | Military etiquette. |
| Returns pertaining to recruitment. | Horse equipment. |

Copies of all forms and papers used in the several departments of the Army have been supplied to each graduate, and the method of making out and forwarding same given.

Copies of all authorized manuals and regulations issued by the War Department have been supplied to each graduate.

For the purpose of observation and practical experience, all cadets of the first class are required to be present once at Sunday morning inspection of quarters at each of the detachments of enlisted men stationed here—cavalry, artillery, and engineers—when the regular inspection of barracks and mess rooms is made, and opportunity is then given to acquire knowledge of methods of the internal administration of an organization in all its details.

A regular course of recruit instruction has been developed and perfected by which the new cadets being held in barracks during the early part of the encampment are given their preliminary instruction in infantry drill and guard duty and thoroughly equipped before being put in camp and on duty with the battalion. By the progressive course developed much time is saved and systematic and equal attention is given to each individual. Cadets of the first and third classes are used as assistant instructors and are changed periodically by detail, thus giving opportunity for all to gain experience and efficiency as instructors of recruits.

By this method it is found practicable to prepare and place the new cadets on duty in the battalion with twenty days' preliminary work.

The details of each day's work has been carefully kept and placed on record in a book kept for that purpose by the officer in charge of instruction of new cadets, Capt. J. K. Thompson, Twelfth Infantry.

The Battalion of Cadets, band, 45 men of the detachments of cavalry, artillery, and hospital corps, clerks, policemen, expert laundry employees, and 50 horses were taken to the Louisiana Purchase Exposition, St. Louis, Mo., May 28 to June

11, 1904, and encamped within the ground under our own canvas at Camp Henry J. Reilly.

The command was very satisfactorily subsisted at the hotel Inside Inn.

A drill programme—infantry, cavalry, and setting-up exercises—was given in the forenoons, and dress parades, reviews, and inspections and similar ceremonies in the afternoons.

The command participated in the ceremonies on Memorial Day, Missouri Day, and as escort on Liberty Bell Day.

Many hospitalities were extended to the command by the officials of the exposition and State and foreign and concession officials, which were greatly enjoyed and appreciated.

The trip was made on schedule time and without accident or confusion.

Recently two changes have been made in the infantry drill regulations in force here. The tentative drill regulations prepared under General Ruger replaced the regular drill regulations for a time. A return was made to the original infantry drill regulations and these were superseded in May, 1904, by the new infantry drill regulations prepared by an infantry board of the General Staff. A typewritten copy of these regulations and advance sheets of same were furnished and all infantry drills have been conducted under them.

Suggestions for changes in same were called for and have been made from time to time as experience showed to be advisable.

A careful and progressive course in both close and extended order has been followed, the extended order culminating in problems in attack and defense of positions by the entire corps and also the occupation of lines and positions on the Saturday forenoons during camp, sufficient time being then available. The command has been frequently deployed to occupy a line extending from the river near the south dock and east across the hill near Lusk reservoir to the river near the target butts on the north. Careful maps and reports are prepared in the field and submitted. Sample appended.

The regular course in target practice prescribed for the Army has been followed, and cadets qualifying as marksmen and sharpshooters have been issued and are permitted to wear the authorized badges.

Great personal interest is evinced in this work, and there has been constant improvement. The battalion is now supplied with the new model 1903 Springfield rifle, and the results the present season indicate further improvement in that line.

As cited in my report of 1903, owing to the increase in number of cadets to be instructed, and the time and riding hall accommodations remaining the same, the amount of instruction possible to the individual is too small.

Advantage has been taken of every opportunity to supplement the course by voluntary riding on the road, use of cadet drivers at artillery drill and extra drivers mounted on the off horses, and by voluntary riding and polo.

It is becoming more and more evident, as the cavalry is being concentrated in larger commands and progress in the refinements of that branch is made and mounts become more valuable, that to be a good rider alone is not necessarily to be a good cavalryman. He must be a good horseman, and that in all its various meaning and details.

He must have a liking for his horse and an accurate knowledge and sympathetic appreciation of his powers and weaknesses, and know how best to train and care for him to keep him at his best.

These qualities do not exist in all men, but every effort is made by lectures and opportunity for studying the possibilities and good qualities possessed by the horse if he is intelligently handled and given a fair chance to do his best.

Such demonstrations are given in the outdoor riding ring, where the horse, first carefully trained to take obstacles unencumbered and not interfered with, is then used to teach his rider how to safely and comfortably retain his equilibrium and a firm seat, and not inflict unintentional and painful punishment to his mount through the medium of his bit and spurs.

The third class instruction in riding is begun during camp.

This instruction should be supplemented by additional riding on the road during recreation hours after March 15, and should be taken as a detachment and under the supervision of an instructor. According to the present schedule a third class man has no practice at riding from March 15 until September.

The use of the polo ponies has been of marked value in interesting cadets and improving their riding and horsemanship, adding zest and interest to exercises at riding by bringing in the spirit of contest, competition and sport.

The horses of the artillery detachment are available for voluntary riding on the road and would be excellent mounts for the third class to use on their road rides at a trot.

A practice march of three days to and from Tuxedo Park for the first class, mounted and equipped as a troop of cavalry, was had in the latter part of camp 1903, when instruction was given in map making, making and breaking camp, individual cooking of the field ration, interior guard, care and grooming of horses, and general instruction pertaining to the march and camp was given, cadets being required to do the entire work.

The theory of instruction in riding has been to develop all seats, from the bare-back seat as the guiding principle, special attention being given to gaining confidence and fearlessness.

It is believed that all preliminary instruction should be given without use of saddle and stirrups.

The use of the double rein in both cavalry and artillery instruction has demonstrated its great advantage over the use of the curb alone, both in the quiet behavior and even gaits of the horses and the absence of pullers and bolters, made so almost invariably by the inexperienced and heavy hand pulling on the curb.

The authority to limit assignments to the cavalry to those specially qualified by temperament, interest in the horse, and physical conformation is a step in the right direction.

Corresponding limitations for recommendations for all other branches would be of equal value.

Now that the importance of having cavalry officers thoroughly proficient in all that pertains to the horse in his care—treatment, preservation, and handling—is being more and more recognized and required, I urgently recommend the permanent employment here of the services of the most skilled and practical veterinarian and horseman as an assistant instructor and master of the horse that can be found and secured.

The instruction in artillery, both mounted and foot, has been according to the original programme, except that in light artillery no drivers except cadets are used at drills and exercises.

Besides giving the valuable practical experience in driving and management of an artillery team to the cadet, it offers opportunity for additional practice at riding.

The opportunity to give anything approaching service practice at seacoast artillery has never been available here. The 8-inch rifle on disappearing carriage and 12-inch mortar have been useful in explaining details in loading and handling ammunition at the guns proper, but opportunity for instruction in fire control and direction, range finding, and methods of communication applicable to the modern system of coast defense are not available here. Application has been made to take the first class to Fort Totten, N. Y., during the month of August for a period of three days—the class to go into camp there, to be subsisted at the battery messes, and to be given practical instruction in coast artillery drill regulations and mines.

This arrangement has been made possible by the co-operation of Col. Arthur Murray, Artillery Corps, commanding Fort Totten, N. Y.

A course in mounted reconnaissance and road map making for the first class has been arranged to take place during August of the present encampment. The cadets will go equipped for the field and will be absent two days each, field rations and shelter tents being taken, the technical instruction to be under direction of the instructor of practical military engineering, and the military conduct to be under the direction of the department of tactics.

I recommend that the drill programme for the next year's encampment and each year following be so arranged that all practical instruction pertinent to the permanent camp here be completed by August 15, and then that at least ten days be occupied in making a practice march under service conditions, the command being organized and divided into a battalion of infantry, a troop of cavalry, a light battery of artillery, a platoon of mountain artillery, a pack and wagon train, and an engineer detachment for small road repairs and bridge building, service mess outfits and rations to be used, all duties to be performed by cadets in rotation and by roster.

The athletic training of the fourth class has been conducted along the established lines. Whenever occasion has presented itself the entire battalion has been given exercise at setting-up drill. It is important that some regular gymnastic exercise of this nature should be arranged for all cadets throughout their course here, and cadets of the first class should be prepared and fitted to act as instructors to take charge of this necessary and important work in the service after graduation.

Fencing has been given the usual special attention, and the team developed this year again won the intercollegiate fencing tournament, one of the members, Cadet Honeycutt, winning the individual championship by the record score, winning

every bout. The development of this team was accomplished by voluntary work of its members during recreation hours and with the aid of a civilian expert, whose services were paid for by the Army Athletic Association. The best fencing master available should be employed by the Government and sent here for duty. Owing to the increase in size of classes and numbers of cadets to be instructed, and the continuing extension of the field and requirements in this department, it is necessary that additional instructors should be available, and I recommend the employment of the best swordsman, expert gymnast, and athlete, with the desired personal qualifications, that can be secured. This department has been brought to a high state of efficiency by its present head, First Lieut. H. J. Koehler, whose services and ability are recognized and utilized throughout the service, and early steps should be taken to insure continued efficiency and progress in this important branch of the military training and service by providing him permanent and expert assistants.

The messing facilities now provided are excellent, and every requirement for the conduct of a most efficient and satisfactory mess has been provided. By the constant supervision of those in authority and the energetic and efficient attention to its conduct by the commissary of cadets, Capt. Thomas Franklin, commissary of subsistence, U. S. Army, the mess is in a high state of perfection. The supplies furnished are of good quality. The shoe furnished cadets is not yet entirely satisfactory.

With the relief from the charges of policing barracks, for gas and for washstand and permanent room furniture as originally met by the cadet, and the addition made to his equipment fund by this amount it is confidently expected that a cadet can graduate and go into the service fully equipped and free from debt. This important condition can not be too earnestly sought to be brought about by the individual effort of the cadet and by those supervising his expenditures.

The discipline in the Corps of Cadets has continued satisfactory. Endeavor has been made to impress upon cadets in authority the importance of fostering the impulse and guiding motive to perform duty for duty's sake, to confine their requirements strictly to those prescribed by proper authority in orders and regulations in spirit and letter, to render voluntarily to the Government his best and most conscientious service, and when he has a task to perform to do it to a finish and to the best of his ability.

The absolute necessity for the highest standard of individual honor in all his relations and his spurning of all forms of quibbling has been earnestly impressed upon cadets and governs their attitude.

An investigation under the provisions of paragraph 128, Regulations United States Military Academy, relative to hazing and improper treatment of new cadets, has been held, with the result that no instances of hazing or fighting have been developed.

The requirements made upon new cadets are limited strictly to those prescribed by orders and regulations by proper authority, and while there still remains an inclination on the part of older cadets to exact requirements of fourth classmen, mainly because they are fourth classmen, and also a persistent willingness and even desire on the part of fourth classmen themselves to follow conditions which they have heard were traditional, the conditions now are such that no fourth classman can suffer abuse.

The conditions to be permanently established are those wherein every requirement made on them shall be limited strictly to those prescribed by the authority of the commanding officer.

I desire to record my appreciation of the efforts of cadet officers, noncommissioned officers, and those in authority "by detail" to carry out all instructions. There have been a few mistakes, due mainly to errors of judgment.

The general conditions indicate constant and progressive improvement among cadets and a clearer conception of correct methods of inculcating and maintaining discipline.

The average efficiency mark for the class of 1905 is about 0.17 greater than that of last year.

It is desired to invite attention to the fact that the time allotted to this department and the weight accorded the military efficiency of a cadet, indicating his value as an officer, is not commensurate with the importance of this element of his make-up. His personal, moral, and physical qualifications to be an efficient officer should stand at the head when grading graduates at the Military Academy for appointment to be commissioned officers of the Army.

I recommend that a regulation be framed and adopted under which a cadet after fair trial, who shows himself physically and personally deficient in qualities of force, individuality, and stability of character, may be reported by the com-

mandant of cadets as of doubtful proficiency in this respect and not a desirable candidate for a commissioned officer; the academic board to take final action after due investigation and report.

I also recommend, in view of the constantly increasing importance that is being ascribed to the special personal qualifications possessed by a cadet affecting his fitness for a particular arm of the service, that the senior instructors of cavalry and artillery and infantry be made by law members of the academic board under the same conditions as the senior instructor of practical military engineering.

I have received the willing and active co operation of all my assistants in the department of tactics in the administration of the affairs of the department, and to their careful attention to the details of the work pertinent to their special department is due whatever has been accomplished in promoting and establishing efficiency.

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 31.

| | Detail. | | Months. | Hours. | |
|--|------------|------------|-----------------|--|-----------|
| | Men. | Class. | | A. M. | P. M. |
| INFANTRY. | | | | | |
| Setting-up drill, manual of arms, bayonet exercise, close and extended order. | Whole ... | 1, 2, 3, 4 | Mar. 15-Mar. 31 | ----- | 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 27-July 9 | 9.00-10.00 | ----- |
| Drill (except Saturdays) | do | 1, 3, 4 | July 10-Aug. 15 | 7.15- 8.00 | ----- |
| Instruction preparatory to tactical exercises (Saturdays). | do | 1 | do | 7.30-12.30 | ----- |
| Do | Whole ... | 3, 4 | do | 7.30-12.30 | ----- |
| Reconnaissance, mounted. | Third ... | 1 | Aug. 15-Aug. 20 | Two days' detail each. East side of river. | |
| Infantry drill | Detail ... | 1 | do | 7.30- 9.30 | ----- |
| Do | do | 3 | Aug. 15-Aug. 27 | 7.30- 9.30 | ----- |
| Do | Whole ... | 4 | do | 7.30- 9.30 | ----- |
| Advance guard, outpost, intrenching, etc. | Detail ... | 1, 2, 3, 4 | Sept. 7-Oct. 7 | ----- | 4.15-5.20 |
| Manual of arms, firing, bayonet exercise, close and extended order, and battalion drills. | Whole ... | 1, 2, 3, 4 | Oct. 9-Oct. 30 | ----- | 4.15-5.20 |
| 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 (four days). | Whole ... | 1 | June 27-July 9 | 10.30-12.00 | ----- |
| Riding with third class | Detail ... | 1 | do | 7.15- 8.30 | ----- |
| Riding | do | 3 | do | 7.15- 8.30 | ----- |
| Instruction in the school of the trooper, squad, troop, and squadron (except Saturdays). | do | 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 | 7.15- 8.00 | ----- |
| Riding in hall, cadets, except practical military engineering detail on rainy days. | do | 3 | do | 8.00- 9.45 | ----- |
| Riding | do | 3 | Aug. 15-Aug. 27 | 7.30- 9.30 | ----- |
| Equitation-riding, pad saddle ^a | do | 1, 2 | Sept. 7-Oct. 7 | ----- | 4.15-5.20 |
| Instruction in riding hall every other week day (Saturday excepted). | do | 3 | Nov. 1-Mar. 15 | ----- | 2.00-4.00 |

^a Only such cadets as are reported by the senior instructor of cavalry and the commandant of cadets as having a satisfactory military seat.

Programme of practical military instruction, etc.—Continued.

| | Detail. | | Months. | Hours. | |
|--|---------|--------|--------------------------------------|-------------|-----------|
| | Men. | Class. | | A. M. | P. M. |
| CAVALRY—continued. | | | | | |
| Instruction in riding hall every other week day (Wednesday and Saturday excepted). | Detail | 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 | ----- |
| Saturday's same, except during February. | Whole | 1 | (Sept. 1-Dec. 1) (Mar. 15-June 1) | 11.00- 1.00 | ----- |
| LIGHT ARTILLERY. | | | | | |
| Instruction (eight days) divided between light, mountain, and horse artillery. | Detail | 1,2,3 | Apr. 1-Apr. 30 | ----- | 4.15-5.30 |
| Instruction preparatory to tactical exercises (Saturday). | Whole | 1 | June 27-July 9 | 10.30-12.00 | ----- |
| Drill (except Saturday) | Detail | 1 | July 10-Aug. 15 | 7.30-12.00 | ----- |
| Artillery target practice, artillery in the field, and field cooking. | do | 1,3 | do | 8.30-10.00 | ----- |
| Drill | do | 1 | Aug. 15-Aug. 20 | 7.15- 2.00 | ----- |
| The drills in light artillery included instruction in the school of the driver, fitting of harness, use of the coupling reins of offhorse, instruction to post teams with their carriages, to hitch and unhitch, employment of light artillery in the field. | do | 1,3 | Sept. 7-Oct. 7 | ----- | 4.15-5.20 |
| Instruction in camp in field. During the present season, August 15 to August 20, 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 9 | 7.30- 8.15 | ----- |
| Infantry instruction | do | 4 | do | 8.45- 9.45 | 4.15-5.30 |
| Preliminary target instruction | do | 4 | do | 10.30-11.15 | ----- |
| Lectures, blue book, regulations U. S. Military Academy, care of arms and equipments, security, and information. | do | 4 | do | 12.00-12.45 | ----- |
| COAST ARTILLERY. | | | | | |
| Drill | Detail | 3 | Apr. 1-Apr. 30 | ----- | 4.15-5.30 |
| Do | do | 1,3 | July 10-Aug. 15 | 8.30-10.00 | ----- |
| Practical instruction at Fort Totten, N. Y. | Whole | 1 | Aug. 21-Aug. 25 | ----- | ----- |
| Drill | Detail | 3 | Sept. 7-Oct. 7 | ----- | 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 plotting board to determine position, speed, and direction of moving vessels. | | | | | |
| PACK-TRAIN SERVICE. | | | | | |
| Drill | Detail | 1,2 | Apr. 1-Apr. 30 | ----- | 4.15-5.30 |
| Do | do | 1 | June 27-July 9 | 7.15-10.00 | ----- |
| Do | do | 1,2 | Sept. 7-Oct. 7 | ----- | 4.15-5.20 |
| The drills included instruction in the setting up of the aparejo, fitting the same to 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 | 1,3 | July 10-Aug. 15 | 8.30-10.00 | ----- |
| Do | do | 4 | do | 8.30- 9.30 | ----- |
| Do | do | 3 | Sept. 7-Oct. 7 | ----- | 4.15-5.20 |
| 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. | | | | | |

Programme of practical military instruction, etc.—Continued.

| | Detail. | | Months. | Hours. | |
|---|--------------|--------|-----------------|-------------|-----------|
| | Men. | Class. | | A. M. | P. M. |
| 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 27-July 9 | 10.30-12.00 | |
| Drill | Detail | 1,2 | Sept. 7-Oct. 7 | | 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 | 1,2,4 | Apr. 1-Apr. 30 | | 4.15-5.30 |
| Do | do | 1,4 | July 10-Aug. 15 | 8.30- 9.30 | |
| 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 | 2,4 | Apr. 1-Apr. 30 | | 4.15-5.30 |
| Do | do | 1,4 | July 10-Aug. 15 | 8.30- 9.30 | |
| Do | do | 3,4 | Sept. 7-Oct. 7 | | 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. | | | | | |
| Pistol | Detail | 1,2 | Apr. 1-Apr. 30 | | 4.15-5.30 |
| Rifle | do | 4 | do | | 4.15-5.30 |
| Do | do | 3 | June 27-July 9 | 7.15-12.30 | |
| Do | do | 1 | July 10-Aug. 15 | 7.15-12.00 | |
| Do | do | 3 | do | 10.05-12.15 | |
| Do | do | 4 | Sept. 7-Oct. 7 | | 4.15-5.20 |
| Pistol, dismounted | do | 1 | June 27-July 9 | 7.15-10.00 | |
| Pistol, mounted | do | 1 | do | 7.15-10.00 | |
| Pistol, dismounted | do | 1 | July 10-Aug. 15 | 7.15-12.00 | |
| DANCING. | | | | | |
| Instruction | Detail | 3 | June 27-July 9 | 10.10-11.05 | |
| 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. 15-Aug. 27 | 12.00-12.45 | |
| Do | Half | 4 | do | 10.00-11.00 | |
| Do | do | 4 | do | 11.00-12.00 | |
| SWIMMING. | | | | | |
| Cadets not qualified | Detail | 3 | June 27-July 9 | 11.45-12.45 | |
| Cadets not qualified, except Wednesday and Saturday. | do | 1,3 | July 10-Aug. 15 | | 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. 15-Aug. 27 | 10.00-11.00 | |
| Do | do | 4 | do | 11.45-12.45 | |

Lectures were delivered to the first, third, and fourth classes on days unfit for practical work outdoors, 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 F.

REPORT OF INSTRUCTOR OF PRACTICAL MILITARY ENGINEERING.

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

SIR: In accordance with the instructions contained in Circular No. 57, current series, Headquarters United States Military Academy, I have the honor to submit the following report of the operations of the department of practical military engineering, covering the period from September 1, 1903, to August 20, 1904.

ENGINEER TROOPS.

The engineer detachment has an authorized maximum strength of 88 men; it furnished a daily detail of from ten to eleven men for the post guard, needful details for cadet instruction in target practice and drills in practical military engineering, and kept the batteries on the post thoroughly policed.

The detachment received instruction in target practice, infantry and engineering drills, and in signaling during the summer months. During the winter months a morning school was conducted for instruction in common school studies, with indoor engineer drills, gallery practice, instruction in the carpenter and blacksmith shops and in masonry work during the afternoons.

In the carpenter shop the detachment constructed 72 large clothes lockers to replace those heretofore in use in the engineers' barracks. With money appropriated by Congress the water-closet has been put in thorough order, the bathroom remodeled, a new cement floor laid, three excellent shower baths installed, and the interior of the barracks has been partially repainted.

The instruction of the detachment as a tactical unit is hindered by the many duties which devolve upon it in the instruction of cadets and for other purposes connected with the administration of the Military Academy. To provide for the increased work of preparing for cadet drills, due to the increased number of cadets, it is believed that the maximum strength of this detachment should be greater than at present. The discipline of the detachment has been very good.

WATERWORKS.

The annual appropriation of \$1,200 for the care of the waterworks was expended in washing and replacing filter sand in the main filter beds, in the general policing of the reservoir area, for tools, and for other necessary work of maintenance and repairs.

DEPARTMENT OF PRACTICAL MILITARY ENGINEERING.

The annual appropriation of \$2,000 for the use of this 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.

INCREASE OF THE WATER SUPPLY.

Congress having appropriated a sufficient amount of money to provide for the completion of the work of increasing the water supply of the post, a project was submitted, and on April 26, 1904, was duly approved by the Secretary of War. Steps have been taken for the acquirement of the necessary land and water rights. Surveys are now in progress for the location of the pipe line and for determining the boundaries of the right of way which it will be necessary to acquire. A short pipe line has been laid from Delafield Reservoir to the cadet mess, which will

temporarily supply water for the refrigerating plant, for the cadet sink, and for the gymnasium tank.

CADET INSTRUCTION.

Third class.—From June 27, 1904, to July 9, 1904, one-third of the third class attended practical military engineering each day, Sundays excepted, from 8 a. m. to 12 m.; and from July 9 to August 12 one-third of this class attended each day, Saturdays and Sundays excepted, from 8.30 a. m. to 12.30 p. m.

Instruction was given in the practical use of survey instruments and in surveying methods. This class is taken when it has had no previous instruction along these lines. It has been the endeavor to make the instruction as practical as possible; the instruments were first explained very carefully, adjustments and uses being outlined in brief lectures. The instruments were then placed in the hands of the cadets, and, under their instructors, they were required to familiarize themselves with the instruments, to adjust them, and to use them in making a survey of a limited portion of the reservation. This class made gratifying progress, and it is believed that at the end of the course every cadet had acquired a good practical knowledge of the entire work. The survey work done by the cadets may be incorporated in the large-scale topographical map of a portion of the reservation which is now being prepared.

Second class.—During October, 1903, one-half of this class attended drill each week day, Saturdays and Sundays excepted, and was given instruction in signaling with the flag and the heliograph.

First class.—One-half of this class attended drill each week day, Saturdays and Sundays excepted, during October, 1903, and April, 1904, from 4.15 p. m. to 5.30 p. m. During October instruction was given in bridge building, pontoon bridges, trestle bridges on land and over water, and in improved bridges.

During April instruction was given in measuring the flow of small streams, in road location, in the construction of obstacles, in the measurement of base lines, in profiling and defilading, and problems in field geometry.

From July 9 to August 12, 1904, one-half of the class attended drill each week day, Saturdays excepted, from 10.30 a. m. to 12.30 p. m. Instruction was given in the fabrication of siege material; in knots and lashings, rigging blocks and falls, erecting shears, gyps, and derricks; in the use of screw and hydraulic jacks; in rowing; in the construction of spar bridges, trestle bridges, and improvised bridges; in throwing up gun pits and gun epaulments; in making sandbag, gabion, and fascine revetments; in camping expedients, latrines, etc.; in reconnaissance methods and the use of reconnaissance instruments.

From August 15 to 20, 1904, each half of the class was taken out for two days' mounted reconnaissance. The half of the class was divided into seven squads of about eight men each. Each squad was in charge of an instructor, and the routes to be followed were designated in advance. At the end of the day's work the entire half of the class was united in camp at a point about 7 miles east of Garrisons. One night was spent in camp by each half of the class, and the following day the work was resumed and finished in the vicinity of Garrisons.

For each squad the two days' work made a closed circuit; the maps were plotted, together with descriptions of the roads and of the character of the country reconnoitered. Some of the maps were traced, and some instruction was given in the methods of reproducing field maps.

In each half of the class two squads used the sketching cases, one squad the Batson and one squad the cavalry case, and five squads used the topographical notebook and the compass. In all cases distances in sketching were taken by time intervals, and with the sketching cases the time intervals were checked by odometer readings, and the notebook parties used the odometer readings for their final plotting. Maps made by members of different squads are submitted herewith. One map made by each squad has been traced and reproductions made, copies of which have been distributed to the members of the squad. The maps have also been combined and a tracing of the combined map made, reproductions of which are submitted herewith. The maps were reproduced in the field by the blueprint process, and also by using velox paper, with which prints were obtained after dark in about fifteen minutes.

This work was interesting, and it is believed that it will be most valuable to the cadets, all of whom seemed to endeavor to obtain the greatest possible benefit from the instruction given.

I desire to express my thanks to the officers who assisted me in this reconnois-

sance work. The gratifying results obtained are largely due to their interest and to their efforts to make the work of real value to the cadets.

MISCELLANEOUS.

The need of an additional assistant in the department of practical military engineering has been severely felt throughout the year. It is earnestly recommended that another lieutenant may be assigned to duty in this department and with the detachment of engineers.

During the summer season about 40 cadets of the third class were under instruction each drill day in surveying, and about 58 cadets of the first class were being instructed in practical military engineering. In order that the third-class course may be efficiently conducted, it is absolutely necessary that each instructor should have to handle not more than 8 men each day. The head of the department should be free to superintend the work of this class during a portion of the time at least, giving his attention to the sections in turn, which means, with a class of the present size, that there must be at least five instructors in addition to the head of the department. As there were but two officers in the department, it was necessary to request that four additional officers should be detailed for temporary duty during the summer season, and it seems probable that at least this number of additional officers will be required in future; the head of the department, together with one officer who volunteered his services, handled the entire first-class section each drill day.

Especially in the instruction of the first class, it has been the aim to broaden the course as much as possible. Inquiries have secured from various sources information as to the kinds of practical knowledge that it is important for the graduates of the Academy to possess. There has been no attempt to make the cadets experts in any particular lines of work, but rather to give them a general acquaintance with a number of practical problems, such as they will be called upon to solve hereafter. It is believed that they will be better prepared to undertake their duties as officers than they would be if the same amount of time were devoted to a smaller range of subjects and greater excellence required in these.

Very respectfully,

MASON M. PATRICK,
Major, Corps of Engineers.

The ADJUTANT UNITED STATES MILITARY ACADEMY.

APPENDIX G.

REPORT OF THE LIBRARIAN.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., July 30, 1904.

SIR: I have the honor to submit the following report upon the work of the library for the period May 20, 1903, to July 1, 1904:

Users of the library.—The library is used by 88 officers attached to the Academy, by their families, by 470 cadets, by 36 enlisted men, and by 63 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 May 20, 1903.—Three thousand seven hundred and twenty-two books, pamphlets, maps, etc., have been added to the library since May 20, 1903. Periodicals purchased are not included in this count. Substantially every book received has been catalogued and is now on the shelves in use.

Periodicals.—We now subscribe for 144 periodicals, and receive by gift 42 periodicals, making a total of 186 periodicals available.

Recent fiction.—One hundred and twenty-five books per month are supplied by the Tabard Inn Library, of Philadelphia.

Statistics of circulation.—The following table will be of interest:

Books drawn from the library by different classes of readers between February 4, 1902, and February 26, 1904.

[Prepared by Miss Harriet R. Peck, of the State library, Albany.]

| | Total number of books drawn by each class of readers. | Fiction in English. | Biography. | Military science and art: The Army. | General works: Cyclopedias, dictionaries, etc. | Philosophy, logic, ethics, etc. | Religion: Bible, church history, devotional books, etc. | Sociology: Statistics, political economy, law, education, etc. | Philology: Languages. | Natural science: Mathematics, physics, geology, etc. | Useful arts: Engineering, trades, manufactures, etc. | Fine arts: Painting, architecture, music, etc. | Literature of all languages: Poetry, drama, essays, etc. | History of all countries: Maps, geography. |
|---------------------------------------|---|---------------------|------------|-------------------------------------|--|---------------------------------|---|--|-----------------------|--|--|--|--|--|
| Officers ^a | 9,242 | 5,169 | 283 | 362 | 1,066 | 50 | 124 | 188 | 56 | 189 | 238 | 105 | 620 | 792 |
| Officers' families ^a | 478 | 360 | 11 | 2 | 33 | 3 | 1 | 1 | 2 | 4 | 10 | 2 | 32 | 17 |
| Enlisted men..... | 1,776 | 1,389 | 37 | 29 | 89 | 2 | 5 | 16 | 8 | 20 | 33 | 26 | 50 | 72 |
| Cadets: | | | | | | | | | | | | | | |
| First class..... | 2,615 | 1,579 | 153 | 35 | 59 | 26 | 22 | 46 | 45 | 15 | 35 | 23 | 234 | 343 |
| Second class..... | 3,622 | 2,562 | 170 | 33 | 112 | 17 | 17 | 36 | 57 | 60 | 49 | 32 | 262 | 215 |
| Third class..... | 3,514 | 2,501 | 77 | 28 | 83 | 6 | 22 | 25 | 91 | 63 | 18 | 10 | 396 | 194 |
| Fourth class..... | 3,791 | 3,165 | 50 | 40 | 54 | 16 | 7 | 17 | 29 | 57 | 9 | 10 | 239 | 98 |
| Civilians | 2,604 | 1,894 | 43 | 35 | 274 | 2 | 19 | 27 | 7 | 37 | 32 | 40 | 129 | 125 |
| Total | 27,642 | 18,559 | 824 | 564 | 1,770 | 122 | 217 | 356 | 295 | 445 | 424 | 248 | 1,962 | 1,856 |

^aIt is impossible to distinguish books drawn for members of officers' families in most cases.

In examining the table, it should be remembered that almost the entire time of cadets is occupied by academic and military duties and that the library books taken out by them must necessarily be, in the main, such as will relieve the strain of study. They have no time for much professional reading. One would wish the time at their disposition to be divided between biography, history, standard works in English, French, and Spanish, and fiction in English. A considerable amount of reading is done in the library rooms by cadets, and of this there is no record, as the shelves are open to all.

The table shows that of the books drawn by the fourth class 83 per cent are fiction in English; third class, 71 per cent; second class, 71 per cent; first class, 60 per cent. The books are drawn for a period of two weeks or less. The table appears to show that entirely too many novels are read, to the neglect of biography and the standard books here classified as literature, and that this is especially true of the fourth class.

The figures of the table furnish several other obvious conclusions that need not be especially discussed here.

A part of the prescribed work of the department of modern languages (preparation of essays) was done in the library, and the same is true for the classes in military history and science of war. Captain Blakely illustrated his lectures on logarithms by exhibiting the principal tables from the library collections.

A count made on December 30, 1903, shows the number of books taken out on that day by all classes of readers to be 138. This does not include the works taken from the shelves and read in the library rooms.

Lectures to Cadets.—By direction of the Superintendent a lecture to the fourth class of Cadets was given on September 5, 1903, on the best methods of utilizing the library's collections by Cadets during their term at the Academy, and another lecture to the third class on September 12, 1903, treating the general subject of the use of reference books. The latter lecture has been printed in the Journal of the United States Artillery for November-December, 1903.

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. All new books are placed together in special cases, where they remain for several months, so that every Cadet may see and handle the accessions.

Engraved portraits and photographs of graduates.—By the acquisition of the set of class albums of the late Professor Kendrick the library now owns a complete set of class albums of graduates since 1857 (with the exception of 1858 and 1860) and a large number of groups and single photographic portraits. During the year the collection of engraved portraits of graduates owned by the association of graduates has been increased by 219, so that now this association owns portraits of 680 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.

Books transferred to the post library.—During the year 163 volumes have been transferred to the post library for enlisted men.

Regimental histories.—Advantage was taken of a special opportunity to enlarge our collection of regimental histories United States Army (especially of the civil war period). We now own 356 volumes of the sort, besides a large collection of the histories of British and other foreign regiments.

Newspapers, 1861-1865.—A set of the New York Times from October, 1860, to October, 1865, has been bought during the year, besides several volumes of illustrated journals issued in this period.

Extra-illustrated books of the civil war and Revolutionary periods.—Several important works of the sort have been bought during the year.

Bibliographies.—Mr. Ostrander has made a practically complete collection of all text-books prescribed for use in the United States Military Academy from 1802 to 1904, which illustrates in a striking way the progress of the Academy during the past century.

Military bibliography.—The bibliography from the Artillery Journal has been assorted on cards by Captain Blakely and later by Mr. Ostrander. We have thus a card index of all military periodicals complete from 1896 to date.

Shelf room.—Considerable additions to our shelf room are required. The most

pressing wants have been supplied. It is hoped that the attic may soon be made thoroughly fireproof and supplied with shelves and lockers to contain books, pamphlets, manuscripts, and the records of the United States Military Academy.

Congressional documents.—We have to thank the Superintendent of Public Documents for many additions to our collection, especially those of early years.

Officers' study.—This has been well used during the year by officers working on their own account and by instructors. Captain Gallup, of the Artillery Corps, is writing the history of the introduction of the Gribauval system into the service, and Lieutenant Wood, of the Third Cavalry, has made an examination of the manuscript records of the Corps of Artillerists and Engineers from 1795 to 1802.

Binding.—The binding of books has been pushed forward as rapidly as the funds available permitted. Nearly all our military pamphlets are now bound and on the shelves. Each pamphlet is bound separately.

Card catalogue.—The card catalogues are kept up to date, and work is constantly in hand for their improvement, especially in the military section. The following paragraph, from the preface of the Catalogue of the Peabody Institute Library, expresses in a few words the ends kept in view here:

"This catalogue is constructed on the idea that the best possible catalogue is that which best makes known to the average reader the entire contents of a library. It is intended to answer the three important questions: Is a given book in the library? Are the works of a given author there? What books, articles, and information does the library contain on a given subject? A perfect catalogue would furnish complete answers to all these questions. Every book whose author is known is entered three times—under its author's name, under its title, and under its subject. Periodicals, bound pamphlets, the publications of the great academies and learned societies (except their scientific divisions), and historical, antiquarian, and other miscellaneous collections are all indexed and the references distributed under their appropriate heads: the number of pages in each article, the volume and the page where it may be found, with the author's name, when known, and, if a periodical, the year in which it was printed, being carefully marked."

Libraries of the departments, United States Military Academy.—During the year the departments of mathematics, chemistry, modern languages, and law have each supplied us with an author catalogue of all their books, written on buff-colored cards. For each author card one subject card was written in the library. These buff cards, representing books owned by the departments and kept in their special rooms, were placed among the white cards of our card catalogue. Similar work has been promised by the other departments of the Academy. When it is completed the library catalogue will represent not only the books on its own shelves, but every book owned by the Government at West Point.

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 404 bound volumes.

Additions to the building and fixtures.—When the attic and the cellar of the library are fitted with stacks there will be sufficient store room to cover our accessions for many years. There is, however, no opportunity to exhibit maps in the present building, and it is very desirable that a map room be added to it. Such a room might connect with the proposed new academic building on the west of the library and form a passageway from that building into the library itself. It should be lighted from the roof alone and furnished with book stacks around the walls and with pull-down maps in front of the book stacks. The large drawers of map cases might occupy the center of the room.

Electric lighting.—Owing to changes in the electric-light connections during the summer of 1903 the lighting of the library rooms has not been quite satisfactory during part of the year. It is expected that the defects will soon be remedied.

Memorial volume.—The manuscript of this volume was completed during the year and was sent to the Government Printing Office on June 29, 1904.

Selection of books for purchase.—The Librarian gratefully acknowledges the aid of the professors and officers of the Academy in selecting books for purchase.

Service.—All members of the library staff have zealously performed their duties during the year, and the service has been improved in several respects.

History of the library United States Military Academy, 1777-1903.—At the request of the Librarian of Congress a history of the library of the Military Academy was written during the past year and sent to him for publication along with other accounts of Government libraries.

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. Henry Partridge, of Windsor, Vt., of manuscripts of Capt. Alden Partridge and the loan of two uniform coats worn by him before 1817; from Maj. Edward A. Duer, the loan of a silhouette of George Washington, cut in 1783; from Hon. F. O. Briggs, the original of the act of Congress of July 5, 1790, authorizing the purchase of West Point; from Hon. Thomas R. Proctor, the original MSS. relating to the manufacture of the iron chain across the Hudson (1777); from Gen. Alex. S. Webb, oil painting of the Gettysburg battlefield; from Mr. C. F. Gunther, of Chicago, Ill., permission to copy his portrait of André, by Copley, which was photographed and enlarged by the Military Information Division; from Mr. G. C. Maynard, New York, the loan of commissions and epaulettes dating from 1812 and 1816, and the gift of the large professional library of the late Maj. Frederick E. Prime, Corps of Engineers, by Miss Cornelia Prime.

The thanks of the library are also due to Dr. J. H. Canfield, librarian of Columbia University, who has on several occasions supplied us with books needed for work at the academy and lacking in our collections, and to Bancel La Farge, of New York, for two of his paintings which were exhibited in the library during the summer of 1903.

Respectfully submitted.

EDWARD S. HOLDEN.

The ADJUTANT, U. S. MILITARY ACADEMY.

List of gifts to the library to July 1, 1904.

| Name of donor. | Books. | Pam- phlets. | Charts. |
|--|--------|-----------------|---------|
| Adjutant-General United States Army | 8 | 4 | |
| Adjutant-general State of Connecticut | 1 | | |
| Adjutant-general State of Iowa | 2 | | |
| Adjutant-general State of New Jersey | 1 | | |
| Adjutant-general State of Kentucky | 1 | | |
| Adjutant-general State of Louisiana | 1 | | |
| Adjutant-general State of Massachusetts | 1 | | |
| Adjutant-general State of Minnesota | 1 | | |
| Adjutant-general State of Nebraska | 1 | | |
| Adjutant-general State of Nevada | | 4 | |
| Adjutant-general State of Oregon | 2 | | |
| Adjutant-general State of Wisconsin | | 1 | |
| Aldershot Military Society, Aldershot, England | 1 | | |
| Alexander, Gen. E. P. | | | 2 |
| Army and Navy Club, Washington, D. C. | 1 | | |
| Astronomical Society of Canada | 1 | | |
| Bailey, Prof. W. W. | | 2 | |
| Baird, Mr., of Philadelphia (1 portrait) | | | |
| Banks, David, New York | 5 | | |
| Barbour, Prof. E. H., State geologist | 1 | | |
| Bellinger, Maj. J. B., U. S. Army (3 maps, 1 cap pouch, 3 menu cards W. P. A. M.) | 37 | 1 | |
| Bell, Howard W. | 1 | | |
| Burritt, Charles H. | 2 | | |
| Bliss, George N. | | 1 | |
| Bigelow, Poultney | 1 | | |
| Bissell, C. R. | 1 | | |
| Blair, C. H. | | 1 | |
| Briggs, Frank O. | | 1 | |
| Britton, Col. Edward E. | 1 | | |
| Bureau of Navigation | 1 | | |
| Bureau of Foreign Commerce | 4 | | |
| Carson, Hampton L. | 2 | | |
| Century Association, New York | 1 | | |
| Charity Organization Society of New York City | 2 | | |
| Chickering & Sons, Boston, Mass. | 1 | | |
| Chief of Engineers United States Army | 3 | | 20 |
| Chief of Ordnance United States Army | 1 | 36 | |
| Church, Col. W. C., New York | 241 | | |
| Civil Service Commission (United States) | 1 | | |
| Columbia, United States of, consul-general, New York | | 3 | |
| Columbia University, New York | 1 | | |
| Colt Fire Arms Manufacturing Company | 1 | | |
| Commandant Engineer School of Application, Washington, D. C. | | 2 | |
| Commissioner of Education (United States) | 6 | 1 | |
| Commissioner of Labor (United States) | 1 | | |
| Commissioner of Navigation (United States) | 2 | | |
| Commissioner of Pensions | 1 | | |

List of gifts to the library to July 1, 1904—Continued.

| Name of donor. | Books. | Pamphlets. | Charts. |
|--|--------|------------|---------|
| Commissioner of State of New York | 2 | | |
| Comptroller of the city of New York | 1 | | |
| Comptroller of the Treasury | 1 | | |
| Connecticut Academy of Arts and Sciences | 2 | | |
| Cushing, Capt. J. S., Norwood, Mass. | 1 | | |
| Davis, Col. Britton | 1 | | |
| Davis & Harvey | 1 | | |
| Department of Insular Affairs (United States) | 6 | | |
| Department of Commerce and Labor (United States) | 9 | | |
| Department of State (United States) | 6 | | |
| Department of modern languages, United States Military Academy | 6 | | |
| Director of Lick Observatory | 1 | | |
| Director of the United States Census Office | 1 | | |
| Director of the United States Geological Survey | 16 | | |
| Director of the United States Life-Saving Service | 2 | | |
| Director Nautical Almanac | 2 | | |
| Empire State Sons of the American Revolution | 2 | | |
| Ex-cadet: Chicago, Ill. (39 photos of West Point) | | | |
| Folsom, A. A., Brookline, Mass. | 2 | 1 | |
| Freeman, John R. | 1 | | |
| Grand Army of the Republic: Invitation committee Thirty-seventh National Encampment (1 invitation) | | | |
| Gettysburg National Park Commission | 1 | | |
| Gibson, Capt. W. W. (3 blueprints) | | | |
| Gibson, H. G., Washington, D. C. (magazine, Open Court) | | | |
| Goodsell, L. F. | 1 | | |
| Greene, Gen. F. V. (25 views of Manila) | | | |
| Hall, Dr. G. E. | 1 | | |
| Hamilton, Capt. A. | | 1 | |
| Harper Brothers, New York | 1 | | |
| Hart, Reginald L., Wayne, Pa. (4 photographs) | | | |
| Harvard University | | | 1 |
| Headquarters United States Military Academy | 14 | | |
| Hobbs, Maj. F. E., U. S. Army | 1 | | |
| Hodges, Lieut. C. B. (1 photograph) | 1 | | |
| Hepburn, A. P. | 1 | | |
| Holden, Dr. E. S. (1 photograph) | 21 | 1 | |
| Humphrey, Capt. C. B., U. S. Army (7 views of Panama) | 3 | | |
| Hydrographic Office (United States Navy Department) | 2 | | 2 |
| Interstate Commerce Commission | 2 | | |
| Institution of Civil Engineers, London | 3 | | |
| Jewish Publication Society | 1 | | |
| Jones, Capt. S. G., U. S. Army (1 map, 18 photographs) | 1 | 3 | |
| Kahler, Dr. Charles O. | 1 | | |
| Kemble, Gouverneur (1 portrait, 1 view, and many MSS.) | 1 | | |
| King, Gen. Charles, U. S. Army (retired) | 1 | | |
| Koehler, Lieut. H. J., U. S. Army | 1 | | |
| Larned, Col. C. W., U. S. Army (17 photographs) | 5 | | |
| Lemcke & Buechner, New York | | 1 | |
| Library of Congress | 4 | | |
| Lillie (D. C.), (manuscript) | | | |
| Loyal Legion of the United States, Military Order, California Commandery (General Orders, etc.) | | | |
| Ludlow, Maj. H. H. | | 2 | |
| McCook, D. Henry C. | 1 | | |
| Manson, Mars ten, San Francisco, Cal | 1 | | |
| Magoon, Hon. Charles | 3 | 3 | |
| Massachusetts, Secretary of the Commonwealth of | 1 | | |
| Miller, Peyton F. (1 letter) | | | |
| Military Information Division, War Department (5 maps) | 3 | | |
| Mitchell, Capt. G. E. (1 newspaper) | | | |
| Navy Department (United States) | 14 | | |
| Newcomer, Capt. H. C. (2 maps) | | | |
| New Orleans Picayune | | 1 | |
| New York State historian | 10 | | |
| New York State librarian | 1 | | |
| Niles-Bement-Pond Co., New York | 1 | | |
| National Commandery of the Military Order of Foreign Wars (insignia of the order, with rosette) | | | |
| Peck, Dr. George B. | 1 | | |
| Pope, Capt. F. H. | | 3 | |
| President National Geographic Society | | 1 | |
| Partridge, H. V. (2 newspapers and MSS.) | | | |
| Peaslee (Edward H.), New York (21 United States Military Academy class albums) | | | |
| Prime, Miss Cornelia (many maps and pamphlets) | 464 | | |
| Proctor, Thomas R., Utica, N. Y. (MSS. relating to building of chain across the Hudson) | | | |
| Quartermaster-General United States Army (large collection of military buttons) | 1 | | |
| Quartermaster-general, State of Wisconsin | | 1 | |

List of gifts to the library to July 1, 1904—Continued.

| Name of donor. | Books. | Pam- phlets. | Charts. |
|--|--------|-----------------|---------|
| Quinby, Wm. P., Gettysburg, Pa..... | 1 | | |
| Reed, Hugh T..... | 1 | | |
| Remington Arms Company..... | | 1 | |
| Revell (Fleming H.) Company, New York..... | 1 | | |
| Rhode Island Soldiers and Sailors' Historical Society..... | 7 | | |
| Richards, L. S..... | 1 | | |
| Rivers, Capt. W. C., U. S. Army..... | | 4 | |
| Roe, William J., (1 class album, 1867)..... | 5 | | |
| Rogers, Mrs. Fairman..... | 1 | | |
| Royal Engineers' Institution, Chatham, England..... | 1 | | |
| Royal Military Academy, Woolwich, England..... | 3 | | |
| Royal Society of Canada..... | 2 | | |
| Royal Society of London..... | 1 | | |
| Runcie, Maj. J. E..... | 1 | | |
| St. Gaudens, Augustus (3 photographs)..... | | | |
| Sellers, E. J., Philadelphia, Pa..... | 1 | | |
| Speed, Capt. Thomas..... | 1 | | |
| Smithsonian Institution..... | 11 | | |
| Society of Colonial Wars, Washington, D. C..... | | 1 | |
| Society of the Army of the Cumberland..... | 1 | | |
| Society of the Army of the Philippines (insignia and button)..... | | | |
| Society of the Army of Santiago de Cuba..... | | 1 | |
| State comptroller, New York..... | 1 | | |
| State historian..... | 2 | | |
| Stevenson, R. H., Boston..... | 1 | | |
| Stevens, Col. Daniel, Bristol, R. I. (collection of army buttons)..... | | | |
| Stoeckel, Carl..... | 1 | | |
| Superintendent of Naval Records..... | 2 | | |
| Superintendent United States Coast and Geodetic Survey (1 map)..... | | 7 | |
| Surgeon-General's office, United States Army..... | 2 | | |
| Superintendent of public documents..... | 349 | | |
| Swift, Maj. Eben, U. S. Army (proceedings of a court-martial)..... | | | |
| Sykes, Macre..... | 1 | | |
| Thirteenth Madras Infantry..... | 2 | | |
| Tillman, Miss Katherine..... | 1 | | |
| Tillman, Miss..... | 1 | | |
| Tillman, Col. S. E., U. S. Army..... | 1 | | |
| Treasury Department (United States)..... | 7 | | |
| Tripp, William..... | 1 | | |
| Union Club, New York..... | 1 | | |
| United States Coast and Geodetic Survey..... | 2 | | |
| United States Geological Survey (12 atlases)..... | 8 | | |
| United States Naval Observatory..... | 2 | | |
| University of Colorado..... | | 1 | |
| University of Rochester (N. Y.)..... | 1 | | |
| University of the State of New York..... | 2 | 2 | |
| Van Dusen, Dr. James W..... | 1 | | |
| Vick, James, Sons..... | | 1 | |
| Vincent, Gen. Thomas M..... | 1 | | |
| Walker, J. R. (1 old print)..... | | | |
| Walker, Benjamin A. (pen and ink drawing)..... | | | |
| Walsh, Rev. William, Newburgh, N. Y..... | 1 | | |
| War Department (United States)..... | 4 | | |
| War Department library..... | 25 | | |
| Webb, Gen. A. S. (oil painting)..... | | | |
| Westcott, Maj. S. T. (1 map)..... | | | |
| Whipple, Capt. R. A..... | 1 | | |
| Wood, H. C., Washington, D. C. (newspaper clippings)..... | 1 | | |
| Wright, Hon. J. M., Washington, D. C. (1 photograph)..... | | | |

APPENDIX II.
 FOOTBALL SQUAD, END SEASON 1903.
 FIRST CLASS.

| Order of general merit, June, 1903, with name. | | Engineering. | | | | Law. | | | | History. | | | | Ordnance and gunnery. | | | |
|--|-----|--------------|------|------|-------|-------|------|------|-------|----------|------|------|-------|-----------------------|------|------|-------|
| | | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. |
| 17 | B't | 27 | 27 | 26 | 49 | 13 | 22 | 17 | 24 | 81 | 83 | 78 | 67 | 25 | 31 | 37 | 40 |
| 35 | B'n | 41 | 33 | 30 | 23 | 56 | 63 | 63 | 60 | 122 | 123 | 121 | 117 | 97 | 76 | 64 | 61 |
| 11 | C'r | 22 | 18 | 23 | 21 | 7 | 9 | 11 | 13 | 6 | 7 | 13 | 18 | 21 | 28 | 19 | 15 |
| 50 | C'p | 43 | 29 | 29 | 36 | 72 | 67 | 59 | 45 | 51 | 42 | 31 | 47 | 34 | 36 | 34 | 32 |
| 83 | F'h | 118 | 78 | 78 | 98 | 76 | 75 | 58 | 52 | 25 | 36 | 52 | 40 | 40 | 71 | 69 | 70 |
| 79 | H't | 93 | 110 | 108 | 87 | 118 | 114 | 107 | 99 | 108 | 101 | 80 | 72 | 72 | 86 | 88 | 81 |
| 70 | J'd | 59 | 63 | 58 | 105 | 32 | 23 | 20 | 16 | 13 | 8 | 5 | 9 | 30 | 33 | 31 | 30 |
| 90 | M'w | 79 | 73 | 72 | 64 | 61 | 52 | 73 | 82 | 21 | 29 | 29 | 26 | 68 | 38 | 35 | 36 |
| 36 | R'y | 111 | 117 | 114 | 106 | 37 | 50 | 67 | 68 | 34 | 33 | 50 | 79 | 63 | 97 | 97 | 107 |
| 57 | S'l | 53 | 53 | 47 | 40 | 62 | 73 | 55 | 71 | 39 | 52 | 46 | 33 | 103 | 95 | 62 | 67 |
| 57 | T'n | 62 | 66 | 75 | 85 | 47 | 53 | 57 | 77 | 65 | 65 | 75 | 49 | 48 | 62 | 52 | 47 |

SECOND CLASS.

| Order of general merit, June, 1903, with name. | | Philosophy. | | | | Chemistry. | | | | Drawing. | | | | Drill regulations. | | | |
|--|-----|-------------|------|------|-------|------------|------|------|-------|----------|------|------|-------|--------------------|------|------|-------|
| | | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. |
| 30 | Doe | 1 | 1 | 2 | 3 | 4 | 6 | 10 | 8 | 59 | 50 | 50 | 51 | 10 | 5 | 8 | 2 |
| 33 | G'r | 32 | 38 | 37 | 46 | 24 | 27 | 29 | 33 | 57 | 37 | 40 | 40 | 30 | 6 | 30 | 31 |
| 3 | G's | 2 | 2 | 5 | 5 | 14 | 21 | 19 | 14 | 54 | 36 | 44 | 47 | 11 | 1 | 4 | 9 |
| 40 | H'd | 51 | 36 | 39 | 48 | 64 | 50 | 50 | 56 | 62 | 51 | 53 | 53 | 35 | 38 | 36 | 30 |
| 25 | S'e | 19 | 28 | 34 | 35 | 12 | 10 | 8 | 17 | 14 | 11 | 12 | 12 | 90 | 45 | 97 | 83 |
| 93 | T'n | 55 | 66 | 64 | 58 | 56 | 62 | 64 | 64 | 104 | 86 | 89 | 89 | 47 | 48 | 55 | 48 |
| 57 | W'h | 64 | 62 | 80 | 84 | 39 | 43 | 47 | 65 | 22 | 12 | 13 | 13 | 113 | 112 | 101 | 113 |

THIRD CLASS.

| Order of general merit June, 1903, with name. | | Mathematics. | | | | Drawing. | | | | French. | | | |
|---|-----|--------------|------|------|-------|----------|------|------|-------|---------|------|------|-------|
| | | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. |
| 29 | G'e | 36 | 36 | 29 | 27 | 33 | 40 | 41 | 36 | 42 | 56 | 56 | 57 |
| 13 | M'r | 16 | 15 | 12 | 15 | 61 | 53 | 49 | 54 | 12 | 7 | 8 | 9 |
| 15 | S'e | 72 | 13 | 14 | 10 | 49 | 64 | 53 | 48 | 17 | 10 | 11 | 12 |
| 15 | T'y | 14 | 11 | 6 | 11 | 50 | 69 | 71 | 80 | 47 | 49 | 47 | 37 |

FOURTH CLASS.

| Entered 1903. | | Mathematics. | | | | English. | | | | Drill regulations. | | | |
|---------------|-----|--------------|------|------|-------|----------|------|------|-------|--------------------|------|------|-------|
| | | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. | Sept. | Oct. | Nov. | Term. |
| C'y | 124 | 127 | 117 | 118 | 156 | 129 | 63 | 83 | 49 | 85 | 84 | 82 | |
| D's | 148 | 152 | 142 | 137 | 66 | 89 | 128 | 118 | 150 | 138 | 127 | 138 | |
| H'l | 19 | 23 | 33 | 30 | 104 | 65 | 45 | 62 | 60 | 19 | 25 | 24 | |
| J's | 39 | 55 | 62 | 64 | 77 | 63 | 70 | 65 | 38 | 59 | 52 | 48 | |
| P'e | 138 | 129 | 132 | 116 | 139 | 147 | 138 | 140 | 96 | 116 | 126 | 123 | |
| R'l | 63 | 91 | 98 | 104 | 63 | 121 | 106 | 121 | 54 | 111 | 124 | 122 | |
| W's | 6 | 7 | 9 | 4 | 6 | 10 | 9 | 137 | 92 | 65 | 60 | 60 | |

APPENDIX I.

REPORT OF QUARTERMASTER AND DISBURSING OFFICER.

OFFICE QUARTERMASTER AND DISBURSING OFFICER,
West Point, N. Y., August 1, 1904.

SIR: In compliance with instructions from your office, per circular No. 57, dated July 11, 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 of the Gas Works, United States Military Academy, for the year ending June 30, 1904.

QUARTERMASTER'S DEPARTMENT, UNITED STATES MILITARY ACADEMY.

The duties under this head are defined in paragraph 14, Regulations United States Military Academy, 1903.

The contracts entered into during the year and prior years 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 | John H. Parker Co..... | Feb. 10, 1902 | Construction officers' mess and quarters. |
| 2 | West Side Foundry Co | Dec. 4, 1902 | Iron stairs, etc., cadet mess hall. |
| 3 | Dickson & Eddy..... | May 7, 1903 | Anthracite coal. |
| 4 | Geo. D. Harris & Co..... | do do..... | Gas coal. |
| 5 | Union Petroleum Co..... | May 9, 1903 | Gas oil. |
| 6 | H. W. Otis..... | July 6, 1903 | Construction of sea wall. |
| 7 | Cram, Goodhue & Ferguson. | Aug. 12, 1903 | Developing accepted competitive design for improvement of West Point, N. Y. |
| 8 | New York Central and Hudson River R. R. Co. | Aug. 27, 1903 | Grading target range. |
| 9 | Henry C. Meyer, jr..... | Oct. 7, 1903 | Design and supervise construction and install heating and lighting plant. |
| 10 | Nicholson & Galloway | Nov. 5, 1903 | Copper work, etc., Memorial Hall. |
| 11 | Otis Elevator Co..... | Dec. 18, 1903 | Hydraulic freight elevator in cadet mess. |
| 12 | Merritt & Co..... | Dec. 24, 1903 | Dish lockers for cadet mess. |
| 13 | Cyrus Borgner..... | May 20, 1904 | Floor benches, gas house. |

All of the above contracts, with the exception of those numbered 7, 9, and 13, have been completed.

The following repairs and improvements have been made:

A new extension to front porch of quarters No. 17.

Brick addition to Superintendent's quarters.

Quarters No. 46 reconstructed; quarters Nos. 11, 19, 23, 27, and 31 overhauled and painted (interior).

New stairway placed in quarters No. 35 (interior).

Quarters Nos. 43, 47, 51, 53, 55, 28, 30, 32, 34, 36, 38, and 42 overhauled and painted (interior).

Parlor, study, and halls papered of quarters Nos. 43, 50, and 52.

Quarters Nos. 1, F. 4, 10, and 6 overhauled and painted (interior).

Three new bathrooms and one linen room built in soldiers' hospital.

New lavatory and bathroom in engineer barracks.

New roof on baker shop.

Hotel overhauled, repaired, and painted.

- Painting woodwork throughout cavalry barracks.
 Painting certain walls and woodwork of rooms in engineer barracks.
 New squad room for 4 men built in quartermaster's stable.
 Rooms of cadet barracks painted and repaired.
 Granolithic pavement placed in area of cadet barracks.
 New ice house built of 1,400 tons capacity.
 Gutters and leaders placed on quarters Nos. 47, 49, and 51.
 Three coal and wood sheds in rear of hotel replaced by new ones.
 New shingle roof placed on main part of hotel.
 New granolithic pavement placed in front of quarters Nos. 22, 24, 26, 23, 30, 32, 34, 36, 38, and 49.
 Sixteen ice chests built.
 Quarters No. 22 overhauled and painted (interior).
 Interior walls and woodwork of soldiers' childrens' schoolhouse painted.
 A new fence built at the south dock.
 Lamp-posts and iron fences painted throughout the post.
 Interior walls, ceilings, and woodwork of restaurant painted.
 Five thousand four hundred order cards, comprising various jobs, completed.
 The interior of dynamo and power house repaired and painted.
 Two bedrooms built in attic of quarters No. 49.
 Wire screens made for windows in soldiers' hospital; also storm windows and doors made for windows and doors in soldiers' hospital.
 All the woodwork, walls, and ceilings painted in quarters occupied by hospital steward at the soldiers' hospital.
 Three sets of quarters in bachelor building calcimined and painted.
 New platform for crematory and crematory repaired by placing new linings and grates in same.
 Addition for office put up at quarters No. 19.
 New parquet floors put in dining room of quarters No. 23, also double doors from dining room into conservatory.
 Walls and woodwork of upper and lower halls, also two wards, painted at the soldiers' hospital.
 The closet seats and closets repaired and varnished in the cadet camp sink.
 The offices and rooms in cadet guardhouse repaired and painted.
 Streets in cadet camp graded and filled in with gravel.
 Platforms for tents refloored and repaired where necessary.
 Sets of shelves placed in closets of gymnasium.
 Granolithic walk laid in front of officers' mess.
 Attic at quarters No. 44½ plastered and painted, also dining room, parlor, bedrooms, and kitchen painted. Two clothes closets built.
 Cinder walk and covered drain from porch to road installed at quarters No. 44½.
 Also window placed in storeroom.
 Fire extinguishers placed in all the public buildings of the post.
 Metal skylights placed in roof of quarters No. 46.
 Front and back porches painted of quarters No. 7.
 Ranges and furnaces in all the officers' quarters, and public buildings of the post kept in repairs during the year.
 Walls, ceilings, and woodwork of rooms in quarters No. 9 painted.
 School rooms in school for officers' children painted.
 Window screens, door screens, storm windows and doors repaired and placed in position throughout the post.
 Office of livery stable painted.
 Storm doors placed in Memorial Hall.
 Sorting tables made for the cadet laundry.
 Interior of quarters No. 61 painted, calcimined, and papered.
 Interior of quarters No. 16 painted, calcimined, and papered.
 Interior of quarters No. 35 painted, calcimined, and papered.
 Interior of quarters No. 14 painted, calcimined, and papered.
 Ten sections of football stands built.
 Old officers' mess, quarters Nos. 4 and 6 combined, changed into two sets of officers' quarters and rooms, with stairway built for draftsmen.
 Kitchen, kitchen pantry, butler's pantry at quarters No. 39 painted.
 Pavilion built at the quartermaster's shops containing the exhibit of the Military Academy at St. Louis, at a cost of about \$1,600 for material and labor.

Ranges in kitchen of cadet mess, also bake ovens, repaired and renewed where necessary.

Boiler placed in cadet laundry.

Floor of central portion of cadet laundry concreted and drain put in.

Addition with tin roof built against south side of cadet laundry for boiler.

New water-closets and concrete floor placed in the basement of cadet laundry.

Water filter installed in cadet laundry.

About 750 jobs of various kinds attended to at the cadet mess, cadet laundry, and cadet store.

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

Statement of receipts and disbursements under the various heads of appropriations during the year ending June 30, 1904, is attached and marked "A."

PUBLIC WORKS UNDER CONSTRUCTION.

The work of construction upon the south wing of the cadet mess hall, under contract with Alexander S. Traub, has been continued and completed and the building fully equipped for service, including electric wiring and fixtures for lighting, improved bake ovens and mixing machinery in the bakery, hydraulic elevator, vegetable peeler, dishwasher with electric motors, metal dish and clothing lockers. Steam heating and plumbing have been completed throughout the mess hall by day labor and the apparatus made complete and perfect in details for efficient service.

Coal vaults, with top paving, for storage of supply for steam boilers and bake oven have been constructed in the rear of the building by day labor, and excavation is being made and a retaining wall constructed for a service road upon the south side of the mess hall.

New south wing cadet hospital.—Work having been suspended by the contractor, James O'Toole, jr., the building has been satisfactorily completed by the bondsmen, the Fidelity and Deposit Company of Maryland. The contract for electrical conduits, marble and tile work, steam heating and plumbing in new south wing, and asphalt paving in area of hospital, have also been completed.

The terrace platform at Memorial Hall has been reconstructed, waterproofed, repaved and made thoroughly storm proof, the work being mainly executed by day labor.

Work upon the road from south dock to south end of post has been continued; the concrete retaining wall at northern extremity and masonry retaining walls at various points in its length have been completed; also excavation and filling to the level of the roadbed. An appropriation of \$30,000 has been granted for the laying of sewer and water mains, macadamizing of road surface, completing construction of breast-high walls, laying granolithic sidewalks, vitrified brick gutters, and catch-basins necessary to make the road fully complete for use.

The southeast portion of the cavalry plain has been graded, top-soiled, and sown with grass seed and certain portions sodded. This is a part of the general plan of improvement and was completed in accordance with instructions from the Superintendent.

The present site of the cadet camp was graded, and in some places heavily filled, several years ago. The natural settlement that follows such extensive work has occurred and a small amount of regrading should be done in the cadet camp in order to properly carry off surface water and drain the camp in wet weather. In addition to this a certain amount of guttering and subsoil draining must be done, and the company streets and general parade should be surfaced with broken stone. The unsightly posts and rails which are used to hold up the tents should be replaced with iron-pipe posts and rails and fixed in such a way that they can be removed after the camp is broken up, and the ground left clear. Such an arrangement would add greatly to the appearance of that corner of the plain and it would in the end entail less labor in keeping the tent supports in good condition.

There are several buildings on the post built of common brick, the exteriors of which should be painted in order to make the buildings more sightly. These comprise three sets of officers' quarters, artillery barracks, post exchange, and brick additions that have been made to quarters along the north line.

The roads throughout the post are in a very poor condition, and as soon as the work of improvement has progressed far enough they should be rebuilt thoroughly and properly graded, drained, and macadamized. This spring repairs were made of a temporary character, with the expectation that they would last a couple of years, by which time it should be possible to make permanent improvements in this respect.

In this connection a road roller of about 6 tons weight should be obtained; particularly for use along the narrow roads and the roads back of the post proper, where rolling should be done, but on account of the steep grade and character of retaining walls a heavier roller could not be used.

With available funds, the road from library past officers' mess and Memorial Hall and thence in rear of cadet camp as far as the hotel grounds has been macadamized and brick gutters laid as far as the cadet shower-bath building. From that point cobblestone gutters have been partially laid, and the work of putting in the balance of the gutters is in progress.

The pointing up of the exterior joints of the stone work in the library was never completed, owing to lack of funds. But a small amount remains to be done, and it should be finished, not only to improve the appearance of the building but to preserve the stone work.

The skylight in the library building has never been water-tight, and is a source of constant trouble at every rain storm and equally constant complaint from the librarian. The trouble is caused by defective method of setting the glass. To reset the glass and provide against leakage will cost about \$2,000.

The interior walls and woodwork of portions of the cadet and soldiers' hospitals will need repairs and painting the coming year, and proper estimate should be submitted to enable the work to be done next summer.

The sewer outlet at the north end of the post has given trouble for a number of years, and whenever there is an unusually high tide or heavy storm the sewer appears to become blocked and to overflow along the south end of the target range. I understand that this sewer was laid with vitrified pipe where it passes under the railroad tracks. There has undoubtedly been settlement, and it is quite probable that the sewer has been broken or it has settled and the outlet has become clogged up. This should be relaid next year, as the continued recurrence of this overflow is very sure to result in unhealthy and unsanitary conditions at that end of the post. The terminal of the sewer should be iron pipe where it runs under the railroad tracks and out into the river.

The interior walls, ceiling, woodwork, and ironwork of the Academy building are badly in need of repairs and paint. Nothing of this kind has been done on the building since it was completed in 1895. Although it is contemplated to make certain changes in this building in connection with the general scheme of improvement, it is believed that necessary interior repairs should not be postponed, but should be made next year. The work can be done during the period that academic duties are suspended.

The system of ventilating Memorial Hall depends upon supply and exhaust fans operated by steam engines, the steam being furnished by boilers in the basement of the building. As the building is required to be ventilated during the summer this necessitates the use of one of the steam boilers. As the new heating and lighting plant will supply ample current for all purposes, I believe it would be better to replace the engines driving the fans by suitable electric motors, and thus obviate the necessity of running a steam boiler in the building during hot weather.

Under date of March 9, 1904, I was informed by the Superintendent that he had, subject to the approval of the Secretary of War and under general authority previously given him, designated me as the officer in charge of construction in connection with the new buildings and other improvements, provision for which is made by act of Congress approved July 28, 1902. Under date of April 20, 1904, I was notified by the Superintendent that his action had been approved by the Secretary of War in letter from the War Department dated April 16, 1904.

In accordance with instructions contained in these letters and verbal instructions from the Superintendent, I have examined and made reports and recommendations upon such plans and propositions submitted by the architects as have been referred to me for action.

The plans and specifications for the new riding hall, cavalry barracks, cavalry stables, artillery barracks, artillery stables, and artillery gun shed have been completed and received the approval of the Secretary of War.

Plans and specifications for cadet headquarters and cadet store building have been completed by the architects and submitted, but have not yet been approved.

Work upon the plans and specifications for the new cadet barracks, headquarters building, officers' quarters, post exchange and guard house, and fire engine house is now in progress, and it is expected that these plans and specifications will be completed during the coming year.

The plans and specifications for the boilers, engine, and electrical machinery

for the new heating and lighting plant are in course of preparation by the consulting engineer, and it is expected that these will be completed in time for approval and advertisement this summer. Working plans for the building can not be completed until contracts are awarded for the boilers and machinery, inasmuch as the type of boiler selected will influence the location and dimensions of the members of the steel frame construction which it is proposed to use in this building. It is expected that the work of excavation for the building can be commenced some time this coming fall.

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 | E. A. Matthews | Feb. 24, 1903 | Construction of road. |
| 2 | Dickson & Eddy | June 11, 1903 | Anthracite coal. |
| 3 | E. A. Matthews | June 26, 1903 | Construction of road. |
| 4 | William Lewis | July 18, 1903 | Hard wood. |
| 5 | C. Daly | do | Soft pine wood. |
| 6 | O'Brien & Kellogg | Aug. 29, 1903 | Forage and straw. |
| 7 | W. H. Schoonmaker | do | Oats. |
| 8 | Chas. L. Rickerson | Aug. 31, 1903 | Bran. |
| 9 | E. A. Matthews | Nov. 21, 1903 | Construction of road. |

All of the above contracts have been completed.

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

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

New stable, also new blacksmith shop, for the detachment field artillery.

New floors and girders placed in carpenter shop and machinery overhauled.

Frame shed for horses afflicted with glanders and animals under suspicion.

Road from south dock to south end of the post.

Work upon a portion of this road was done under allotments made by the Quartermaster-General of the Army. Contracts were made for excavating, trenching, and construction of breast-high wall. Under these contracts 7,633 cubic yards of rock and 560 linear feet of pipe trench were excavated. This exhausted the funds available under the allotments and nothing was done to the breast-high wall.

With the money made available for the completion of this road by the Military Academy appropriation bill of the current year, it is expected to finish the work and have the road ready for use before the end of October. This road will give direct access from the dock and railroad station to the south end of the post, and will be not only a convenience to the residents of that portion of the reservation, but will also facilitate delivery of materials for new construction and supplies that must be delivered at that end of the post. All that remains to be done now is to lay sewer and water pipe, macadamize the roadbed, complete breast-high retaining wall and lay granolithic sidewalk and gutters.

TRANSPORTATION.

In addition to the daily demands upon this office for draft purposes and policing of the post, transportation has been furnished for the hauling of the following: Coal, 10,000 tons; freight received on bills of lading, 610 tons; freight shipped on bills of lading, 96 tons; building materials, 400 tons; forage, 1,700 tons; supplies, cadet mess, 1,300 tons; supplies, post exchange, 350 tons; wood, 400 loads; sand, 1,200 cubic yards; tar, 1,200 barrels.

The quartermaster has available to meet these demands 86 horses and 17 mules, and for the number of animals in the stable a sufficient number of wagons, carts, drays, etc. Notwithstanding these facilities, the demand for transportation is constantly increasing and it is now so great that it requires all available means to meet current demands and necessitates the hire of civilian teams for any exten-

sive repairs or construction, as, for example, building the south road and repair of existing roads. The response to the demand for transportation is not as prompt and complete as it should be.

The present stables are filled with the animals on hand. The service of transportation would be greatly improved, and the work of this office facilitated and made more satisfactory, if the post could be supplied with two electric trucks of about 3 tons capacity each. These trucks will do the work of eight or nine teams, and would do it at one-half the cost per ton per mile. The charging of the storage batteries could be done by the small power plant now in operation at very little cost. There are no grades on the roads here that can not be readily overcome by electric trucks now on the market and extensively used in the large cities. While the first cost of these trucks would be much greater than teams, the economy of operation is such that they would more than make up the difference in the course of two or three years.

POST CEMETERY.

This cemetery has been in use since 1816. The total number of interments recorded up to June 30 of this year is 1,251. Thirty-two interments were made from July 1, 1903, to June 30, 1904.

The care and maintenance of this cemetery is provided for in the appropriations for the United States Military Academy.

A receiving vault is very much needed, but as it is contemplated to remove the present cadet chapel and re-erect it at the cemetery as a mortuary chapel, the construction of such a vault can be postponed until it can be built in connection with the transfer of the present chapel.

The present keeper of the cemetery is a very competent and valuable man, and the compensation he now receives is entirely inadequate for the work he is called upon to do and the responsibilities which are necessarily put upon him. He not only has charge of the interments, but has also to keep in proper condition the grounds and everything pertaining thereto. His pay should be increased to \$1,200 per year, as his knowledge and services are fully worth that amount.

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

The Military Academy appropriation bill approved April 28, 1904, added 25 men to the detachment, making its total strength now 175. This detachment furnishes the men detailed as clerks, janitors, mechanics, teamsters, engineers, firemen, and laborers. While it may appear that this number of men should be sufficient to furnish details of the character mentioned above, it is nevertheless a fact that after meeting the calls for clerks, janitors, mechanics, teamsters, etc., but very few men are left for general labor, such as making repairs to roads, etc., handling freight, and other work of a general laboring character. The absence of a sufficient number of men for general work necessitates the employment of civilians. It is believed that this detachment should be further increased to 200 men, so as to properly meet the constantly growing demands made upon it.

FUEL.

The consumption of coal has been increasing every year, and, notwithstanding all efforts to economize, the appropriation made for the purchase of coal is inadequate, so much so that for some years past it has been necessary to obtain a deficiency appropriation. The consumption of coal at the cadet mess, cadet laundry, and quartermaster's shops has increased very much, and necessarily on account of the increase in the size of the Corps of Cadets and the growth of the post. The appropriation that has been annually made for some time past of \$4,000 for cadet mess, cadet laundry, and quartermaster's shops is entirely inadequate and should be at least \$12,000. Last winter was an unusually severe one, and the demand for coal was greater than in any previous year. Should another such winter occur the situation will be even worse.

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 year 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.

It is customary to receive bids for the yearly output of tar. The recorded price for it during the past fiscal year has been 4½ cents per gallon.

During the fiscal year 24,007,600 cubic feet of gas were manufactured, which is an increase of 361,000 cubic feet over the preceding fiscal year; 5,434,400 pounds of gas coal and 5,148 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 plant during the past fiscal year. The plant has three holders, with a capacity when full of 58,000, 20,000, and 10,000 cubic feet, respectively, making a total capacity of 88,000 cubic feet. Of this amount, however, only about 83,000 can be used, since when the holders are nearly empty there is a consequent diminution in pressure and the balance can not be forced through the mains. The demand during the winter is so great that at times more gas is burned in twenty-four hours than the total capacity of these holders. In order to supply light demanded it is necessary to operate the works day and night to its full capacity. It will be readily seen that any breakdown or accident would seriously interfere with the supply of illuminating gas and that there is no margin to provide against such accident.

Partial relief may be obtained by substituting incandescent lights for the present flat-flame burners in the street lamps. I have calculated that to equip 65 lamps with incandescent lights, such as may be seen in large cities, will result in a saving of about 600,000 cubic feet during the year. This is more than the increase in the consumption in the past year over the previous year and will make that amount available to meet the growing demand. Sixty-five of these incandescent lamps can be put up and leased for about \$600 per year, and I believe it would be advisable to make such an arrangement for two or three years, by which time it is expected the new heating and lighting plant will be in operation. Unless some such relief is obtained immediately, it will be necessary to enlarge the gas plant at a cost of about \$12,000. Besides the economy that will result by using the incandescent lamp for street lighting, there will be a great improvement in the illumination of the principal roads, which is very much needed.

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 1903 and 1904 is given in months in 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 of May 1, 1888.

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

Very respectfully,

J. M. CARSON, Jr.,
Major and Quartermaster, U. S. Army,
Director of Gas Works, United States Military Academy.

The ADJUTANT, UNITED STATES MILITARY ACADEMY.

A.—Abstract of disbursements at the United States Military Academy at West Point, N. Y., during the year ending June 30, 1904.

| 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: | | | | | | |
| 1901-2 | July 1, 1903 | \$243.85 | \$207.89 | \$7,843.02 | | \$8,295.36 |
| 1902 | do | 1,270.58 | 95.95 | 14,133.45 | | 15,499.98 |
| 1903 | do | 5,339.27 | 4,274.56 | 21,709.65 | | 31,353.48 |
| 1903-4 | do | 17.75 | 800.05 | 23,593.61 | | 24,411.41 |
| Buildings and grounds (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 |
| Received since fiscal year: | | | | | | |
| 1904 | do | 92,368.00 | 33,146.00 | 54,157.00 | | 179,671.00 |
| 1904-5 | do | | | 30,800.00 | | 30,800.00 |
| Urgent deficiencies, June 30, 1904 | do | 15,163.02 | 2,500.00 | 3,000.00 | | 20,663.02 |
| Buildings and grounds (no year)— | | | | | | |
| Enlarging the Military Academy | do | | | 191,500.00 | | 191,500.00 |
| Terrace platform, Memorial Hall | do | | | 516.05 | | 516.05 |
| Total | | 114,462.47 | 41,024.45 | 420,556.24 | 4,000.55 | 580,043.71 |
| Dr. | | | | | | |
| Deposited, fiscal year: | | | | | | |
| 1901-2 | June 30, 1904 | 243.85 | 207.89 | 1,787.77 | | 2,239.51 |
| 1902 | do | 1,270.58 | 95.95 | | | 1,366.53 |
| 1903 | do | 1,919.83 | 899.61 | 2,163.98 | | 4,983.42 |
| Disbursed, fiscal year: | | | | | | |
| 1901-2 | do | | | 6,055.85 | | 6,055.85 |
| 1902 | do | | | 14,133.45 | | 14,133.45 |
| 1903 | do | 3,479.44 | 3,374.95 | 19,545.67 | | 23,400.06 |
| 1903-4 | do | | 628.60 | 23,543.52 | | 24,172.12 |
| 1904 | do | 84,902.98 | 31,967.16 | 50,261.26 | | 167,131.40 |
| 1904-5 | do | | | 2,564.31 | | 2,564.31 |
| Urgent deficiencies, June 30, 1904 | June 30, 1904 | 13,310.86 | 2,500.00 | 2,957.60 | | 18,768.46 |
| Officers' quarters and mess | do | | | 11,819.78 | | 11,819.78 |
| Enlarging the Military Academy | do | | | 190,743.64 | | 190,743.64 |
| Terrace platform, Memorial Hall | do | | | 5,134.05 | | 5,134.05 |
| Balance on hand, fiscal year: | | | | | | |
| 1903-4 | do | 17.75 | 171.45 | 50.09 | | 239.29 |
| 1904 | do | 7,465.02 | 1,178.84 | 3,895.74 | | 12,539.60 |
| 1904-5 | do | | | 28,235.69 | | 28,235.69 |
| Urgent deficiencies, June 30, 1904 | June 30, 1904 | 1,852.16 | | 42.40 | | 1,894.56 |
| Officers' quarters and mess | do | | | 4,040.61 | | 4,040.61 |
| Enlarging the Military Academy | do | | | 53,198.83 | | 53,198.83 |
| Terrace platform, Memorial Hall | do | | | 382.00 | | 382.00 |
| Memorial Hall | do | | | | 4,000.55 | 4,000.55 |
| Total | | 114,462.47 | 41,024.45 | 420,556.24 | 4,000.55 | 580,043.71 |

J. M. CARSON, Jr.,
Major and Quartermaster, U. S. Army,
Disbursing Officer United States Military Academy.

WEST POINT, N. Y., August 1, 1904.

B.—Statement of funds pertaining to the Quartermaster's Department, United States Army, received and disbursed during the fiscal year ending June 30, 1904.

| | |
|-------------------------------------|------------|
| Balance on hand June 30, 1903 | \$9,133.30 |
| Received since: | |
| Regular supplies | 61,286.80 |
| Incidental expenses | 12,117.68 |
| Cavalry and artillery horses | 4,320.00 |
| Army transportation | 46,132.46 |
| Barracks and quarters | 7,819.84 |
| Sales to officers, etc | 8,133.73 |
| Sales at auction | 726.00 |
| Total to be accounted for | 149,669.81 |
| Disbursed: | |
| Regular supplies | 52,590.97 |
| Incidental expenses | 11,778.64 |
| Cavalry and artillery horses | 4,320.00 |
| Army transportation | 45,377.91 |
| Barracks and quarters | 7,547.98 |
| Hospitals | 2,098.00 |
| Deposited | 14,553.29 |
| Balance on hand June 30, 1904 | 11,403.62 |
| Total | 149,669.81 |

J. M. CARSON, Jr.,

Major and Quartermaster, U. S. Army.

WEST POINT, N. Y., August 1, 1904.

C.—Statement of receipts and expenditures pertaining to the Special Contingent Fund, United States Military Academy, from July 1, 1903, to June 30, 1904.

CR.

| | |
|--|------------|
| 1903. | |
| July 15. Received by transfer as per invoice of funds herewith | \$3,847.46 |
| 1904. | |
| June 30. By amount received: | |
| Rents— | |
| Hotel | \$1,500.00 |
| Post-office | 112.50 |
| Stables | 155.00 |
| Store | 250.00 |
| | 2,017.50 |
| Sales of— | |
| Gas | 6,961.83 |
| Coke | 883.35 |
| Coal tar | 1,624.44 |
| Miscellaneous | 380.46 |
| | 9,850.08 |
| June 30. Total to be accounted for | 15,715.04 |

DR.

| | |
|--|-----------|
| June 30. To amount disbursed as per abstract | 12,240.29 |
| Balance on hand | 3,474.75 |

J. M. CARSON, Jr.,

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

WEST POINT, N. Y., August 1, 1904.

D.—Statement of gas manufactured from July 1, 1902, to June 30, 1904, showing quantity of coal and oil used in manufacture.

| Month. | Gas made. | Gas sent out. | Coal used. | Oil used. |
|--------------------------|--------------|--------------------|----------------|-----------------|
| Fiscal year 1903: | | | | |
| | <i>Feet.</i> | <i>Cubic feet.</i> | <i>Pounds.</i> | <i>Gallons.</i> |
| July | 1,171,100 | 1,177,100 | 252,700 | 155 |
| August | 1,186,200 | 1,201,300 | 259,300 | 155 |
| September | 1,686,600 | 1,673,300 | 382,500 | 316 |
| October | 2,006,100 | 2,039,000 | 456,900 | 465 |
| November | 2,315,000 | 2,321,000 | 536,800 | 600 |
| December | 2,776,000 | 2,776,800 | 649,100 | 640 |
| January | 2,845,600 | 2,861,600 | 642,500 | 558 |
| February | 2,361,800 | 2,352,000 | 518,800 | 520 |
| March | 2,303,000 | 2,322,000 | 500,600 | 385 |
| April | 1,906,000 | 1,888,500 | 427,100 | 300 |
| May | 1,541,900 | 1,546,100 | 338,600 | 310 |
| June | 1,547,300 | 1,563,700 | 335,900 | 300 |
| Twelve months | 23,646,600 | 23,722,400 | 5,300,200 | 4,704 |
| Fiscal year 1904: | | | | |
| July | 1,216,500 | 1,214,700 | 263,700 | 310 |
| August | 1,431,600 | 1,431,000 | 315,400 | 390 |
| September | 1,718,300 | 1,698,900 | 384,600 | 590 |
| October | 2,183,500 | 2,173,500 | 480,900 | 630 |
| November | 2,485,500 | 2,481,700 | 549,700 | 600 |
| December | 2,792,000 | 2,801,800 | 618,700 | 620 |
| January | 2,822,600 | 2,844,700 | 644,200 | 620 |
| February | 2,377,700 | 2,370,500 | 528,200 | 498 |
| March | 2,287,100 | 2,297,100 | 502,000 | 330 |
| April | 1,872,400 | 1,890,300 | 460,600 | 255 |
| May | 1,622,500 | 1,619,400 | 396,800 | 155 |
| June | 1,197,900 | 1,201,800 | 295,600 | 150 |
| Twelve months | 24,007,600 | 24,025,400 | 5,434,400 | 5,148 |
| 1903 | 23,646,600 | 23,722,400 | 5,300,200 | 4,704 |
| Increase | 361,000 | 303,000 | 134,200 | 444 |

Very respectfully,

J. M. CARSON, Jr.,
 Major and Quartermaster, U. S. Army,
 Quartermaster, U. S. Military Academy,
 Post Quartermaster and Director of Gas Works.

APPENDIX K.

REPORT OF THE INSTRUCTOR OF ORDNANCE AND GUNNERY.

WEST POINT, N. Y., *June 30, 1904.*

SIR: In compliance with your instructions 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, 1904.

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 the roads and walks have all been resurfaced.

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.

A very great amount of work was done during the year by the detachment in preparing material for the exhibit of the United States Military Academy at the Louisiana Purchase Exposition, especially for the trophy which forms the central feature of that exhibit. A small planer, transferred here by the Chief of Ordnance, has been installed in the machine shop, which now possesses a very fair equipment of machine tools for performing all the work which it may be called upon to do.

MUSEUM.

The museum continues to be one of the specially interesting features of the post to the thousands of citizens who visit it every year, and all the models, trophies, and valuable articles of historic interest which have been contributed by officers of the Army and persons interested in the Military Academy are kept in proper and attractive condition for observation. There has been no falling off in the number of visitors during the past year, but I believe that, on the contrary, there has been a greater number during this year than that reported for the year ending May 31, 1903.

Several interesting donations have been made during the year, but it has been quite impracticable to make any additions to the articles exhibited on account of the present very crowded state of the museum room. This crowded condition and lack of adequate space has been referred to in two previous reports and becomes more pronounced as time passes. It is hoped that in the enlargement and improvement of the academy plant under recent appropriations this condition will not be lost sight of.

Attention is specially invited to this matter, and I commend it to your most serious consideration.

MODELS.

The models of machines and service cannon, carriages, projectiles, etc., used in cadet instruction in this department have been added to during the year by the continuance of work on a model boring and turning lathe used in the manufacture of large guns. This model is one of the most elaborate of those undertaken to be manufactured in the shop here and will require some time for its completion; it is now in a well-advanced stage. In addition there have been furnished by the

Ordnance Department for use in connection with the theoretical instruction of cadets—

- 6 boards of fuses, sectionalized, with parts.
- 3 United States magazine rifles, caliber .30, model of 1903.
- 1 model of breech mechanism of 6-inch R. F. gun, model of 1900.
- 1 model of breech mechanism of 15-pounder R. F. gun, model of 1902.
- 1 model of 15-pounder barbette carriage, model of 1902.
- 1 model of 6-inch barbette carriage, model of 1900.
- 1 model of 12-inch disappearing carriage, model of 1901.
- 1 model of 3-inch field gun, carriage, limber, and horses, complete.
- 1 model of 3-inch field caisson, limber, horses, implements, and equipments, complete.

And there has been added by purchase from Military Academy funds—

- 1 gas engine, 10 horsepower (actual).

INSTRUCTION.

The instruction in the department of ordnance and gunnery is, I believe, quite satisfactory so far as the present course is laid down, but it has been evident for some time that it would be very desirable to so modify the course as to include more of the elements of mechanical engineering and practical experience with a number of the simpler machines in addition to the study of the principal machine tools now embodied in the course. It is to be hoped that the next few years will see a very considerable increase in the amount of instruction in this direction, both theoretical and practical, for the knowledge of such subjects has come to be of primary importance to a very large majority of the graduates of the academy. This new matter would probably be best taken up in the last term of the first-class year, and no additional time would be required for the department for the proposed modification of the course, but there would be simply an elimination of matter which seems to me to be less important, which the cadet can absorb during his stay at the academy or which he can acquire easily by study thereafter, in case of necessity, without further theoretical instruction; and there would be substituted for the matter omitted from the present course such subjects as will give the cadet applications of his previous studies which will tend to keep alive in his mind the theories relating to subjects which are themselves very much alive, and would introduce instruction which at this day is very important to every young officer.

It is impracticable at this time to state in a comprehensive way what matter can or should be wisely introduced. Modifications and substitutions must be made from time to time until a satisfactory course of study has been worked out. As an indication of the general scope of the matter to be introduced, the following headings may, however, be mentioned:

An extension of the study of machine tools, to include their driving and operation, and the study of power generation and transmission, with practical experience in wood and metal working with the simpler machines.

The steam engine, with instruction in the practical application of the laws of thermo-dynamics to its working as a machine, including the making of indicator diagrams and the computation of work done from such diagrams.

The turbine engine, with the theory of its working as compared with the ordinary steam engine, illustrating with the aid of a model engine how the dynamic energy in the jets of steam is communicated to the moving vanes.

The internal combustion or explosion engine, either gasoline or oil; the theory of its working as compared with the ordinary steam engine, with a description and study of a typical engine, showing how the static pressure of the gas produced by the explosion furnishes dynamic energy to the moving parts.

The steam locomotive, with study of its principal working parts.

Other items will, no doubt, suggest themselves from time to time and may be added as seems desirable. There should be no expectation or intention of making these modifications in the course of study a special burden to the cadet, nor should they add to the amount of study or application now required from him, but the matter should be so put that in connection with the practical work it will be especially interesting.

Very respectfully,

F. E. HOBBS,
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Instructor Ordnance and Gunnery.

The ADJUTANT U. S. MILITARY ACADEMY.

