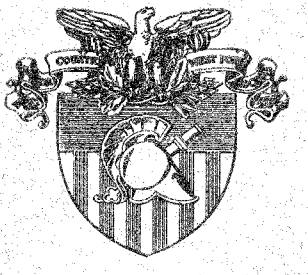
ANNUAL REPORT

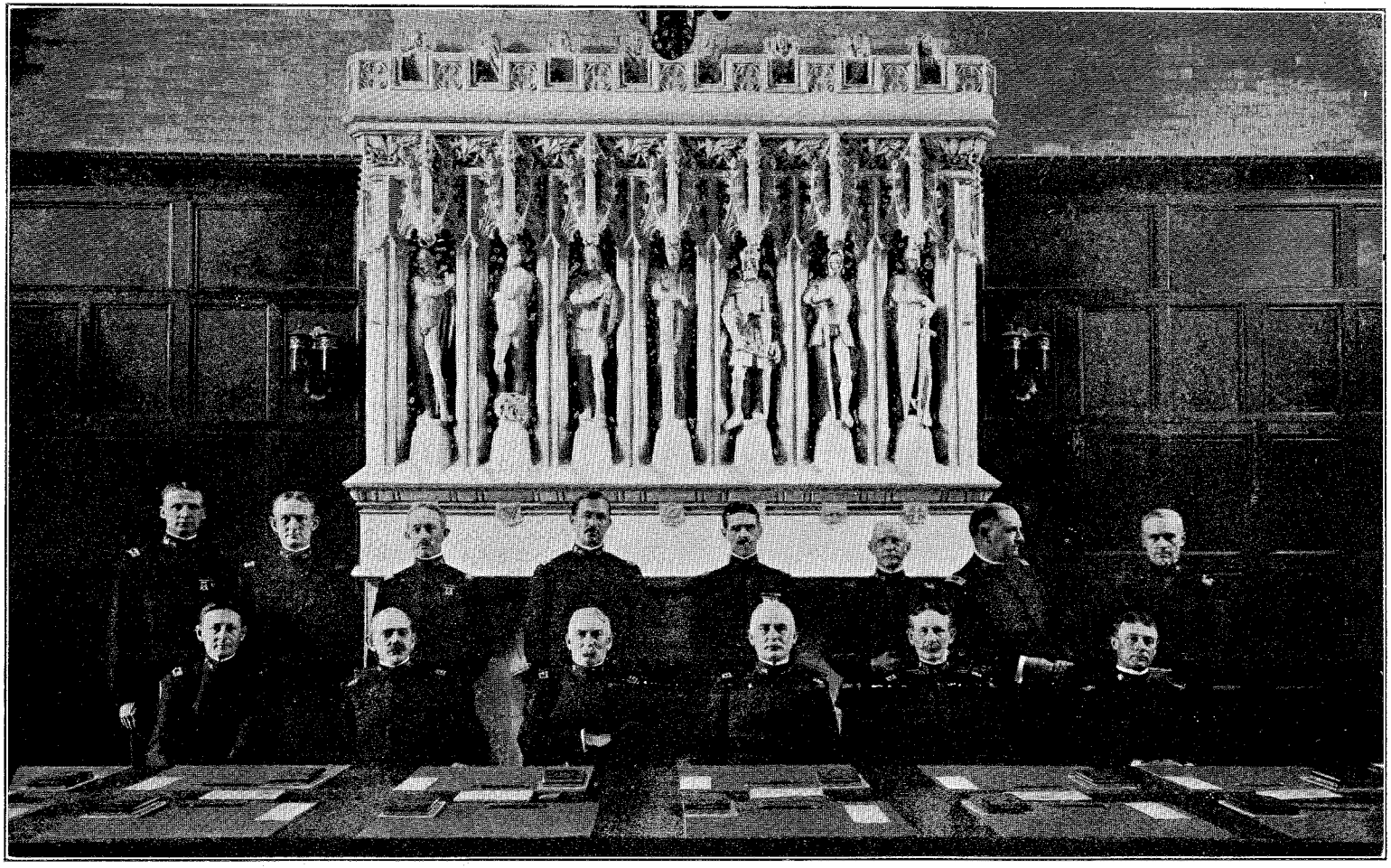
OF THE

SUPERINTENDENT



UNITED STATES MILITARY ACADEMY

1913



THE ACADEMIC BOARD

ANNUAL REPORT

OF THE

SUPERINTENDENT

UNITED STATES MILITARY ACADEMY

1913

ANNUAL REPORT OF THE SUPERINTENDENT OF THE UNITED STATES MILITARY ACADEMY.

Headquarters United States Military Academy,
West Point, New York, September 1, 1913.

SIR:—As directed by the President in paragraph 6, Special Orders, No. 195, War Department, Washington, August 19, 1912, the undersigned assumed the duties of Superintendent of the United States Military Academy and command of the Post of West Point, New York, on August 31, 1912, relieving Major General Thomas H. Barry, U. S. Army, of these duties.

Personnel.

The number of officers on duty at the Academy is shown in the following list:

Superintendent and staff	4
Professors, permanent	7
Professors, by detail from the Army	4
Professors, Associate, detailed	2
Professors, Assistant, detailed	11
Commandant of Cadets and Tactical officers	13
Master of the Sword, Instructor of Military Gymnastics and Physical Culture	1
Instructors and other officers	70
Medical Corps	3
Dental Surgeons	2
Chaplain	1
	118

Besides these there are civilians in prominent positions as follows:

Librarian	1
Civilian Instructors of Languages	4
Civilian Instructors in Fencing and Military Gymnastics	2
Teacher of Music	1
Organist and Choirmaster	1
	9

Annual Inspection of the U. S. Military Academy.

The inspections of the military departments and the business methods of the Academy are made annually under specific instructions from the War Department. That for 1913 was made by Colonel S. C. Mills, Inspector General's Department, July 15 to 22, 1913.

The following extracts from his report are submitted:

Under instructions from the War Department contained in letter from The Adjutant General's office, dated June 20, 1913, I inspected the Military Departments and business methods of the United States Military Academy, July 15th to 22d, inclusive.

The last inspection was made July 16-23, 1912, by Brig. Gen. George F. Chase, U. S. A., Acting Inspector General.

* * * *

Battalion of Cadets.

I reviewed and inspected the Battalion of Cadets in full dress uniform. They fully maintain their standard of excellence. I was impressed with the excellent results of the methods used in training new cadets, as shown by their steadiness in ranks, execution of the manual of arms, marching in battalion, and general set up and appearance. The cadet camp was in excellent condition as to police. The latrines and baths were in proper shape.

* * * *

The Corps of Cadets is a special body undergoing instruction along many lines of military duties. The object of an inspection of the corps is, I take it, to ascertain whether the drills and methods used in the military instruction of the cadets are correct, well designed for the end in view, and carried out in a thorough and painstaking manner. I witnessed, in company with the Commandant, and the various tactical officers charged with the work, the following drills and exercises:

Setting up drill of the battalion.
Battalion drill.
Mortar drill.
6″ gun drill.
Standing gun drill.
Cadets as drivers, light battery drill.
Practical military engineering, building pontoon bridge.
Road reconnoissance.
Outpost drill.
Cavalry drill in the riding hall for Third Class.
Target practice for First Class men,
    Fourth Class men being in the pits.
Tent pitching drill.
Packing drill.

Dancing and swimming.
Manual of the sword.
Exercise in giving commands.
Guard duty.
Inspection of kits for field service, Infantry.
Inspection of kits for field service, Cavalry troop.
Preliminary practice to try out cadets for polo playing.

In all these drills and exercises I was strongly impressed with the serious manner in which the officers of the tactical department go about their work; the care which is exercised by the Commandant of Cadets to utilize every means to properly drill, instruct and discipline the corps, and the excellent results which are being obtained.

The same attention to their duties is to be noted also on the part of those non-commissioned officers and selected men whose duties make them at times instructors to cadets. The tone of the instruction is excellent, and I have no criticism to make on it.

Band and Field Music Detachment.

These were inspected both on the field, and in barracks. They are in excellent condition.

* * * *

Sickness Among Cadets.

* * * *

There has been a steady decrease of percentage of daily sick in hospital from 3.6 in fiscal year ending June 30, 1910, to 1.5 in fiscal year ending June 30, 1913.

Particular attention is invited to the following table, showing the injuries from football during the three months' periods, from September 1st to November 30th, for the fiscal years ending June 30, 1910, 1911, 1912, and 1913.

Football Injuries.

3 months' period Sept. 1st to Nov. 30th.	Season 1909	Season 1910	Season 1911	Season 1912
Number of football injuries (Hospital and Quarters)	85	41	66	61
Number days lost in hospital from football injuries	198	107	159	268
Percentage of football injuries to all injuries in hospital	69%	73%	71%	75%
Percentage of days lost in hospital from football injuries to days lost in hospital from all causes	25%	13%	27%	46%

It appears that from September 1st to November 30th, 1912, there were 61 injuries received in football, involving a loss of 268 days in hospital. That during this same period the percentage of football injuries to all other injuries was 75, and that the percentage of days lost in the hospital from football injuries to days lost in the hospital from all other causes was 46.

In considering the percentage of football injuries to all other injuries, it must

be borne in mind that during this period riding drill and gymnastic drill are going on, and that both involve in the chances of accident many more cadets than does football. The football squad usually starts with about 60 members, and decreases in number as the selection for the teams are made. Experience seems to indicate that football is likely to produce more lasting injuries than riding or gymnastics.

In view of the comparatively small number of cadets who play football, and the very high percentage of days lost in the hospital from football injuries to days lost in the hospital from all other causes during the football season, 46 per cent, almost one-half, I regard it as questionable whether the value received from football justifies the resultant injuries.

* * * *

Engineer Detachment.

It is in excellent condition.

The barracks are in the same condition as previously reported—defect 12 last report.

There is no mounted detachment with this command which approximates an engineer company. For the purposes of proper drill, instruction and efficiency of the detachment, to enable the requisite instruction to be given cadets 20 mounts should be attached to this command, to be kept in Engineer stables, and used entirely for engineer duties.

Ordnance Department.

In excellent condition throughout.

This detachment has an authorized strength of 19 and an actual strength of 17 men.

To properly perform the duties of this detachment, during the months of May, June, July and August the services of at least 4 more men are needed.

The Cavalry Detachment.

This detachment is in excellent condition throughout. Barracks and stables in excellent police; animals and equipments well cared for, and duties well done. This detachment has an actual strength of 124 men and 175 horses.

In view of the number of men in the detachment, the number of animals and sets of equipment in use, and the constant duties of the detachment, it is recommended that one more officer be assigned to duty with it—making 3 officers in all.

The Field Artillery Detachment.

In excellent condition throughout.

This detachment has an authorized strength of 136 enlisted men. It compares with a regular field battery as follows:

Regular Field Battery.

1. Takes care of one 3-inch gun battery, complete, and 121 horses.

2. Maximum authorized strength, 133 men.

West Point Artillery Detachment.

1. Takes care of one 3-inch gun battery, manned, horsed and equipped; one 3-in. gun battery, equipped; one 3.95-in. mountain gun battery, partly manned, horsed and equipped; one 4.7-in. gun battery, equipped; one primary observing station; one secondary observing station; one searchlight station; one meteorological station.

2. 119 artillery horses on hand, authorized allowance, 126; 12 mountain artillery pack mules; 106 sets artillery harness; 97 spare saddles, bridles, etc., used by cadets in field artillery instruction.

3. Maximum authorized strength, 136 men.

Practical instruction of cadets is given as follows:

1. Fire Control Station.
2. 12-in. Mortar Battery.
3. 6-in. Sea Coast Battery.
4. 3-in. Field Battery, Dismounted.
5. 4.7 Siege Battery, Dismounted.
6. 2.95-in. Mountain Gun Battery, Dismounted.
7. 2.95-in. Mountain Gun Battery, Mounted.
8. 3-in. Field Battery, Mounted.

Since cadets have no great familiarity with artillery material, nor with the various drills, it is desirable and economical to have experienced non-commissioned officers present to assist in instruction and care for material.

An increase of 3 sergeants, 4 corporals, 2 mechanics, 1 horseshoer and 24 privates in the authorized strength of the detachment is recommended.

In view of the size of the detachment, the number of animals, amount of harness, saddlery and material to care for, and the variety of its duties, there should be 3 officers on duty with it.

The Q. M. Corps Detachments.

The Army Service Corps, and the Q. M. Corps Detachment, are in excellent condition, and are performing their duties in a satisfactory manner.

The general excellence of these various service detachments is shown by their satisfactory work, excellent discipline, comparatively small number of desertions, and good appearance.

Business Methods.

Treasurer, U. S. Military Academy.

The Cadet Mess is excellently well run. At inspection 9 a. m., Sunday, unannounced, it was in good police. Food is carefully purchased, well prepared and properly served. Casual conversations with cadets for the past year convince me that there is no just ground of complaint as regards the running of the mess.

The total cost of mess July 19th, was $222.47; feeding 414 cadets, 1 officer and 49 help—an average of 60 cents. The daily cost from July 1st to 19th, inclusive, varied from $218.12 to $425.80, variation being caused by easily ascertained local conditions which affect the amount of supplies drawn from store to kitchen.

A carefully selected post commissary sergeant should be sent to the Academy as understudy to Post Commissary Sergeant P. McDonald, now steward of the mess. Sergeant McDonald will have 30 years' service next year, and intends to retire. The position is an exacting one, and Sergeant McDonald's successor should be trained under him.

The Cadet Store.

The work of the Cadet Store has outgrown the capacity of the building. Work rooms are too crowded, as are also the store rooms in basement. A new building of proper size is needed.

The quality of work turned out is extremely satisfactory.

* * * *

The Laundry.

The present laundry building is old, dark, and not sufficient in capacity for the amount of work required. The walls of the building are light, 12-inch brick, with wooden floor joists. Much heavy machinery has been installed on the second floor of the older portion of the building, and the dead load is probably far in excess of that contemplated when the building was erected. From the nature of the work, the building is damp. There is no electric light in the building, and the gas lights do not give satisfactory results on dark cloudy days, making it hard for the operators. During the fall, winter and spring the laundry can do its regular work, but after the 1st of June, when the Battalion of Cadets goes into white trousers, the laundry cannot attend to the work of the cadets, and also do the laundry for officers, their families, and enlisted men. There is some old or obsolete machinery, a mangle with no safety appliances. One girl operator had one arm crushed in the mangle. A new mangle, such as they need, would cost from $2,600. to $2,800. and should be installed.

The installation of a new laundry, large enough to meet all anticipated requirements, equipped with up-to-date machinery for laundry, dry cleaning, etc., is the most serious construction necessity of the Academy.

The money accounts of the Treasurer of the Military Academy were examined and found correct.

* * * *

The Quartermaster Corps.

The affairs of this department are well administered. The condition of the stables, shops, storehouses, buildings, cemetery, etc., etc., is excellent, so far as the resources of the department admit.

* * * *

New Construction Needed.

New buildings are needed in the following order:

Laundry, already referred to above.

School building, for children's school. There were last year in the children's school the following pupils:

8th Grade	12
7th "	10
6th "	17
5th "	33
4th "	29
3d "	27
2d "	18
1st "	12
Kindergarten	26
Total	184

The present school building can accommodate 135 pupils. This necessitated half-day sessions in the 3d and 4th grades; also the use of the rooms in the basement of the chapel for school purposes, which are inconveniently situated for this purpose. The number of pupils is likely to increase in the near future. Proper provision should be made for a suitable school building.

Officers' Quarters.—There are six sets of quarters, in which are two families each—one upstairs, one down stairs. In some of them there are common entrances, baths and toilets, for servants, which is objectionable. As any increase in the number of cadets will bring more officers for duty at the Academy proper provision should be made for officers' quarters. In view of the large number of young married officers on duty at the Academy, I believe buildings of the apartment house type are desirable.

The Hotel.

The needs of a suitable hotel have been set forth in previous reports.

* * * *

Commendation.

The Military Departments and Business Methods of the United States Military Academy are well administered; harmony and good feeling prevail; discipline is well maintained, and the tone of the entire command is very high.

* * * *

Detail of Officers as Instructors.

Officers detailed for duty at the Military Academy should be permitted to remain, if satisfactory, for at least four years regardless of any other detached service they may have had. It requires from one to two years' experience for even the best of the officers selected to become really proficient and efficient instructors. In all departments much of the first year of a detail as instructor is used in instructing the new officers both in the subjects taught and in the methods of presenting and teaching the subjects. In the department of mathematics, where officers are advanced as instructors from the Fourth to the Third Class, a second year has to be largely devoted to such instruction, so unless an officer can remain here for a full period of four years the cadets lose that instruction to which they are entitled.

The effect of the detached service law passed in August, 1912, has been to deprive this Academy of a four-year period of instruction from officers detailed here for that purpose. Except those from the Engineer Corps not an instructor at the Academy can complete a four year detail, and not one of the eighteen officers detailed to report here as instructors this August can remain four years, and two of them can remain but one year. Every possible effort was made to secure satisfactory officers who could remain a longer period. It should be borne in mind that the Academy is very much limited in its selection of officers as instructors:

1st.—They must be graduates of the Academy, as no others are sufficiently known here to warrant their selection;

2d.—They should be graduates who were not cadets with any class at the Academy. This cuts out all graduates of less than three years service as officers;

3d.—They should be officers whose standing in the subject they are to teach and whose character and abilities are such as to commend them for such a detail;

4th.—They should not have been too long away from the Academy and out of touch with educational work. Officers over eight years away from the Academy should not as a rule be detailed as instructors unless they have previously served here as instructors or known to have done work that specially fits them for the position.

These requirements when further curtailed by the detached

service law places nearly all the officers of the Army beyond our reach for a four-years' detail. The very officers who would make desirable or even satisfactory instructors are, because of their attainments, selected for other details and so rendered unavailable as instructors.

At present there are about 700 1st and 2d lieutenants in the Army who are graduates with three years or more service as officers, and about 50 graduate captains sufficiently young in the service to be considered available for detail as instructors; a total of 750 graduates from which instructors may be selected. Of these only about one-third are desirable because of their class standing and general fitness for such detail. In other words, 250 officers from which the 92 required can be selected not considering the detached service law, and it must be remembered that these very 250 officers are in great demand for all the other necessary details in the service. Judging from past experience and the future outlook not one of those 250—except Engineer officers—can take a four-years tour because of the detached service law; about one-fifth could stay three years, one-half but two years and many but one year. With four year tours the average yearly change of instructors will be 23 officers detailed and 23 relieved, while under the present law this will be about double that number. While I do not claim that these figures are mathematically exact, they are very close to it, and give an honest representation of the difficulties we are having in the selection of officers as instructors. The result is that we are compelled to ask for officers as instructors who, without this detached service law, would not have been considered for such duty. With a very few exceptions these officers when detailed have put their shoulders to the wheel and have done their very best, and yet the results have not been up to the standard heretofore attained, and has put upon the heads of the academic departments an exhaustive amount of work that is beyond all reason. The ill effect upon discipline of having instructors not naturally well equipped cannot be even estimated, and in this perhaps lies the most serious and bad effect of the detached service law upon the cadets at the Academy. Instructors who graduated low in their classes are now necessarily required to instruct the keen cadets standing high in their studies and the result is unsatisfactory not only as regards instruction but in its effect upon discipline.

It is not my purpose to oppose this detached service law, which was designed to correct existing and serious evils, but merely to urge that an exception be made in the case of officers detailed to this Academy so that they may be detailed here for a period of four years regardless of any other detached service they may have had. I recommend it not in the interests of the officers detailed, but solely for the proper instruction and discipline of the cadets at the Academy with the resulting benefit to the Army in general. I would not recommend it at all could I see that the future contained any promise of relief, but it does not. Young, desirable graduates are available for other detached duty after two years' service in the Army, whereas four years are required before coming to West Point. These are the very officers to be selected for other detached duty and are thereby rendered unavailable as instructors here, and this condition is bound to continue under the present law unless exception is made for the Military Academy.

The Corps of Cadets.

On the date of the last Annual Report, August 31, 1912, the status of the Corps of Cadets was as follows:

Cadets present, 1st Class	98
Cadets present, 2d Class	112
Cadets present, 3d Class	194
Cadets present, 4th Class	152
Cadets absent	2
Total	556*

The authorized number of cadets was 630, leaving 74 vacant cadetships at that time. Since then there have been changes as follows:

Discharged	33
Dismissed	2
Suspended	3
Dropped	1
Resigned	12
Turned back	13
Discharged cadets reinstated under Act of Congress	4
Graduated	93
†Admitted as result of April–May Examination	168
Admitted as result of the July Examination	19

*Of these 3 are Filipino cadets eligible upon graduation to appointment as officers of the Philippine Scouts only, and 2 are foreign students, one from Cuba and one from Nicaragua.

†One Chinese student receiving Instruction under Joint Resolution of Congress, and one Filipino cadet are included in this number.

The total strength of the Corps on August 1, 1913, was 608. As a result of the last census the number of Congressmen was increased last March by 44 which, under existing laws, also increased the Corps of Cadets by the same number, making the authorized strength to-day 580 including four Filipinos, plus the 107 cadets in the first class, making a total of 687 cadetships authorized. The strength of the Corps of Cadets on August 1, 1913, was 608 present and absent leaving unfilled 79* cadetships and no others to report for this academic year.

For the last ten years there have been vacant cadetships on September 1 as shown below. This is the date of starting the academic work and when all cadets have reported for the year, no other appointees being admitted until the following June:

September 1,	1903 there were	28 vacancies
	1904	42
	1905	55
	1906	51
	1907	76
	1908	117
	1909	129
	1910	122
	1911	57
	1912	74
August 1,	1913	79*

This table shows very clearly the necessity of some action to increase the number of admitted cadets so as to more nearly equal the number authorized, the capacity of the Academy and the needs of the Army. It has been the subject of urgent recommendation by my predecessors and bills have been introduced in Congress designed to remedy the condition, but so far nothing sufficiently effective has resulted.

In the interest of the country, the Army, and economy to the Government the maximum number of cadets that can be accommodated at the Academy should be kept under instruction. The plant to-day can easily handle 700 cadets with very slight increase of cost over that now required for the 608 cadets in the corps. Only 44 per cent of the active Army officers are graduates of the Academy. This can be fully doubled in time if the Academy is kept up to its capacity of 700 cadets.

*Since August 1 one cadet has resigned, leaving 80 vacancies.

The per cent of cadets passing to those appointed during the last decade is about 37, but this per cent is higher in the later years than in the earlier ones of this decade. This small percentage is due to the large number who fail to report for examination (28 per cent or 153 out of 540 failed to report last April), and to poor preparation and physical defects. Of the 387 candidates who actually stood the mental entrance examination last April 198 passed successfully, 30 of whom had no vacancies or were deficient physically. In other words 51 per cent of those who tried passed the mental examination successfully.

The per cent of cadets graduating to those admitted for the same period of ten years is about 70, while during the preceding decade, 1892–1902, it was about 50 per cent. The increase from 50 to 70 per cent is undoubtedly due to the more thorough requirements for entrance, to the increasing prevalence of competitive examinations in selecting candidates, and to assistance now given by instructors outside of recitation hours. The foregoing results show that both the per cent of candidates admitted and the per cent of cadets graduated are increasing.

I am firmly convinced therefore that there should be no changes tending to lessen the present requirements for admission, either in the subjects of examination or the standards of proficiency in each.

The remedy needed to keep the Corps of Cadets up to its authorized strength I believe lies in a change in the method of selecting candidates. The laws provide that each congressional district, Territory, District of Columbia, and Porto Rico, is entitled to have one cadet at West Point; each State at large two cadets and the United States at large 40 cadets. The Secretary of War is also authorized to permit not exceeding four Filipinos to be designated, one for each class; also for each cadet who has completed successfully three years at the Academy a successor may be appointed from his district, State, &c., under the law of 1910 which is effective only till 1916. This law should be extended until 1933 when the probable increase in the number of Congressmen will be such as to give a total of 700 or more cadets without the law of 1910.

These cadetships belong to the people of the district, State, Territory, &c., and should be open competitively to all the youths eligible to compete, and it is my recommendation that *a law be*

enacted requiring competitive examinations to be held for each vacancy; that youth to be appointed who passes successfully the best mental examination and who is physically and morally qualified. The examination questions should be prepared by the Academic Board and a successful passing of the competitive examination should qualify a youth to enter, so that no other mental examination need be required. The details of conducting such examinations should, I think, be left to the Secretary of War. By announcing in the local papers some ten months or a year in advance that such a competitive examination will be held, stating its scope, it is believed that there will be a large number of eligible youths who will present themselves for examination in each district from which a vacancy is to be filled.

The following table shows the result of the present method of selecting candidates in some States as determined by the examinations in April, 1913:

State.	Number of vacancies.	Principals and alternates appointed.	Declined or failed to report for examination.	Failed to pass mental examination.	Vacancies not filled as result of examination.
Alabama	8	18	6	6	4
Arkansas	4	9	9	—	4
Connecticut	4	10	1	6	1
Idaho	2	6	3	2	1
Illinois	14	24	10	6	6
Oklahoma	4	10	4	3	1
S. Carolina	2	5	4	—	1
Tennessee	6	11	3	4	2
Virginia	4	11	5	3	2
Wisconsin	7	11	4	3	4
	55	115	49	33	26

Of the above 55 vacancies 26 remained unfilled although 115 candidates were designated for those vacancies—a result which I think would have been largely if not entirely obviated had there been an open competitive examination held for each vacancy as outlined above, and which would bring to the Academy the best material available. Such a competitive examination will further do away with any necessity for additional examinations to fill the vacancies. These additional examinations in the past have been most unsatisfactory. Being held on short notice with little time to prepare only a very small percentage pass successfully, a number wholly out of proportion to the expense involved to the candidates and the time and trouble to all concerned. These successful candidates do not enter the Academy till August 1,

thereby losing the greater part of the military instruction given in camp from June 15 to August 28, and in consequence are handicapped when starting academic work with their class on September 1 by the necessity of further military drill and instruction from which the members entering in June are exempt. If this objectionable additional examination is thought necessary by the War Department it should be held not later than May 10 so that all new cadets may start together by June 15. I would further recommend with regard to these additional examinations, if they are continued, that no appointees who fail on the regular examinations shall be permitted to take this additional examination unless so recommended by the Academic Board. In the past a large number of those who appear for this second or additional examination are those who have already failed (nineteen were thus reappointed for the second examination this year) and in a majority of cases have failed so badly as to show conclusively that a month or so of further preparation could not qualify them for entrance, and those who do pass have only crammed for this examination without materially improving their real abilities to pursue the course at the Academy. They usually gravitate to the foot of their class or become deficient and are discharged in consequence. Such reappointment creates a false hope in the candidate, causes him unnecessary expense and closes the vacancy to a better prepared youth. Only about 17 per cent of those taking these additional examinations this year passed them successfully as against 51 per cent for those taking the regular examinations.

The following table shows the result of the regular entrance examination held in April, 1913:

Total number of candidates (principals and alternates including two foreigners and one Filipino)		540
Failed to report for examination	129	
Withdrew from the examination	8	
Declined appointment	10	
Appointment revoked	6	
Qualified mentally, disqualified physically	31	
Qualified physically, failed mentally	125	
Disqualified mentally and physically	64	
Qualified alternates for whom no vacancies existed	20	
Qualified U. S. A. L. candidates for whom no vacancies existed	4	
Qualified mentally and physically and admitted	143	
Total		540

The above shows the result of the examination as determined by the Academic Board at its meeting on May 29, 1913, but from among those candidates indicated above as "Qualified mentally," "Disqualified physically," "Qualified candidates At Large," "Qualified alternates," &c., 25 men, in addition to those recommended for admission by the Academic Board were admitted by order of the War Department*, thus bringing the total number of men admitted as a result of this examination up to 168.

An additional examination was held July 1, 1913, to fill the 95 vacancies left after the results of the foregoing examination were known.

The following is the result of this examination:

Total number of candidates (principals and alternates including 1 foreigner)		107
Failed to report for examination	21	
Declined appointment	6	
Appointment cancelled	2	
Qualified physically, failed mentally	34	
Disqualified mentally and physically	17	
Qualified alternates for whom no vacancies existed	1	
Disqualified mentally, failed to report for physical examination	1	
Failed to complete examination	6	
Qualified mentally and physically, and admitted	19	
Total		107

Physical Training.

The physical training at West Point has been so successful during recent years that I give below a special report from Captain H. J. Koehler, U. S. Army, instructor of military gymnastics and physical culture and master of the sword at the Academy.

Special attention is invited to the recommendation in the closing

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* *Note.*—18 on recommendation of Academic Board to be reexamined physically after a period of duty as cadets,
3 by order of War Department subject to further phys. exam.,
2 successful At Large candidates appointed to vacant Congressional districts,
1 reexamined physically by order War Dept. and found qualified,
1 successful alternate appointed to vacant State cadetship.

25

paragraph of this report which is heartily concurred in. While the usual military drills and duties of the enlisted man are generally sufficient for good health, they fail to give him that all-round development and training given by the system used at West Point, which not only does this but gives as a result with it that perfect confidence in one's physical ability, that keenness to detect and take advantage of an opponent's weak points that help so much toward courage and self-control. The man that has been trained to box, wrestle, fence with gun or sabre, run, jump, vault, and swim, and knows that his muscles are trained in these and that he has physical endurance in them, cannot fail to be a valuable soldier in field or action. West Point is turning out graduates capable of giving such instruction and it is believed that a more extended use of it can be made in the Army, greatly to its advantage:

In a military establishment such as this the physical fitness of a student is undoubtedly paramount to everything else; not only on account of the important role it plays in the profession for which these young men are being prepared, but also on account of the balance between mental and physical effort which must be maintained if the highest degree of efficiency of the student body is to be attained during this period of preparation.

The curriculum of the Academy, more pretentious now than ever before, requires closer application than is required at any other institution, and this constant mental exertion which the successful mastery of this curriculum imposes would be fraught with danger to the welfare of cadets if this balance was not adjusted to a nicety. How remarkably well this has been established is borne out by the high standard of scholarship and the excellent physical condition of the Corps of Cadets, and the fact that since the introduction of the present system of training there has not been a single case of mental or physical collapse.

But counteracting the evil effects attendant upon a too close and constant mental application is but one of the results obtained through this training; other equally important results, such as the building up of the physically weak so that they may have an equal chance with the naturally robust; the quickening of the cadet physically so that his intellect may be at its best; maintaining him in a sound healthful condition and providing him with a reserve of strength, energy and vitality, against which he may draw when the exigencies incident to his profession demand it, are also attained in a very marked degree.

While accomplishing these results the method of the application of the means is such that other important soldierly qualities, such as grace of poise, agility, endurance and self-reliance, are given the prominence due them.

The means embrace only such exercises that through long experience have proven their worth; every movement having a well-defined purpose; those of doubtful value and those in which the danger of over-exertion or injury is likely are eliminated.

The splendid success of the system must be attributed to the rationality of the methods pursued; insistence upon precise and conscientious effort; the exclusion of all excesses, and the fact that the demands are always well within the capabilities of those upon whom they are made.

The system was introduced in 1885, being constantly under the supervision of the same instructor up to the present time.

From the time of its introduction up to the year 1905 it was confined to the members of the Fourth (freshman) Class only, and consisted of gymnastics, fencing, foil, sabre, bayonet and swimming. In 1905 it was extended by order of the President to include all classes, and boxing and wrestling were added to the above branches. This order also made it mandatory upon the authorities to instruct cadets so that they may qualify as instructors in these branches when they are commissioned.

In pursuance of this order the entire course was reorganized and as a result the Military Academy to-day possesses a system of training that taken in its entirety is acknowledged to be superior to any in force anywhere.

The work in the lower three classes is entirely practical; that of the graduating class being devoted entirely to the practical application of the theories of the system with a view to enable the members of this class to fit these theories to the needs of the service.

The Academy is thus furnishing the Army at large with an abundance of material well qualified to direct the physical training of the enlisted men, but up to the present time no well regulated method of procedure has been adopted by the War Department to make use of this material for the benefit of the Army.

Since this system of training has achieved such remarkable results at the Academy and since the same system may be modified to meet any condition, it can be most advantageously applied to the Army, and it is recommended therefore that this part of the soldiers' training be entrusted to these young officers under orders from the War Department. If this be done the Army will possess a well defined, well regulated and uniform system of physical training that can not fail to prove of the utmost benefit to the entire service. If, on the other hand, no use is made of the knowledge imparted to these young men while at the Academy, or if it is to be left optional with regimental commanders to use it as they see fit, or not at all, the President's order remains inoperative, and since the value that attaches to any particular portion of a cadet's practical training is in direct proportion to the value set upon it in the service, it will be difficult to impress cadets with the seriousness of this unless it is treated seriously in the service.

Department of Tactics.

This department besides having charge of the theoretical and practical instruction of cadets in the drills of all arms of the service, has under the Superintendent supervision of all matters relative to their conduct and discipline, and because of this relation to the corps it is, more than any department at the Academy,

charged with the formation of the habits, the character and the military appearance of cadets. Lieut. Colonel Fred W. Sladen, Commandant of Cadets, at the head of this department, has with the aid of his able assistants, conducted its affairs with unusual ability and satisfaction. The tone, discipline and smartness of the corps was never better than it is at the present time.

The following report is submitted by the Commandant of Cadets:

The prescribed courses of theoretical instruction and schedules of practical instruction as approved by the Superintendent have been carried out.

The class which entered on June 14, 1912 (strength 120), was taken up for duty with the battalion on July 8. As a result of the examination held on July 1, 1912, thirteen new cadets were admitted on August 1. These were moved to camp on August 8 and taken up for duty on August 10.

Results obtained with these new cadets admitted in August are never satisfactory. They miss one and a half months of the most important part of the practical course of the Fourth Class, and in order that they may not miss it all, it is necessary to send them to all drills with the June members as soon as possible, and in addition, attempt, at odd hours, to give them the necessary setting-up exercises and elementary instruction in the duties of a soldier. Their demerits are not recorded until after September 1, whereas those of the June members are recorded on and after July 14—thereby giving the former a decided advantage over the latter in standing in conduct.

The 167 new cadets admitted on June 14, 1913, brings the total strength of the corps to 595, the largest in its history, which will be further increased by those to be admitted on August 1 next.

Satisfactory results were obtained in target practice during the summer months by the First Class with field and coast artillery guns and with small arms. In small arms practice

12 qualified as expert riflemen,
55 as sharpshooters, and
10 as marksmen,

in a class of 97 members.

The sea-coast practice with service charges was held as usual at Sandy Hook.

The construction of gallery ranges in the basement of the gymnasium for rifle and pistol is now under way and it is expected that, with their use during the coming winter season, valuable instruction can be given preliminary to range practice in the summer.

Very successful results were obtained in the course of military gymnastics and fencing. The physical set-up and bearing of cadets in and out of ranks is satisfactory. It is regretted that, due to the reduction of the length of the academic course from four years and three months to four years, it was found necessary to curtail the courses for the First and Fourth Classes. Special importance is attached to the first class course as it is during this period that every effort is made to qualify the cadet as an instructor in gymnastics. All members of the First Class are placed in charge of sections made up of their own and other classes. Unusual interest is displayed by them and results

obtained that, it is believed, will enable them to enter the service well equipped to cope with this part of the enlisted man's training. It is believed that the general results obtained in fencing have proven the wisdom of the withdrawal of this institution from the Intercollegiate Fencing Association and the Intercollegiate Competition. The instructor in military gymnastics and physical culture makes the following report on this subject:

> "Since the withdrawal of the Academy from the Intercollegiate Competition, interest in fencing in the corps in general has taken on proportions never reached here before. With equal advantages to all, every cadet now has the privilege of perfecting himself in swordmanship to the limit of his possibilities and inclinations by devoting his leisure time to its practice, all this under the supervision of the instructor.
>
> "The results have been decidedly gratifying and the large number of cadets taking advantage of this opportunity is the best proof of the wisdom of the withdrawal from the Intercollegiate Competition."

Increased attention has been given to the matter of sabre fencing, bayonet exercises, and fencing with the musket; foil fencing being taught only to establish a basis for sabre work. It is believed that the results of this and the special training given to the First Class, referred to above, will eventually be of benefit to the service at large.

Instruction in polo was given to the First Class three times a week throughout the Summer and twice a week in the Fall and Spring; and during the winter in the riding hall in indoor polo with good results to the horsemanship of the entire class and in the development of a number of very good players.

The corps, 516 strong, accompanied by the U. S. M. A. Band, 61 strong, under command of the Commandant of Cadets and the officers of this department, proceeded, pursuant to War Deparment orders, to Washington and took part in the Inaugural Parade. The command left here at 7:10 p. m. on March 3, reaching Washington at 6 a. m. March 4, and returned leaving there at 8:15 p. m. the 5th. The transportation consisted of two sections of twelve cars each. All the arrangements made by the Quartermaster Corps for the trip were most satisfactory in every way. The trains were side-tracked on the Baltimore & Ohio sidings at Eckington in clean sanitary surroundings with every facility provided for the use of the cars during the day, and broad paved roadways between the tracks, permitting of prompt detraining and assembling. The command was provided with breakfast and dinner in four dining cars attached to the two sections on the sidings and detached before departure. The corps paraded in full dress as a battalion of six ten-squad companies and marched, pursuant to orders of the Grand Marshal, in a column of twelve platoons of twenty files front each. The corps as a battalion of infantry, and each individual member thereof by his conduct and bearing in and out of ranks, maintained its reputation and fully satisfied the expectations of those at the time responsible for its discipline and appearance.

The serious infractions of regulations during the year were: Three cases of hazing falling under the provisions of section 5, paragraph 152, Regulations;

four of drinking intoxicating liquor, resulting in the dismissal of two and suspension of two members of the First Class; and one of absence without leave, in which case the cadet was sentenced to dismissal by the court and discharged by the President under paragraph 67, Regulations, U. S. M. A.

During the six months ending November 30, 1912, three cadets of the Third Class were discharged and one suspended for deficiency in conduct, and one of the Second Class discharged as a result of deficiency for the period ending May 31, 1913.

On December 15, 1912, this department lost nine of its fourteen line officers by the operation of the detached service clause of the Army Appropriation Bill.

There still remains a vacancy due to the sudden relief of the senior assistant instructor of artillery who had reported during the preceding December, it being impossible to find an officer qualified who is eligible for detached service.

Attention is invited to the statement made in my report of 1912 as to the necessity for the construction of the contemplated building for Corps Headquarters and Cadet Store. Present arrangements necessitating the location of officers of this department in two buildings and the limited facilities for handling and issuing supplies in the present old Cadet Store building are most unsatisfactory.

It is earnestly recommended that funds be obtained for the drainage of the area of south barracks and paving of that part of it used throughout the academic year for class formations, and for the replacement of the old dilapidated porch by a modern one with concrete floor and glass roof, of sufficient width to permit of formations thereon in wet weather.

The recommendations in the last two paragraphs are heartily concurred in, and funds for these purposes will be asked for in the annual estimates for the ensuing year.

Academic Departments.

The work in all academic departments has been most satisfactory and successful. The method of spending much of each recitation period in explaining and imparting instruction has been continued with gratifying results as shown by the low percentage of deficiencies which were largely from the lowest class. An instructor is available daily as heretofore in each department to help cadets who desire assistance out of recitation hours and many who avail themselves of this help undoubtedly improve their class standing, so there is no excuse for a cadet to be found deficient except a lack of ability or a failure to utilize his time properly.

Department of Civil and Military Engineering.

The course in this department includes the "Art of War" besides the subjects indicated by its title. Naturally much stress is put upon this part of the course; supplementing text book instruction by lectures and a visit of the entire class to the Gettysburg Battlefield where this great battle is studied on the field itself.

The course was carried out satisfactorily, all cadets being proficient at the annual and semi-annual examination.

The following report is submitted by the head of this department Colonel G. J. Fiebeger, professor of civil and military engineering:

The course in civil and military engineering began Monday, September 2, 1912, with a class membership of 98.

In November the class lost four members; two by dismissal and two by suspension.

In December the class lost one member who was discharged for physical disability.

The class was divided into halves, A and B, formed of the odd and even numbers according to standing in natural and experimental philosophy, and each half was divided into five sections according to standing. Although all sections used the same text books, by means of omissions the subject matter was divided into five courses graduated to the ability of the students forming the sections. Transfers between sections were made every two weeks.

The course was conducted by oral and written recitations and a written general review and was completed on December 22. Every cadet having received a mark of at least 73 per cent on the written general review, there was no examination in the subject.

The course in military engineering and the art of war was begun on Thursday, January 2, and was completed on June 4.

May 5 and 6 were spent at Gettysburg visiting that field after a thorough preliminary study.

There was no examination at the close of the course since every member had made an average of at least 73 per cent on the written recitations.

During the course lectures illustrated by lantern slides were delivered on the British-Boer and the Russo-Japanese wars.

A revised text book on Field Fortification prepared by the head of the department was introduced in the course.

Department of Natural and Experimental Philosophy.

The course in this department embraces the subjects of mechanics, sound, light and astronomy, and aside from practical surveying, is the first step in the mathematical branches taught toward the practical application and use of higher mathematics in the sciences. There is no course at the Academy that better

develops the reasoning powers of the pupils than this course in natural and experimental philosophy.

The course has been satisfactorily conducted by the head of the department, Colonel W. B. Gordon, professor of philosophy.

The following report is submitted by him:

The Department of Philosophy began the prescribed course in September, 1912, with the class of 1914, 112 members. At the end of the course in Mechanics 19 members were examined at the semi-annual examination and 14 of these passed, 5 failing. Those failing, Cadets MacTaggart, Gibson, Young, Stratemeyer and Gerhardt, were conditioned, to be examined after the course in Sound and Light, about the middle of the second term. Shortly after the term began Cadet Young resigned. The others were reexamined and again failed, and were then turned back to join the class of 1915.

During the second term another member of the class (Cadet Adler) resigned, leaving 106 members to complete the course. No examinations were required on the courses of this term, all having made satisfactory progress as defined in paragraph 38 of the rules of the academic board.

There is nothing specially worthy of report during the year, except that it was the first year in the operation of the new schedule, which assigns an additional study to the second class, Spanish having been added in the latest revision. At present I have no comment to make on the effect of this change.

Department of Mathematics.

Instruction in this department covers two years of the cadets' course—the first and second years at the Academy.

Its courses have been satisfactorily conducted. Out of 339 cadets in the two classes, 22 were found deficient and of these 6 turned back during the year as against 42 deficient and 7 turned back out of 366 cadets last year.

The following report is submitted by the head of this department Lieut. Colonel C. P. Echols, professor of mathematics:

On June 30, 1912, there were on duty in the department one professor, one associate professor, one assistant professor and 19 instructors.

Captain G. B. Pillsbury, Corps of Engineers, associate professor for the last four years was relieved from duty on August 24, 1912, and succeeded as associate professor by Captain J. F. Bell, Corps of Engineers. Lieutenants George R. Allin, 4th Field Artillery, William Bryden, 5th Field Artillery, and V. W. Cooper, 12th Cavalry, were relieved from duty as instructors in the department August 24, 1912; Lieutenants G. Dillman, 6th Cavalry, A. W. Robins, 12th Cavalry, and R. E. O'Brien, 27th Infantry, were assigned to duty August 24, 1912. This gave 20 instructors at the opening of the current academic year.

New legislation required the relief in mid-session of Lieutenant G. W. Morrow, jr., Coast Artillery Corps, on November 11, of Lieutenant G. B. Hunter on December 7, of Captain C. R. Alley, Coast Artillery Corps, Lieutenants W. H. Dodds, 1st Field Artillery, J. W. Riley, 2nd Field Artillery, F. E. Williford, Coast Artillery Corps, J. A. Greene, Coast Artillery Corps, H. W. Huntley, 1st Field Artillery, W. E. Shedd, jr., Coast Artillery Corps, T. W. Hammond, 6th Infantry, C. C. Oakes, 4th Infantry, and R. E. O'Brien, 27th Infantry, on December 14, 1912. To replace them Lieutenant A. G. Pendleton, Coast Artillery Corps, was assigned to duty in the department November 5, Lieutenant C. P. Stearns, 3rd Cavalry, on December 2, and Lieutenants H. G. Coulter, Coast Artillery Corps, G. R. Catts, Infantry, H. R. Oldfield, Coast Artillery Corps, D. H. Crissy, Coast Artillery Corps, F. L. Perego, Coast Artillery Corps, S. C. Godfrey, Corps of Engineers, H. E. Miner, 5th Field Artillery, and J. L. Devers, 4th Field Artillery, on December 10, 1912. The department thus completed the academic year with eighteen instructors.

For the Fourth Class the course in mathematics prescribed by the academic calendar adopted May 4, 1912, required recitations daily between September 1 and March 18, and recitations on alternate days thereafter to June 4. Theoretical and practical surveying was assigned to the 33 alternate days not devoted to mathematics. For this reason a portion of the subject of plane analytical geometry and the entire solid analytical geometry has been deferred to the fall term of the third class year. With this exception the methods and subject matter were as in the previous year.

Examinations were held in December and June with the following results:

	No. in class.	Deficient.	Turned back.	Discharged.
December.....	153	8	—	8
June.....	143	3	1	2

For the Third Class the prescribed course required recitations daily from September, 1912, to June, 1913.

Descriptive geometry and linear perspective were completed by December 15, 1912. Differential and integral calculus, differential equations and least squares were finished during the remainder of the year as with the class of the previous year.

Examinations were held in December and June with the following results:

	No. in class.	Deficient.	Turned back.	Discharged.
December.....	186	9	5	4
June.....	177	2	—	2

The only matter to be especially noted was the summary relief from duty at the Academy in the middle of the academic session of almost the entire experienced teaching staff of the department. Having begun the academic session in September with 20 instructors on December 16, 1912, there was but one left with each class who had taught his subject before.

By rearranging the subject matter taught and holding extra reviews and numerous conferences of instructors the shock was tided over.

It is earnestly hoped, however, that Congress may see proper to except the Military Academy in future from the application of the six year law. To

relieve experienced teachers in an educational institution at irregular times during the academic session and substitute for them inexperienced teachers is a calamity. To shorten the tour of duty of instructors to less than four years in a department such as mathematics whose course of teaching extends over two years is a serious blow to efficiency.

Both of these appear inevitable with the application of the six year law to the detail of instructors at the Military Academy.

Department of Chemistry, Mineralogy and Geology.

The course in chemistry, mineralogy and geology includes besides the subjects indicated by its title an elementary course in electricity with some practical work in the operation of electrical instruments and machines. It is regretted that time does not afford an opportunity to have a more extended course in the subject of electricity, the importance of which for all Army officers is increasing so rapidly.

The work of this department has been conducted very satisfactorily. The following report is submitted by the head of this department, Lieut. Colonel Wirt Robinson, professor of chemistry:

Changes in personnel. During the past year the following officers were relieved from duty with the department:

1st Lieutenant P. H. Worcester, C. A. C.,	December 12, 1912,
Captain Geo. W. Cocheu, C. A. C.,	December 14, 1912,
Captain Clifford Jones, C. A. C.,	December 14, 1912.

The following officers were assigned to duty with the department:

1st Lieutenant J. L. Dunsworth, C. A. C.,	December 10, 1912,
1st Lieutenant E. W. Putney, C. A. C.,	December 16, 1912.

Course. Transition to the new schedule has been made and hereafter instruction in this department will be confined to the Second Class. The advantages of this change were pointed out in my last report.

Extra time made available (for this year only) by this change was utilized in an extra laboratory course in chemistry. The benefit resulting from this course was conspicuous when the subject of mineralogy was reached, the practical tests for the determination of minerals being applied with ease and accuracy.

The new text book in electricity was used for the first time and progress in this subject was gratifying. One hundred and six cadets completed the course to the satisfaction of the department.

New Academic Building. The main portion of the East Academic Building is now about completed and within a few days the section room equipment, mineralogical cabinets, library and offices of the department of chemistry will be transferred from the old building. Recitations for the coming academic year will be held in the new building. Owing, however, to delay in the wing in which the chemical laboratory, electrical machines and storage battery are to be installed, it will not be possible for a year longer to use the lecture room or the laboratory in the new building.

Department of Drawing.

This department instructs the Second and Third classes in drawing. Its work with both classes has been satisfactorily conducted. The following report is submitted by the head of this department, Lieut. Colonel E. R. Stuart, professor of drawing:

The work of the Third Class has been modified by transferring the instruction in topography and topographic drawing to the end of the Second Class course, where it will be of more value and coordinate better with the work of the department of practical military engineering. A portion of the time thus transferred is accounted for by the change in schedule which reduced the number of attendances in the 3d class year. The remainder was occupied by transferring a part of the architectural drawing (Gun Shed) from the second to the third class year.

During the year the Third Class was divided into forms and each form placed in direct charge of an instructor. It is believed that the change, together with the methods required, has resulted in a very material improvement during the year both in instruction and in accuracy of marking.

The so-called "Final Drawing" in second class year was discontinued, and the resulting time was absorbed by adding the assembly and some detail drawings of the Field Service Buzzer, drawing directly from the model without guidance from the department. It is thought that the completion of the course in mechanical drawing by requiring of the cadet a complicated drawing executed on his own initiative is a valuable test of the cadet's knowledge with which to close this part of the course.

A new system of marking was tested in the latter part of the term, wherein the drawings were marked at certain stages instead of at stated time intervals. With the experience gained, it is believed that this system can be extended so as to embrace most of the work of the department with less labor to the instructors and more accurate comparative marks.

The Second Class course will be further modified next year to accommodate the topography work which it will henceforth embrace.

The work of the assistant professor and of the instructors has been performed to my entire satisfaction.

Department of Modern Languages.

The courses in this department were carried on very satisfactorily during the year.

I repeat the recommendations of my predecessor in his report of 1912 that officers detailed as instructors in this department, which teaches both French and Spanish, should be sent to France or Spain for eight months' study and practice in their languages before reporting here for duty, and I add the further recommenda-

tion that such time be not considered in the application of the present detached service law. This recommendation is made in addition to that of continuing the present practice of sending instructors of this department abroad to study these languages during their summer vacations of three months. In French and particularly in Spanish special effort is being made to give cadets a speaking acquaintance with the language and this can only be done efficiently if all the instructors possess a good speaking knowledge, and this can only be acquired by a residence where the language is alone spoken.

The following is the report of the head of this department, Lieut. Colonel Cornélis DeW. Willcox, professor of modern languages. I am unable at the present time to recommend his suggestion that Latin should be added to the requirements for entrance to West Point:

French. No changes were made in text-books during the year. An examination was held on December 27, 1912, of 27 cadets who had failed to make the required mark of 2.2. All passed save 4 who were conditioned, and later, on February 26, 1913, made up their conditions. An examination was held June 6, 1913, of 17 cadets who had failed to make the required 2.2. Of these 14 passed successfully.

Reference is here made to last year's report on the difficulties encountered by cadets, especially those of the lower part of the class, in acquiring a competent knowledge of French.

Spanish. No changes were made in the text-books during the year. An examination was held June 4, 1913, of the 5 First Classmen who had made less than the required 2.4. They successfully passed the test.

This department now has two entire classes under instruction throughout the year, except in September during which the Second Class attends recitation in drill regulations.

The Class of 1913 is the first class to graduate in Spanish that has had 176 recitation periods devoted to this study. It is also the first class to graduate since the introduction of the new grammar, the newly selected reading matter and the conversation exercises upon which the last 32 recitations are based.

Much attention has been given during this year to Spanish composition and Spanish conversation, and the cadets of the class of 1913 have acquired such confidence in the use of the spoken word that they would be able to travel in any Spanish-speaking country without difficulty.

The department is gratified with the result and attributes much of its success, especially in the conversation, to the opportunity granted the instructors to study in Spain during the summer of 1912.

General. Study of Officers abroad.—Excellent results have followed on the policy of sending instructors abroad during the suspension of academic duties. In fact, the advantages of this policy to the department cannot be overestimated.

To the knowledge thus acquired, must be added the confidence in his own powers developed by the instructor. It is only by the continued application of this policy that the department can hope to convey to the cadets under its charge, some speaking knowledge of the languages taught. The importance and value of this policy are especially marked in the case of Spanish.

Attention is especially invited to the injury done this department by the operation of the law recently passed by Congress requiring captains and lieutenants to be sent back to their regiments whenever their time here added to whatever other detached service they may have had in the past, sick leaves and ordinary leaves included, will amount to four years out of the last six. Because of this law, the department will lose next year two officers who will have been here but two years, both of whom will have studied in Spain at the expense of the Government to fit themselves for the work; both will be sent away just when they can give their best services to the Academy.

In 1915 we lose two more instructors, one with two and one-half years' and the other with three years' service with the department, thereby losing these officers when they can give their best work. In 1916, two more will be sent away just when they have completed three and one-half years' service. During the year just completed, three officers who had been abroad at public expense, were, under this law, relieved; two in December and the other in April, to the manifest injury of the department.

The effect of such a law is apparent. The excellent work of the department cannot be kept at the high standard attained. And this condition will grow worse with time, as this law will prevent the most competent officers in languages being detailed because they cannot remain at West Point four years.

It is recommended that this state of affairs be properly presented to the Military Committees of Congress in the hope that the deteriorating effect of this law may induce them to except officers detailed here from the effects of said law.

It is believed by the department that if Latin was required as a condition of entrance, better results could be achieved both in French and in Spanish than is at present the case. The belief is also held that such a knowledge of Latin would be advantageous to other departments as well—such as English and history, mathematics and law. No great amount of Latin would be required nor would it be necessary. If candidates could be held to some knowledge of Latin grammar—Caesar and the simpler orations of Cicero—a very great advantage would be gained.

All officers of the department have done faithful and conscientious service during the year.

Department of Law.

There has been no change in the course pursued in this department. The results have been gratifying and the courses in the department conducted very satisfactorily.

The following report is submitted by the head of this department, Lieut. Colonel W. A. Bethel, professor of law:

The course of study pursued during the past year was the same as for a number of previous years and included the Elements of the Common Law, Constitutional Law, International Law, and Military Law. Inasmuch as the first two of those subjects are the foundation of an officer's legal education which must be laid in his first class year at the Military Academy great effort is made to inculcate a clear understanding of their most elementary principles—the best that can be hoped for on account of the very limited time that can be devoted to these subjects. It is believed that with a fair understanding of common and constitutional law the cadet will have little difficulty in mastering the other subjects in the course and will with proper diligence be able to meet his requirements as an officer. Those parts of international and military law which are dependent upon or closely related to common and constitutional law are given particular attention.

In the course of elementary law thirteen members of the class had a mark of less than 2.4 and were examined at the semi-annual examination and passed with a mark of 2.2 or more. In the other subjects review was by written recitation and all cadets established their proficiency without an examination. These results are believed to confirm the statement in the last annual report that the method of instruction inaugurated in this department about three years ago: viz., frequent explanatory lectures by the head of the department supplemented by an oral quiz by the instructors in the section room accomplishes the best results that can be obtained with the short periods that can be devoted to study and recitation.

A change in the program of instruction which took place with the Class of 1912 placed a few extra days at the disposal of this department, which were utilized by giving that class some systematic instruction and practice in law library work. The results were so encouraging that it was felt that some scheme should be permanently adopted by which every class should have ten days or more experience in searching legal authorities, even though some of the less important parts of the courses in international and military law should be omitted. With the approval of the Academic Board this was done during the past year with very satisfactory results. All the members of the Class of 1913 learned how to find the acts of Congress, the decisions of all the United States Courts, the opinions of the Attorney General and the Judge Advocate General, etc. This practical instruction was given from the 23rd of May to the 4th of June. I believe that better results still can be accomplished by suspending regular recitations for a few days two or three times during the academic year and devoting study and recitation periods to library work. It is hoped that the new arrangement of lecture, recitation and library rooms of this department in the coming year will facilitate carrying out this plan.

The detached service law which went into effect on December 15, 1912, caused the relief of all the instructors in this department on that date by instructors who had had no previous experience as officers at the Military Academy. The effects of this change were not nearly so serious as was expected.

Department of Practical Military Engineering, Military Signaling and Telegraphy.

All four classes at the Academy receive instruction in this department of one kind or another at various periods during the year. Its work is largely practical and is of great value in fixing in cadets' minds the meaning and purpose of their study in related subjects.

The courses have been conducted very satisfactorily.

Below is an extract from the report of the head of this department, Captain G. A. Youngberg, Corps of Engineers, instructor of practical military engineering. The recommendation regarding the supply of twenty mounts for this detachment is concurred in:

Department of Practical Military Engineering.—During the year the equipment on hand for the use of this department was increased by the purchase of a number of levels and stadia rods, slide rules, scales, drawing instruments, and similar apparatus. The United States Engineer Department supplied six transits, eight levels and four plane tables but the instrumental equipment is not yet sufficiently extensive to serve to the best advantage the needs of the larger classes of cadets.

The Engineer Department has also supplied a large amount of new ponton equipment to supply deficiencies and to replace unserviceable material at this Post. No provision has yet been made for properly housing this costly equipment and a ponton shed is urgently needed. It is recommended that an estimate for such a structure be included in the annual estimates for the support of the Military Academy.

Three additional row boats and two sponson canoes were purchased and made available for the use of cadets as a means of instruction and recreation. The boat house has been improved by the installation of a traveling crane for handling boats and canoes.

Cadet Instruction.

Following the general program which has been in effect for some time past all four classes came under instruction in this department at various times during the year.

First Class.—From July 8, 1912, to August 24, 1912, one-half of the class attended daily, the hours of attendance being from 8 a. m. to 12 noon. Five periods were devoted to instruction in bridge work and other methods of effecting crossings of streams. This included the construction of pile, trestle and floating bridges, and inprovising and handling ferries, boats and rafts of various kinds.

The remaining periods were devoted to reconnaissance and map-making. The new model sketching cases were used to the exclusion of all other types of instruments in an effort to thoroughly ground the cadets in the general methods and principles applicable to this class of work. The strict adherence to one

style of sketching case eliminated the confusion and diversity of methods incidental to introducing a multiplicity of types and is believed to have proved of genuine benefit to the cadets under instruction.

A few simple road and position sketches were made, each cadet working independently of every other cadet, but special stress was laid on "combined sketching" as applied to both roads and areas when the work of the entire section was combined into one map.

For this instruction the terrain in the vicinity of West Point is exceedingly difficult, even for the most expert topographer. The roads are very crooked making road sketching tedious and trying. The presence of magnetic iron ore in surrounding hills introduces "local attractions" and renders the compass very uncertain as a means of orientation. The slopes are very steep and very thickly wooded, both of which conditions complicate the work of determining and delineating topographic relief.

The time assigned each day for this work is very short but notwithstanding all these adverse conditions, the cadets made excellent progress and gained sufficient experience to enable them, upon joining their regiments after graduation, to undertake any ordinary reconnaissance work with understanding and confidence in their own powers.

The instruction during the fall and spring periods conformed very closely to that of the preceding year, the fall being devoted to cordage and tackle, spar and truss bridges and to demolitions by means of explosives. In the spring a short course was given in field fortification, with special reference to profiling, fabricating and using revetting materials and building various types of military obstacles. To demonstrate simple methods of determining water-supply a small stream was gauged by means of weirs and by velocity-cross section measurements.

Second Class.—This class reported during the month of October for instruction in visual signaling and again during the month of April for instruction in electrical methods of communication. The newly adopted International Morse Code was used exclusively and found to be a decided improvement over the former Myer Code. Apparently because of its wide commercial use and its applicability to all methods of signaling the cadets displayed more interest in learning this code than was the case with the Myer Code. Demonstrations were made with the Signal Corps wire cart, but a complete illustration of the results obtainable with this class of equipment is not possible on account of the lack of the required draft and riding animals.

Third Class.—During the period of the summer encampment one-third of this class reported daily for instruction in practical surveying. This course was a continuation or supplement of the so-called theoretical course given this class during the preceding academic season. The work was very similar to that of the preceding year and consisted of a graded series of exercises illustrating the principles and methods usually applied in military topographic surveying and a few individual problems in obtaining data, setting grade stakes and the like required preliminary to construction work in the ordinary military post.

This practical work for the past eight or ten years has been given during the period of the summer encampment. In this respect the Military Academy has

not differed from civilian institutions giving courses in surveying. With these it is the common practice to establish instruction camps in order to give their students the necessary practical experience in surveying, but, it may be added, they do not attempt at the same time to carry on extended courses in military tactics as is necessary at this institution. One purpose of the summer encampment of the cadets is to afford them a change and a relaxation from the severe mental grind of the remaining months of the year. To reap the full benefits from the practical work a certain amount of preparation is essential and to this the cadets have always been averse, looking upon it in the light of an invasion of their inherent rights. The performance of guard duty has also been the cause of many absences and in order to provide instructors it has been necessary to detail them from other departments of instruction thereby depriving them of the customary academic leave. These objections have been met by the changes made in the revised program of instruction which was in effect during the past academic year.

Fourth Class.—In conformity with the program of instruction above mentioned the entire course in surveying, both theoretical and practical, was given during the usual season of academic duty, alternating during the last sixty-six days of the year with the subject of mathematics. The practical work of the cadets showed a decided improvement over that of preceding classes, as was to be expected, since the cadets were fresh on the subject, there were no absences except those occasioned by sickness and they were not subject to the distractions and diversions incidental to life in cadet camp. An examination on the theoretical course was held on May 2 and seven cadets were found deficient and conditioned by the Academic Board. Of these one resigned during the succeeding month; the other six were reexamined on June 9 and passed the examination very creditably.

The U. S. M. A. Detachment of Engineers.

By the approval on August 9, 1912, of the Military Academy appropriation act the legal status of this detachment was materially changed. Prior to that time it has been maintained at the expense of the twelve companies of engineer troops in the army, eight vacancies in various grades being left in each company to provide a detachment at West Point. The Act mentioned increased the strength to 100 men and made the organization entirely separate and distinct from the three battalions of engineers but guaranteed the same pay and allowances as were then in effect or might thereafter be authorized for corresponding grades in those battalions.

Changes in the personnel have been numerous. For various causes 45 men have left the detachment during the year and of these only six have reenlisted. With the exception of a few men locally recruited the vacancies have been supplied from the recruit depot at Fort Slocum. The recruits have been of a fair average as to intelligence and physique, though very few have possessed any special qualifications for service at this Post.

The average strength of the detachment present at the Post has been 96.98, but of this number from nine to sixteen have been on extra or special duty not connected with either the detachment or the department of practical military engineering.

Attention is invited to the large amount of fatigue, police and extra duty of various kinds which the detachment is now called upon to perform in addition to its primary functions in connection with the instruction of cadets. This class of duty shows a strong tendency to increase in amount and variety and is even now of such proportions as to materially interfere with the proper instruction and discipline of the detachment. On account of this duty coupled with the work incident to getting up material and equipment for the use of the cadets at their drills, it is rarely possible to have drills for the detachment itself until after noon, thus differing from the common practice at other posts. Much of the work is of the same character as that performed by the Army Service Detachment under rather more favorable conditions as to extra pay and perquisites. The contrast leads to discontent and unrest on the part of the enlisted men of this organization and is a principal factor in preventing the reenlistment of trained and valuable men.

It is the opinion of the undersigned that conditions at this Post justify an increase in the Army Service Detachment, or by other means, placing the required police and fatigue of the Post as well as certain work incidental to construction and administration on such a basis as to entirely avoid the necessity of calling upon the special detachments here stationed for any part of this work. Such a course would not only simplify the details of post administration but would undoubtedly increase the efficiency of the several detachments maintained here to assist in the instruction of cadets.

The condition of the Engineer Barracks is practically the same as that at the time of the last annual report. Certain minor repairs were made during the year but the building should be entirely remodeled and enlarged. It was erected in 1858 for a company of engineers numbering fifty men. It has not been altered since that time except to introduce modern systems for heating, lighting and plumbing. It is rather a difficult matter to provide accommodations in this building for the present organization and would be utterly impossible were it not that some twenty or more are married and live in Highland Falls in quarters provided at their own expense.

In order to properly instruct the detachment in its duties of reconnaissance and signaling it is recommended that twenty mounts be provided and four draft animals in addition to the team which the detachment now has. The companies of engineers have been provided with mounts since 1902 and all field companies of the Signal Corps are provided with both draft and riding animals. It is impracticable to borrow these from the artillery or cavalry detachments since the drills in cavalry, artillery, signaling and engineering are all given at the same time, different cadets attending the various drills and neither of the two mounted detachments have more mounts than are required for their own uses.

Improvement to Roads and Grounds.

From its inception under the present system this work, which is in accordance with the design of Olmsted Brothers, landscape architects, of Boston, Mass., has been executed under the direction of the instructor of practical military engineering, as the junior member of the committee charged with this improvement. Foremen have been provided by the detail on extra duty of certain

noncommissioned officers and privates of the detachment of engineers. The laborers have usually been Italians.

During the year the main road making the circuit of the Revolutionary Defenses of 1778 has been completed to its junction with the Eagle Valley Road. A temporary earth surfacing has been placed on portions of this route and while still very rough it is now practicable for horsemen or for light strong vehicles.

The work has been somewhat more expensive per lineal foot of road built than was the case during the preceding year. This was due to the character of the terrain, much of the route being over deep ravines or on side hills requiring extensive rock fills. Due to extreme scarcity of soil the cost of surfacing is likewise very high and the situation in this respect is rendered all the more difficult by reason of objections to excavating any extensive borrow-pits or disfiguring in any manner the natural features of the ground.

Department of Ordnance and Gunnery.

The course in this department has been conducted very satisfactorily. There have been no material changes in the work covered.

The following are extracts from the report of the head of this department, Lieut. Colonel W. H. Tschappat, professor of ordnance and science of gunnery:

The course in ordnance and gunnery throughout the year was practically the same as for the last year this course was taught, viz., year ending June 30, 1911. Theoretical instruction in the course during the year was very successful, only one cadet being required to take an examination at the end of the first term, and none at the end of the second term.

It is hoped to incorporate some modifications in the theoretical part of the course before the next academic year. Changes in ordnance material and construction are so rapid that almost constant revision of a text-book on the subject is necessary to keep it up to date.

Available time in connection with other courses permitted giving each cadet only 12 periods, of 2 hours each, instruction in practical shop work.

Practical shop work is considered to be valuable instruction and it is hoped to so arrange the theoretical course as to increase the time available for practical instruction.

Ordnance Material.

The armament of the Post has been kept in good repair during the year. Changes and alterations ordered by the War Department in the Field Artillery material have been incorporated in the batteries at this Post.

Ordnance Laboratory.

During the year there have been installed the following machines purchased in the previous year:

1 Positive pressure blower,
1 400-lb. Billings & Spencer second-hand friction roll board drop hammer,
1 5 h. p. 220 volt D. C. motor.

There have been ordered but not yet delivered:

5 Additional lathes for cadet instruction.

Museum.

Various experiments made during the year on the restoration of old flags have resulted in the adoption of the netting method for the repair of these flags.

Steps were taken through the War Department to obtain from military attachés abroad descriptions of the methods used in foreign countries in the repair of old flags. Much valuable information has been obtained from the reports received. Much valuable information has also been received from Chaplain Edmund Banks Smith, Governors Island, N. Y., who fully explained and illustrated his method of repairing flags.

With the information thus gained it is hoped in the next year to repair a considerable number of the old flags in the museum.

Ordnance Detachment.

The work devolving on this detachment consists chiefly in furnishing the enlisted personnel required in the ordnance museum; in maintaining in proper condition all seacoast guns and batteries installed on the Post; in repairing, altering and handling target material for small-arms practice; and in keeping in good order the grounds and buildings pertaining to the ordnance laboratory.

The recommendation made in the last annual report that the strength of the detachment be increased by six men is again submitted. If however the detachment cannot be increased it is recommended it be excused from furnishing any men for the post guard during the season of drills with coast artillery and target practice.

Department of Military Hygiene.

The course of instruction in this department was carried out with satisfactory success.

The following report is made by the head of this department, Lieut. Colonel F. R. Keefer, Medical Corps, U. S. Army:

Instruction in military hygiene pursued the course as outlined in previous reports and embraced the following topics: personal hygiene, exercise and physical training, the selection of recruits, preventable diseases, clothing and equipment, the water supply, foods and their preparation, the disposal of wastes, the sanitation of posts and barracks, the sanitation of camps, marches and battlefields, the hygiene of hot and cold climates, the sanitary duties of line officers, venereal diseases, the nature and effects of alcohol and other narcotics.

The course covered the period from September 2 to November 7, 1912. During this period two classes, the second and the third, received instruction, since a general revision of the curriculum necessitated a doubling of the course.

The detail of medical officers for temporary duty at the Academy, as instructors in military hygiene, has resulted in marked benefit to that department and to the cadets undergoing instruction. In conformity with this custom, Captains

Perry L. Boyer, James M. Phalen, Arthur N. Tasker and First Lieutenant William L. Sheep were detailed for this duty during the course. An instructor additional to those mentioned being required for the unusually large Third Class, it was found necessary to detail one of the medical officers regularly on duty at the Academy for this purpose and Captain Calvin D. Cowles, jr., Medical Corps, was so assigned. These officers all rendered aid of a high order to the head of the department.

Instruction was imparted by means of recitations and lectures. The text books in use were "Elements of Military Hygiene, Ashburn" and "Alcoholic Drinks and Narcotics, Keefer." The lectures were given to the two classes jointly and were illustrated with lantern slides. Major Edward L. Munson, Medical Corps, made an admirable address on "The Influence of Camp Diseases in the geographical expansion, political history and military policy of the United States." Captain Phalen addressed the classes on "Camp Sanitation." The head of the department lectured on the following topics: "Personal Hygiene"; "The Chief Preventable Diseases of Soldiers"; "The Conservation of Health in Hot Climates"; "The Functions of the Medical Department on Field Service."

The department has no home of its own and its library, records, and other equipment have been kept in the office of the surgeon. With the completion of the new academic building, it is hoped that permanent quarters may be assigned. It is intended that a collection of articles pertaining to military hygiene shall be formed.

Department of English and History.

The course in this department has been carried out successfully and satisfactorily.

I am unable at the present time to recommend the important changes recommended in paragraphs 5, 6, and 7 of the report submitted by the head of this department. The successful operation and the good results now obtained in this department do not call for a change in its present organization and the additional expense of another department.

The transfer of history from the Fourth to the Second Class would involve a considerable rearrangement of the courses at the Academy and is a matter to be considered and decided by the Academic Board. And as to the added requirements suggested for entrance in history I am not in favor of increasing the scope of this examination at present.

The following report is submitted by the head of this department Lieut. Colonel L. H. Holt, professor of English and history:

It is believed that the standard of efficiency in the instruction in this department has been maintained throughout the past year in both branches. In

English, the change mentioned in the annual report of 1912, namely, the arrangement of the lessons in literature in such way that during the period when the cadets are studying the principles of composition they will be also studying the best classic examples of English prose, was instituted with marked success. The importance of the principles of good writing was more vividly impressed upon the class by the examination and discussion of these examples at that period in the course. In history, the new text-book proved to be much superior to the old in the logical directness with which the material from the Congress of Vienna to the present date was covered. That the cadets were able to comprehend this period in history with greater facility and thoroughness was proved in the discussions in the class room and reflected in the marks assigned.

No important change was made in the method of instruction pursued by the department. In the composition work, individual instruction was still further emphasized, the small number of cadets in the lower sections making this possible. In both English and history, the conferences held in advance of each recitation on a new lesson, and the detailed study diagrams issued to the instructors, have served to maintain thoroughness and uniformity in teaching throughout the various sections.

3. A serious break in the work of the year was threatened by the operation of the provisions of the detached service law in causing half of the instructors in the department to be relieved December fifteenth. However, the frequent conferences, the use of the study diagrams for class-room work, and the influence of the experienced instructors who remained on duty with the department helped to tide over what promised to be a very critical period. The new instructors, called upon to assume the work of instruction in the middle of the course without previous experience in teaching these subjects, deserve great commendation for the earnestness with which they took up their unaccustomed task.

4. The present head of this department has now been in charge for three years. During this time experience has indicated some reforms which he believes advisable for the good of the course and for its value to the cadets under instruction.

5. It is believed in the first place that the department should be divided into two departments, one for instruction in English and one for instruction in history. It is requiring more than should be required of one person to ask that he should keep himself an authority in two branches on such broad nature as these. Merely to inform one's self thoroughly of the literature of the French Revolution, or of Napoleon, or of conditions in contemporary Europe, or of the principles of Political Science, will tax a person's efforts to the utmost, but to attempt this in addition to keeping abreast of contemporary work in literature, in addition to being conversant as is necessary with authoritative criticism on the examples read in the course, is to attempt the impossible. Under present conditions, the head of this department is forced to divide his available time (after deductions are made for Academic Board work, committee work, and library work) between the two subjects, feeling dissatisfied with what he personally can accomplish in each.

6. In the second place it is believed that the best ends of the entire curriculum of the Military Academy would be served by having history taught in the

second class year instead of in the fourth. By placing the subject in second class year, the department would be able to cooperate intelligently with the department of civil engineering (study of campaigns) on the one hand and with the department of law on the other. It cannot be doubted that cadets fresh from the work of the history course, in which the study of the period from the French Revolution to the present occupies the greater part, would appreciate more the study of modern campaigns in the course in first class year, and correspondingly would they profit from their knowledge of the fundamental constitution of the modern state in an intelligent understanding of the course in law.

7. It is further believed, as was noted in the annual report for 1912, that the limitations necessarily imposed upon the history course by the time allotted to it make it advisable to restrict the course to the period beginning with the French Revolution. To military students this period is of supreme importance, and what would be lost by the omission of the period from 1500 to 1789 would be more than made up by the thoroughness with which the modern period could be covered. In the last annual report it was suggested that the candidates for admission be required to be prepared in general history up to the French Revolution.

8. It is believed that in connection with the work of the department of English a practicable scheme can be devised for directing the outside reading of cadets during third and second class years without interfering with the time required by other studies. Such a scheme need have no recitation periods, but instead of these a monthly conference of fifteen minutes or half an hour on some assigned reading. At present, so little time is available in the English course for the study of standard literature that little more than a reading of an example in each of the forms of literature (as the drama, the essay, the story, etc.) can be accomplished. The advantage of a scheme whereby the cadets would be encouraged to read more of the interesting standard literature seems obvious. It may be noted that English was taught in fourth class year and in third class year also in 1906 and 1907. The description of the part of the course given in third class year follows: "Beginning April 15, there is an additional course in English. During this period each cadet is required to read a group of four books, each group consisting of a novel, a poem, an essay and a play. At the end of the course, each cadet is required to hand in a written composition on one of these books and an oral examination is also held at the end of the course." —*Official Register*, 1906. The assignment of books for choice of reading, and the individual conferences on such reading, could be done by officers of this department so that no additional work would fall upon members of any other department in the Academy.

9. In conclusion it is a pleasure to commend highly the assistant professors and the instructors for their efficient cooperation in the work of this department.

Children's School.

This school has enrolled 193 pupils and an average daily attendance of about 175. The extreme capacity of the school

building is 135 and to carry on the instruction it has been necessary to use the basement of the new Cadet Chapel and such other rooms as could be found about the Post. This makes proper teaching and control of the young pupils most difficult. Estimates for a new building will be submitted this year for the action of Congress. This has been done in previous estimates but the time has now come when because of the increasing attendance it cannot be delayed without serious detriment to the instruction and health of the pupils.

Lieutenant R. G. Alexander, Corps of Engineers, has ably supervised the work in this school and considering the difficulties against which he and his teachers have had to contend in the way of spare and available time the results have been very satisfactory.

The following report is submitted by Lieutenant Alexander:

The organization of the school was unchanged except for the employment of an additional teacher, and slight changes in assignment of teachers to grades. It was as follows:

	Number of Pupils.
8th grade	11
7th grade	15
6th grade	25
5th grade	29
4th grade	22
3d grade	22
2d grade	22
1st grade	47
Total	193

Eight children were graduated from the school in January and two in June, 1913.

The school building is entirely too small to accommodate the number of pupils attending and it was necessary for the 3d and 4th grades to attend in the basement of the Cadet Chapel. These grades did good work but were greatly handicapped by lack of blackboards and general unsuitability of the room for school purposes. The isolated position of the Chapel causes more or less hardship to small children attending during severe weather and deprives the teacher there of the immediate support and direction of the principal. It also prevents the grades attending there from participating in joint exercises with the other grades of the school.

From lack of room it was also necessary to have the first and second grades attend but half a day each, one grade in the morning and the other in the afternoon. This is to be regretted as thus the pupils must necessarily prepare their lessons largely at home and without adequate assistance. Children of this age should do practically all their work at the school and immediately under the

supervision of the teacher. The half-day attendance is especially bad for the grade that must be idle all morning and attend in the afternoon only.

It is hoped that a new school building, adequate in size, better arranged, and with provisions for practical work in manual training, may be secured before many years.

At the close of the term two days were devoted to a display at the school building of work done by pupils and of a number of interesting exhibits from commercial firms showing the varieties, the processes in manufacture, and the uses of many staple articles of commerce. Mr. Edmund Cocks, the principal, deserves great credit for his zeal in obtaining these exhibits as well as for the attractive and instructive use made of them.

The appropriation of $4120.00 for maintenance of the school was expended as follows:

Pay of principal	$1,080.00
Pay of four grade teachers	2,250.00
Pay of sewing teacher	150.00
Purchase of books, stationery, etc	534.06
Pay of janitor at chapel	100.00
Balance	5.94
Total	$4,120.00

Adjutant's Office.

The work of the adjutant's office has been most efficiently and satisfactorily performed by Captain George Vidmer, Cavalry. He has not only carried ahead the improvements begun when he took charge a year ago but has initiated further improvements in the system and method of keeping the records that add to their accuracy and simplicity and at the same time improves facility of consultation.

The duties of the adjutant at this Academy are most exacting and require more time than should ever be asked of one officer for office and administrative work. Besides such work he has to plan and carry out the details of the numerous official and semi-official ceremonies and entertainments required and expected of the Superintendent. This is no small job in itself and it seems to be increasing year after year.

In order to carry on the work of these headquarters properly the adjutant should have an officer to assist him and relieve him of the merely routine matters of the office—the supervision of the bindery and printing office, of detail charge at social entertainments, etc. While Captain Vidmer has performed all these duties

with great credit to himself and the Academy, he has done so at considerable risk to his health. It is more than one man can do efficiently without injury to himself. I have endeavored to secure an assistant for him, but due to the detached service law and the demands on the War Department for detached officers I have been unable to secure one. If the Superintendent were allowed an aide whether his rank entitled him to it or not he could, in addition to his ordinary duties as aide, perform these of assistant to the adjutant.

The following report is submitted by the Adjutant:

On July 1, 1912, pursuant to G. O., No. 26, W. D., June 30, 1912, I relieved Captain Robert C. Davis as adjutant of the Military Academy and command of the band, field music and post non-commissioned staff.

Having reported June 1st I had an opportunity to become familiar with the duties of the adjutant before actual assignment to duty.

The office force proper consists of nine civilian clerks and one messenger and five enlisted men. This force at present is ample due to the high degree of efficiency of the different units and is well able to handle the office work that would result in maintaining the corps of cadets at its authorized strength. All the civilian clerks were given their authorized leaves and the extra duty clerks passes when the work permitted. Very few days were lost through illness.

An intercommunicating telephone system has been installed between offices of adjutant and all clerks, thus saving a great deal of time and unnecessary interruption of work. This has been estimated to save about one hour's time for each clerk per day.

Being in command of the field music I noted its efficiency would be greatly impaired if steps were not taken to reduce the demands made upon this detachment for orderly duty in adjutant's and commandant's offices. Some days as many as four extra orderlies were required, due to the large number of officers here, their hours of duty, and the wide area covered by the Post. Having this in mind I established an Information Bureau in one of the vacant rooms of the West Academic Building and a central location for all concerned. On January 1, 1913, this bureau was opened and has proved a most satisfactory system for the dissemination of official information. It has also reduced the regular orderly detail in the office from three to one, has saved the officers a great deal of annoyance and has given them definite hours, &c., to receive all instructions for the succeeding twenty-four hours.

A new and modern method for keeping reports and demerits of cadets was put in vogue on June 1, the beginning of the demerit period of this year. This is simpler, less liable to error and saves the duplication of records which has been in vogue here since the keeping of demerits was initiated.

A new list of "Cadets Admitted to the Military Academy from its Origin to September 1, 1912," was issued; another pamphlet showing the cadets admitted by States is under preparation and will issue this year.

The unindexed order books, referred to in report of my predecessor, are indexed and the work is now in the hands of the printer.

The printing and binding divisions are most efficient and turn out the work required of them in a highly satisfactory manner. These plants are modern in every respect.

During the coming year it is proposed to still further simplify the keeping of records, following the suggestions made by the Commission for Economy and Efficiency, and it is believed that a reduction of help in the office can be made with equal efficiency by the end of the coming year.

Too much cannot be said of the loyalty of the force in this office, and I believe it is due in great part to the fact that with but one or two exceptions, every one has been connected with the Academy for a great many years and are intensely interested in its welfare.

The appointment of clerks in this office should lie in the hands of the Superintendent and these clerks should be selected from the relatives of employees who have been connected with the Academy and who imbibe some of its spirit and traditions.

Strength of officers, civilian instructors, cadets, U. S. Military Academy, and enlisted men at West Point, N. Y., July 1, 1912:

Commissioned, Army	114
Civilian instructors	7
Cadets, U. S. M. A	523
Cadets, foreign	3
Enlisted, Army	168
Enlisted, M. A	481
Total	1296

Strength of officers, civilian instructors, cadets, U. S. Military Academy, and enlisted men at West Point, N. Y., July 1, 1913:

Commissioned, Army	111
Civilian instructors	6
Cadets, U. S. M. A	594
Cadets, foreign	2
Enlisted, Army	86
Enlisted, M. A	610
Total	1409
General prisoners	2

Quartermaster's Department.

The duties of this department have been efficiently and satisfactorily performed under Major B. T. Clayton, Quartermaster Corps.

Construction of the main portion of the East Academic Building has been completed and the three departments to occupy it

are being moved in from the old academic building so as to be ready for academic work by September 1. The chemical wing is well started and it is hoped will be ready for use another year.

Attention is asked to the quartermaster's remarks concerning the hotel. A new hotel to replace this old one is urgently needed. The present one is old and beyond economical repair or alteration, is inadequate, miserably heated by some forty stoves and open grates and is defective in plumbing—only three bath rooms for the 150 guests sometimes crowded into it. During the summer encampment and at week ends and holiday periods through the academic year, the hotel is filled and often over-crowded principally with relatives and friends of cadets, and they cannot be provided with the necessary conveniences and ordinary comforts of even a second-class boarding house, except in the way of satisfactory meals, and because of the arrangements it is with the greatest difficulty that these can be properly served. A new hotel has been urged among the other buildings to be constructed under the general improvement plans authorized for this Post, and the time has now come when this part of the construction should be started. The site selected for the new hotel in the approved plans does not accord with my views. Like my predecessor, I believe the proper place for the hotel is on or near its present site, isolated from officers' quarters, near cadet camp where parents and friends may be readily visited by cadets without waste of time going and coming. To my mind the reasons in favor of the present site are so numerous and unquestionable and those against the proposed site so positive and important that I have no hesitancy in recommending this change in the original plans. It will do away, of course, with the very expensive cluster of buildings planned to be built there for the Superintendent and his staff officers. It is true too that the new hotel on the present site will cost more than on the one proposed, because for architectural harmony it should be of stone instead of brick, also because it should be larger. The plan of the hotel proposed in the improvement scheme is lacking in number of guest rooms, dining-room space, and porch space. There are other features in the approved scheme that seemed advisable at the time, but which present conditions render unnecessary. Fifty thousand dollars for elevator at railroad station for instance—this and other

items in the scheme could be omitted and their allotment used to complete a hotel on its present site of the capacity and character needed. This with other kindred and urgent matters of construction I shall take up at the proper time with the War Department and Committees of Congress.

The roads of this Post and reservation are badly run down and in need of repair and rebuilding. Funds for this purpose for the last two years have been granted for only thirty per cent of the amount estimated, and the result is just what would be expected—bad roads that are a discredit to the Government and in sad contrast to the State roads outside and connecting with the reservation.

The following report is submitted by the quartermaster, Major B. T. Clayton, Quartermaster Corps:

Quartermaster Corps.—Under authority of the Act of Congress, making appropriation for the support of the Army for the fiscal year ending June 30, 1913, approved August 24, 1912, the Quartermaster Corps was established November 1, 1912. Since that date, this office has been charged with the duties formerly pertaining to the old Quartermaster, Pay and Subsistence departments at this Post, with the duties of disbursing officer and quartermaster of the U. S. Military Academy, as defined in the U. S. Military Academy Regulations, and with the duties of constructing quartermaster of the Post and Academy. In order to meet the increased duties, due to the consolidation of the Quartermaster, Pay and Subsistence departments into the Quartermaster Corps, one additional assistant, a captain of the Quartermaster Corps, and one pay clerk, were added to the personnel of the office. Seventeen enlisted men of the Quartermaster Corps have also been assigned to this post as follows: two sergeants, three privates, 1st class, and three privates, 2d class, in the subsistence department to replace extra duty men; two sergeants, one corporal and two privates, 1st class, in the pack train to replace civilians; four privates, 1st class, as teamsters in the post transportation to replace the same number of civilians. The services rendered by these enlisted men have been satisfactory.

Army Service Detachment.—This detachment is maintained under the Military Academy Appropriation Act, and has an authorized strength of 201. They constitute the principal working force of the Quartermaster Department here. The members of the detachment have performed the numerous demands made upon them in a satisfactory manner.

Office Organization.—The office was reorganized in accordnace with the requirements of Circular No. 1, issued by the Chief of the Quartermaster Corps, September 23, 1912. The business of the Military Academy, and that pertaining to the Quartermaster Corps have been merged. The books formerly kept of the different appropriations carried in the Military Academy Act will be discontinued and during the next fiscal year the different items of the Military Academy Appropriation will be kept track of in the same manner as if they were

different allotments from the Chief of the Quartermaster Corps for the several purposes named, using the apportionment or allotment sheets provided for this purpose. The allotment sheets are simpler and can be kept up with some less clerical work than was required to keep track of the appropriations for the Academy under the old system.

Transportation.—The records show the following as the weight of freight hauled by post transportation during the fiscal year:

	lbs.
Subsistence stores	1,189,882
Cadet mess and store	3,095,000
Post Exchange store, market and branch post exchange	2,300,000
Officers' mess	537,510
Quartermaster's supplies including fuel, forage, &c.	23,785,183
Miscellaneous supplies for all departments of instruction, quartermaster storehouse and shops, gas works, laundry and riding hall	6,652,423
Shipments from all departments inclusive of officers' property at public expense	847,282
Officers' property received at public expense	480,000
Total	38,797,271
	or 19,398 3-4 tons.

The above figures do not include the deliveries made by quartermaster transportation from the commissary, post exchange and quartermaster storehouse; nor do they include the transportation necessary in policing and repair of roads; nor the hauling of garbage and other refuse; the transportation and delivery of ice; nor the use of one wagon required by the surgeon in hauling oil during the summer for the destroying of mosquitoes; nor the transportation necessary to be furnished to the post plumber and electrician at such a large Post. In addition to the above, five animals and two wagons are permanently assigned to the engineer detachment, and five horses and one wagon to the forester; and from time to time, demands are made upon transportation for the moving of seats and grandstands for athletic games, for graduation, and various other out-door ceremonies of the Corps of Cadets.

As reported in my last report, power trucks meet the demands for transportation at this Post much more economically than horses or mules, wherever hauling can be done on the main roads. At the beginning of the year we had one three-ton gasoline truck. During the year the Chief of the Quartermaster Corps has authorized one three and one-half-ton gasoline truck and one two-ton gasoline truck, in place of animals condemned.

Post Cemetery.—The total number of interments in the Post cemetery is 1509, thirty being made during the fiscal year. Report has been made to the Chief of the Quartermaster Corps of graves containing known dead to the number of 181, not heretofore provided with headstones. These stones have been received and will be placed as soon as practicable. A portion of the cemetery set aside for enlisted men is nearly filled and the cemetery should be en-

larged to provide additional space. An item will be included in this year's annual estimate for the support of the Academy, to provide for the improving of the entrance, grading around mortuary chapel, and the clearing up of additional space, so as to give the necessary enlargement.

Fire Department.—Expenditures have been made for repairs and purchase of fire extinguishing apparatus as follows: One new hose wagon, one-half dozen fire department lanterns, one-half dozen hose and ladder straps, one 11-foot length of 4″ suction hose, two oil cans, two 11-foot lengths of 2 1-2″ suction hose with connections, eighteen combined spanner and hydrant wrenches, one-half dozen nozzles, five hand fire extinguishers, one hundred sixty charges fire extinguishers, two hundred feet of 2 1-2″ fire hose, one hundred sixty charges for Badger fire extinguishers, twenty-four charges for chemical fire engine, also purchase of other miscellaneous parts for fire engine and repair of fire engine.

For the purpose of instruction and answering fire calls promptly, the Post has been divided into three districts, the north, central and south districts, and the Fire Regulations of the post modified accordingly. Maps of the Post, showing where the different alarm boxes are located have been published and distributed by the adjutant's office. Details of enlisted men have been made to man the fire extinguishing apparatus; except that assigned to the Corps of Cadets; and fire drills conducted from time to time.

The following apparatus is on hand at this Post:

3 fire engines, drawn by horses,
3 chemical engines, fire, drawn by hand,
3150 ft. of 2 1-2″ fire hose,
750 ft. of 1 1-2″ fire hose,
450 ft. of 3-4″ hose on chemical fire engine,
156 chemical fire extinguishers,
39 small Killfire extinguishers,
1 large hose cart drawn by horses,
3 hose reels drawn by hand,
1 hook and ladder truck drawn by horses,
50 extra charges for chemical fire extinguishers,
50 extra charges for chemical fire engines,
60 fire axes.

Contracts.—Contracts entered into during the fiscal year are indicated in statements attached, marked Nos. 1 and 3.

Receipts and Disbursements.—Receipts and disbursements are shown on statements attached, marked Nos. 2 and 4.

Power Plant.—During the fiscal year 7580 tons of coal were purchased at a cost of $25,246.50. In addition to the buildings enumerated in my last report for which heat and electric current are provided, the new East Academic Building will be supplied with steam and current for lighting and other purposes, by this plant during the next fiscal year. The additional requirements being made on the central power plant will soon necessitate the adding of another boiler to the battery as it stands at present, i. e., 4—440 h. p. boilers.

Gas Plant.—During the fiscal year 15,335,100 cubic feet of gas were manufactured, 3,655,200 pounds of coal being used for this purpose. The plant is old having been in use since 1893, when it was remodelled, and during the year it was found necessary to have repairs made to the extent of $946.92. Two new benches were put in place. There are four benches and it has been customary to replace two of them every year. This plant will soon require a complete overhauling.

Surplus coke from the plant is sold at $1.25 for 18 bushels. The tar is used in the repair and maintenance of the macadam roads on the Post.

Statement of gas manufactured during the fiscal year is indicated in report No. 5.

Special Contingent Fund.—This fund is derived from rentals, sale of gas, electricity, coke, wood, and from other miscellaneous sources. The fund is expended and accounted for in accordance with Chapter 212, Revised Statutes, Act of Congress approved May 1, 1889. The statement of this fund for the fiscal year is included in report No. 6.

Hotel.—The building has been in use for over eighty years and is inadequate in size and is lacking in modern conveniences.

As stated in my last annual report, a fire occurred on June 14, last year, which caused serious damage to the hotel, especially to the roof, ceiling, upper floors, and some of the walls of the main portion of the building. The damage was repaired at a cost of $6,541.85. Of this amount, $5,946 was collected from the insurance companies, and the balance was paid out of the Special Contingent Fund. The lease of this building required the lessee to keep it insured.

Forestry Department.—One woods foreman and four woodsmen and other labor as found necessary from time to time, have been employed during the fiscal year. All expenses have been paid from the Special Contingent Fund and all sales from wood have been deposited in that fund. During the fiscal year 600 cords of wood were sold, and 1000 cords of wood have been cut (during the fiscal year) and will be available for sale next fiscal year. The sales have been chiefly to brick yards along the river, the quality of the wood making it undesirable for domestic use. The woods foreman has operated a sawmill from which has been turned out about 30,000 feet of rough lumber, which has been used for various purposes on the Post where it was considered suitable. The care of the shade trees about the Post has been placed under the woods foreman and his assistants. The elm trees had to be sprayed from time to time throughout the summer months. The damage done in former years by the beetle has thus been avoided and the trees are now in good condition with the exception of a few very old ones. A number of dead trees have been removed and new trees set out. There have been no serious fires in the forest during the year.

Public Works.—The construction of the main portion of the East Academic Building, under contract with James Stewart & Company, which was approximately 26 per cent finished July 1, 1912, has been accepted as ready for occupancy, and complete in all essential respects, on June 10, 1913. A few minor corrections and alterations remained to be completed after that date. The installation of the machinery and cars for elevators and the rolling steel shutters

for the windows will be omitted until the chemical laboratory wing is completed in order to avoid any danger of exceeding the appropriation available for this building. The building is now being furnished and equipped, preparatory to its occupancy by the departments of philosophy, chemistry and modern languages. It is intended to have everything in readiness for these departments by September 1, 1913.

Construction is in progress upon the wings of the same building under a separate contract with James Stewart & Company, dated August 16, 1912. The map-room wing is 96 per cent complete. The chemical laboratory wing is 9 per cent complete; the work on this last wing consisting of the excavating and the laying of a small portion of the foundations.

The balance of the appropriation for general improvements was insufficient to include erection of these two wings at the time of award of the main portion, as explained in previous report, and erection was undertaken upon additional appropriation of $95,117, under Act of Congress of August 9, 1912. The amount of this appropriation was based upon the contractor's estimate of cost of the wings with the main building, the estimate having been prepared during the winter of 1911, while laying the foundations and walls of the basement of the main building, and before construction had advanced sufficiently to make evident that the cost of the main portion would exceed the sum as estimated in the contract. It became fully apparent in October, 1912, soon after beginning construction upon the wings, that the funds available would be insufficient after completion of the main building for erection also of the map-room and chemical laboratory wings. Construction of the chemical laboratory wing was therefore suspended. The cellar of the map-room wing had at this time been excavated, and new foundations were being laid, and the old foundations of the library underpinned at junction with the map-room. Construction upon map-room wing was necessarily continued in order to prepare for and protect new and old foundations from damage by frost during the later severe winter weather.

Construction of the chemical laboratory wing was resumed subsequent to appropriation of $95,500 by Act of Congress March 4, 1913. Every effort is being made to complete the building in a substantial and permanent manner, and provide necessary fittings and furniture with the funds appropriated. Difficulty is experienced as heretofore in determining the full cost of work under the commission form of contract in advance of the purchase of material and actual performance of labor. Additional cost will occur in erection of the wings under separate contract, due to the increase in cost of general administration and advances in prices of a number of sub-contracts beyond optional prices for the same work if undertaken in connection with sub-contracts for similar work at time of erection of the main building.

The cost of the main portion of the East Academic Building complete with map-room and chemical laboratory wings will not exceed the amount of the original estimate made at time of completion of plans, the cost of quarrying stone, furniture and lighting fixtures not being included in the contract, nor the estimated cost of the building.

A concrete retaining wall has been constructed from appropriation for this purpose on the south side of Battery Byrne occupying a portion of the former

"Execution Hollow." The filling, surface grading, sodding and seeding of the slopes of the battery and additional area of the plain at this point, have been completed. The plain needs to have a depression south of Battery Byrne filled when funds can be made available for the purpose. This depression appears to have been caused by the railroad tunnel which passes underneath at this place. The whole plain needs additional top soil and seeding in places where it is bare or the grass poor. There is no top soil available on the Post proper and the hauling of same from distant points on the reservation will be very expensive. No funds and transportation are available at this time for the purpose.

Additional housing for protection of wagons, necessity for which was mentioned in my last annual report, has been provided by the construction of a shed with corrugated, galvanized iron roofing for 24 wagons constructed by contract from funds allotted by the Chief of the Quartermaster Corps.

An oil house 24′ x 30′ in size, with brick walls and galvanized iron roof has been erected by contract, from funds allotted by the Chief of the Quartermaster Corps. Protection from fire and much needed space for storage have been afforded in the quartermaster storehouse by the transfer of oil kept on hand for painting and other purposes, to this building.

An allotment of $30,000 having been provided under the Army Appropriation Act for Roads, Walks, Wharves and Drainage, acting under authority of the Chief of the Quartermaster Corps, plans and specifications for the draining and filling of swamps on Constitution Island were prepared by this office, and contract entered into with the lowest bidders, the Atlantic, Gulf and Pacific Company, for filling one large swamp of about 27 acres area, and two smaller swamps adjoining the right of way of the New York Central & Hudson River Railroad Company, upon the eastern side of Constitution Island. The filling of these swamps was completed May 28, 1913, in a satisfactory manner at contract price of $26,200, the material for filling being obtained by suction dredge from mud flats in the river near the shore line of the island. The contractor is required to provide additional filling to bring the surface to the established grade lines if settlement occurs during a period of three months after completion of the general fill. The contract was for a lump sum, the contractor being required to fill up to established grades. The exact amount of material required to make the fill is difficult to state, but it is estimated that there was considerably over 200,000 yards put in the place at a cost to the Goverment of about 12 cts. per yard.

Draining and filling of the remaining swamps, consisting of eight small swamps and twelve depressions or water holes, was completed by day labor in an economical manner, and the balance of $1400 saved from the allotment deposited to the credit of the Treasurer of the U. S.

Construction under contract for the addition of a second story and changes in the arrangements of present rooms of the brick wing upon west side of quarters 33 for which appropriation was carried in the Act for the support of the Military Academy, fiscal year 1913, is well advanced towards completion, including necessary plumbing, heating and lighting apparatus.

Contract has been made and work is now in progress for the installation of an indoor pistol and rifle range in the basement of gymnasium, from appropriation for this purpose.

Extensions of the water distributing system under contract, mentioned in my last annual report, were completed.

Some necessary repairs to north and south docks, such as replacing defective spring and fender piles, and portions of backing logs and planking, have been completed under contract for this purpose, at a cost of $839, paid from the Military Academy appropriation for "Repairs and Improvements."

Construction of a retaining and breast high wall is now in progress extending from the northwest corner of the power house to the riding hall to form a necessary approach to the southern entrance to the arena of the riding hall. Approximately 500 lineal feet of coping has been provided and set upon breast wall of road near the north bachelor officers quarters and elsewhere.

Roads and Walks.—Such road work as was practicable with the funds available has been done during the fiscal year. The macadam roads have been repaired by the use of crushed stone, tar and other binders. The principal part of the crushed stone was obtained from the quarry on the Post by hire of labor. It was found more economical to buy a small amount of crushed stone for use at the railroad station on account of this place being so near the car siding and such a great distance from the quarry. The stone purchased cost $1.20 per cubic yard, and it is estimated that to crush stone at the quarry costs about 70 cts. per cubic yard. The tar used was from the Post gas plant. This tar helps some to bind the stone and make the road surface waterproof, but it is not entirely effective when used alone, and it was therefore necessary to purchase some additional and more durable binders.

Besides repairs to dirt roads, repairs to drainage and minor repairs, the following road work has been accomplished during the year: The macadam roads from the commandant's quarters to the cross roads near the hotel has been reconstructed; macadam road has been constructed upon level stretch from the West Shore station to the south dock, and the road from the West Shore station to the central power plant has been repaired and resurfaced; macadam road from quarters 'E' to the headquarter building resurfaced; the area and road in vicinity of Cadet Chapel covered with tar macadam. The roads about the Post are in very bad condition and much road work is required. When the surface becomes worn or is not properly drained and waterproof, the roads are rapidly destroyed by the wash, due to the steep grades and heavy rains. The road from the south dock leading south up the hill to the main road is badly in need of a large amount of stone in order to give it a proper crown and cause the water to shed off into gutters on either side. This stretch of road is about 825 yards long and the crown of it would be an expensive work and it cannot be undertaken with any funds available during the next fiscal year. Part of the Cornwall road, leading over Crow's Nest, that is included within the limits of the reservation is in very bad shape, and it will be necessary to do considerable work on it at an early date. It is very urgent that the funds for the repair of the roads be materially increased in the next appropriation by Congress.

Repairs and Improvements.—As much repair work as practicable with the funds available has been done, and the painting of all exterior woodwork and the exterior of all wooden buildings on the Post has been practically completed. Bath-rooms were added and other work was done, necessary to make quarters

16, D, and 45 available, each for use of two officers' families. The small shed between the quartermaster repair shops and the paint-shed used as a garage for automobile trucks, has been practically reconstructed and made as nearly fireproof as practicable. A large amount of interior painting and retinting has been done in officers' quarters, made necessary on account of the change in details and the usual wear and tear.

Personnel.—Captain James S. Parker, quartermaster, my senior assistant and commanding the Army Service Detachment, was relieved December 14, 1912.

First Lieutenant Jay L. Benedict, Infantry, assistant and in charge of police, was relieved August 24, 1912.

The following named officers were assigned to duty in the Quartermaster's Department:

Captain Frank B. Watson, Infantry, assistant and commanding Army Service Detachment, December 3, 1912.

Captain Sylvester Bonnaffon, 3d, Infantry, assistant, December 2, 1912.

First Lieutenant J. M. Hobson, jr., Infantry, assistant, in charge of police and in charge fire extinguishing apparatus and fire drills, August 24, 1912.

All of the officers named have been willing and efficient in the performance of the duties assigned them.

The clerks and other civil service employees have been faithful and diligent in the execution of the work required of them.

No. 1.—*Contracts entered into by Quartermaster's Corps in force for whole or in part fiscal year* 1913.

Name	Date	Expires	Purpose
Charles H. Pavek	May 15, 1912	June 30, 1913	Hardwood.
John W. Pavek	May 15, 1912	June 30, 1913	Softwood.
The Texas Co	May 15, 1912	June 30, 1913	Gasoline and mineral oil.
Gastieger & Schaefer	May 15, 1912	Sept. 30, 1912	Bran.
Wm. Gleichmann & Co	May 15, 1912	Sept. 30, 1912	Rye straw.
Chas. Schaefer, jr	June 1, 1912	Sept. 30, 1912	Oats and hay.
Wells & Newton	June 18, 1912	Aug. 12, 1912	Installing plumbing.
Garrett-Graham Co	June 18, 1912	Nov. 30, 1912	Hauling material.
North River Coal Co	June 20, 1912	June 30, 1913	Anthracite coal.
Chas. Schaefer & Son	Sept. 20, 1912	June 30, 1913	Forage and straw.
Jos. Kaufmann	Dec. 23, 1912	May 2, 1913	Oil house.
E. A. Matthews	Jan. 15, 1913	June 30, 1913	Construction wagonshed.
Atlantic, Gulf & Pacific Co	April 17, 1913	Aug. 1, 1913	Draining and filling swamps Constitution Island.

No. 2.—Statement of funds pertaining to the Quartermaster's Corps at West Point, N. Y., received, disbursed and deposited during the fiscal year ending June 30, 1913.

	On hand July 1, 1912	Received since	Total to be accounted for	Disbursed and deposited	On hand June 30, 1913	Total disbursed, deposited and on hand
Pay of the Army	.....	$218,863.62	$218,863.62	$207,679.76	$11,183.86	$218,863.62
Army Deposit Fund	.....	9,000.00	9,000.00	4,288.81	4,711.19	9,000.00
Pay Military Academy	.....	468,612.71	468,612.71	404,092.49	64,520.22	468,612.71
Subsistence Army	.....	75,899.50	75,899.50	66,173.56	9,725.94	75,899.50
Regular Supplies	$2,289.68	98,508.05	100,797.73	100,403.72	394.01	100,797.73
Incidental Expenses	1.82	7,660.32	7,662.14	7,662.13	.01	7,662.14
Military Post Exchanges	.....	285.00	285.00	285.00	.....	285.00
Horses, C. A. & E.	.....	438.00	438.30	438.30	.....	438.30
Barracks and quarters	690.96	8,847.42	9,538.38	9,499.71	38.67	9,538.38
Army Transportation	36.41	25,834.83	25,871.24	25,142.43	728.81	25,871.24
R. W. W. & D.	.....	30,000.00	30,000.00	27,216.36	2,783.64	30,000.00
W. & S. M. P.	7,829.77	769.28	8,599.05	8,550.20	48.85	8,599.05
C. & E.	.....	2,635.34	2,635.34	2,635.34	.....	2,635.34
Disposition or Remains	.....	227.00	227.00	227.00	.....	227.00
S. G. & Ranges	2,737.97	2,414.50	5,152.47	4,826.58	325.89	5,152.47
Miscellaneous receipts	.....	2,468.25	2,468.25	2,468.25	.....	2,468.25
Soldiers Deposits	.....	4,915.13	4,915.13	4,915.13	.....	4,915.13
Pay Collections	.....	2,755.83	2,755.83	2,755.83	.....	2,755.83
Totals	$13,586.61	$960,135.08	$973,721.69	$879,260.60	$94,461.09	$973,721.69

Note.—Under the Act creating the Quartermaster Corps, effective November 1, 1912, the first disbursements under appropriations subsistence and pay of the Army were made November 22 and 25, respectively.

No. 3.—United States Military Academy. Contracts in force during the period July 1, 1912, *to June* 30, 1913.

Name	Date	Purpose
Cram, Goodhue & Ferguson	Aug. 12, 1913	Developing competitive design for improvements U. S. M. A.
Jas. Stewart & Co	July 10, 1911	Construction of East Academic Building.
Jas. Stewart & Co	Aug. 16, 1912	Construction of Chemical Laboratory wing and map-room to East Academic Building.
John A. Brashear Co., Ltd	June 25, 1912	Construction of Driving Clock, etc., for Dept. of Philosophy.
M. P. Moller	Sept. 20, 1912	Tuning and care of Chapel organ.
E. E. Court	Nov. 15, 1912	Six models—of Casco, Boston and other harbors.
Albernene Stone Co	Dec. 10, 1912	Stone Tables, Electrical Laboratory.
Jos. Kaufmann	March 21, 1913	Addition to quarters No. 33.
Jos. Kaufmann	May 2, 1913	Construction of Indoor Pistol and Rifle Range.
Alexander Larner	July 8, 1912	Anthracite Buckwheat Coal.
Long Island Charcoal Co	April 21, 1913	Hardwood Charcoal.
North River Coal Co	April 21, 1913	Anthracite Coal.
Geo. D. Harris Coal Co	April 21, 1913	Gas Coal.
Waldo Brothers	May 6, 1913	Floor benches in Gashouse.
Art Metal Construction Co	May 22, 1913	Steel cases and book stacks.
Merritt & Co	May 24, 1913	Steel lockers.
Pratt & Whitney	June 15, 1913	Engine lathes, Dept. Ord. and Gunn'y.
Richard & Parrott	May 19, 1913	Furnishing and driving piles.

No. 4.—Statement of funds received and disbursed from appropriations for the United States Military Academy at West Point, N. Y., during the fiscal year ending June 30, 1913.

	Current and ordinary expenses	Misc. items and incidental expenses	Buildings and grounds	Buildings and grounds No year Enl'g M. A.	Buildings and grounds No year Enlarging	Misc. receipts—sales at auction	Total
DR.							
July 1, 1912.							
Balance on hand fiscal year 1911-1912	$107.66	$3.59					$111.25
1912	13,171.03	6,773.80	5,516.19				25,461.02
No year—Enlarging					$59,480.02		59,480.02
Received since fiscal year 1912	10,000.00						10,000.00
1913	139,787.38	55,076.50	46,486.46				241,350.34
1913–14			7,000.00				7,000.00
No year—Enlarging					250,000.00		250,000.00
B. & G. M. A. No year				$60,000.00			60,000.00
Miscellaneous receipts, sales at auction						$629.50	629.50
Cash collections, etc	238.42	57.03					295.45
Total	$163,304.49	$61,910.92	$59,000.65	$60,000.00	$309,480.02	$629.50	$654,327.58
CR.							
June 30, 1913.							
Deposited fiscal year 1911–12	$107.66	$3.59					$111.25
1912	5,698.75	1,170.21	$1,228.26				8,097.22
1913	367.69	225.84					593.53
Miscellaneous receipts, etc						$629.50	$629.50
Disbursed fiscal year 1912	17,372.28	5,603.59	4,287.93				27,263.80
1913	128,647.61	49,627.43	32,776.48				211,051.52
1913–14			301.01				301.01
No year enlarging					$303,837.74		303,837.74
B. & G. no year				$51,392.09			51,392.09
Balance 1912	100.00						100.00
1913	11,010.50	5,280.26	13,709.98				30,000.74
1913–14			6,698.99				6,698.99
No year enlarging					5,642.28		5,642.28
No year B. & G				8,607.91			8,607.91
Total	$163,304.49	$61,910.92	$59,002.65	$60,000.00	$309,480.02	$629.50	$654,327.58

No. 5.—Amount of gas made and sent out with the amount of material used in its manufacture for the fiscal year ending June 30, 1912, and the fiscal year ending June 30, 1913.

Month	Gas made	Gas sent out	Coal used
1911			
July	1,199,000 ft.	1,181,500 ft.	290,200 lbs.
August	1,215,100 ft.	1,228,800 ft.	299,400 lbs.
September	1,264,900 ft.	1,263,900 ft.	312,600 lbs.
October	1,316,600 ft.	1,315,300 ft.	320,300 lbs.
November	1,367,600 ft.	1,366,200 ft.	327,300 lbs.
December	1,521,400 ft.	1,521,300 ft.	361,000 lbs.
1912			
January	1,690,700 ft.	1,695,200 ft.	402,400 lbs.
February	1,443,100 ft.	1,447,500 ft.	343,400 lbs.
March	1,493,600 ft.	1,491,400 ft.	354,700 lbs.
April	1,334,200 ft.	1,356,600 ft.	316,300 lbs.
May	1,240,600 ft.	1,218,600 ft.	298,000 lbs.
June	1,096,000 ft.	1,104,000 ft.	261,300 lbs.
	16,182,800 ft.	16,190,500 ft.	3,886,900 lbs.
F. Y. 1913	15,335,100 ft.	15,336,100 ft.	3,655,200 lbs.
Decrease	847,700 ft.	854,400 ft.	231,700 lbs.
1912			
July	1,005,300 ft.	999,400 ft.	242,800 lbs.
August	1,080,400 ft.	1,081,600 ft.	256,000 lbs.
September	1,101,300 ft.	1,116,100 ft.	261,900 lbs.
October	1,377,700 ft.	1,359,800 ft.	337,000 lbs.
November	1,493,200 ft.	1,516,900 ft.	354,500 lbs.
December	1,617,900 ft.	1,601,000 ft.	385,400 lbs.
1913			
January	1,550,000 ft.	1,547,900 ft.	369,000 lbs.
February	1,363,000 ft.	1,364,800 ft.	322,200 lbs.
March	1,360,200 ft.	1,367,000 ft.	322,300 lbs.
April	1,235,500 ft.	1,250,400 ft.	294,300 lbs.
May	1,054,600 ft.	1,027,200 ft.	248,500 lbs.
June	1,096,000 ft.	1,104,000 ft.	261,300 lbs.
	15,335,100 ft.	15,336,100 ft.	3,655,200 lbs.

Coal used 3,655,200 lbs. at a cost of $5,743.88.

No. 6.—Financial statement Special Contingent Fund, U. S. M. A.

June 30, 1912.	Balance on hand		$9,525.14
Receipts:	Hotel rent	$100.00	
	Post-Office Dept. rent	200.00	
	Stables rent	350.00	
	Electric light plant rent	700.00	
	Store and restaurant rent	595.41	
	Western Union Telegraph Co	60.00	
	Insurance on account Hotel fire	5,946.01	
Sale of:	Wood (forestry)	3,194.33	
	Light	12,782.37	
	Coke	640.00	
	Ice	4.00	$24,572.12
	Total to be accounted for		$34,097.26
	Total expended		$28,351.99
	Balance		$5,745.27

Treasurer, U. S. M. A. and Quartermaster and Commissary for the Battalion of Cadets.

The duties of this department have been ably and satisfactorily conducted by Major Peter Murray, 22d Infantry.

The profits arising in the conduct of its business, due to 7 per cent advance on cost prices charged to cover running expenses, are now credited back to cadets annually, so that the law requiring sales to cadets to be at cost is literally complied with.

A new cadet laundry is urgently needed. The present old building is unsafe for the heavy machinery used, dangerous because inflammable and wholly inadequate to the work required. Shoring to make the building safe has been used and recently additional shoring has been necessary to sustain the weight and vibrations caused by the machinery. A new laundry is one of the buildings provided for in the approved improvement plans, and the time has now come when its construction should be no longer delayed.

The cadet store is crowded to its capacity and it is only possible to get along by sending much of the piece work out to workers in the vicinity. Although a new building is needed and provided for in the improvement plans I think it can wait a year till more urgently needed buildings are constructed.

The following report is submitted by the treasurer, Major Peter Murray, 22d Infantry:

Treasurer's Office.—The system of accounting installed in 1910 has proven most satisfactory. The assets and liabilities of this office on June 30, 1913, were as follows:

Assets.		*Liabilities.*	
Accounts receivable....	$3,338.47	Accounts payable.....	$23,895.31
Cadet mess stock.....	10,158.34	Equipment fund.....	152,872.59
Cadet store stock	32,234.90	Dialectic society.....	223.48
Cadet laundry stock....	651.62	Glee club.....	78.82
Treasurer's cash.....	148,234.13	Miscellaneous fund....	90.52
Pay and rations due....	32,294.83	Y. M. C. A.....	255.91
		Canoe fund.....	10.50
		Surplus fund:	
		Cadet store.....	42,921.70
		Cadet mess.....	375.76
		Cadet laundry.....	6,187.70
	$226,912.29		$226,912.29

Three thousand, eight hundred and ninety-six dollars and twenty-three cents, the accumulated profits from sales by the cadet store for the twelve months, June 1, 1912, to May 31, 1913, were returned to cadets in proportion to the amount of purchases made by them during that period.

2. *Cadet Store.*—The value of the stock on hand June 30, 1913, was $32,234.90. The amount of stock carried is being held to the lowest practicable limit. The amount of stock necessary for the proper equipment of cadets varies greatly, owing to the fact that by the middle of June of each year a large amount of stock must be purchased for the equipment of the incoming class of cadets, averaging about $160 per new cadet.

Prices have been reduced so that a gross profit of 7 per cent is made. This has been found a safe percentage of profit necessary to cover operating expenses. Any profit over and above that required for operating expenses will be returned to cadets on May 31st of each year, as has been done this year.

The cadet store building, which contains the treasurer's office, cadet store, tailor shop and shoe-repairing shop, is now taxed to its fullest capacity. The tailor shop will not accommodate any more machines or workmen than are now necessary. During the spring months all available storage space is packed full of stock. While the present building can be made to answer the present needs in an uncomfortable and generally unsatisfactory manner, should any considerable increase be made in the number of cadets admitted this building will not accommodate the necessary increase in stock and manufacturing plant.

3. *Cadet Laundry.*—This is the only laundry on the reservation and from May 15 to September 15 of each year is not of sufficient capacity to do the laundry work of those pertaining to the Military Academy. As a result enlisted men, officers and others are compelled to have their laundry work done elsewhere, almost the entire capacity of the plant being required to do the work for cadets.

The laundry building consists of the original building, built over forty years ago to accommodate a hand laundry, to which four or five additions have been made from time to time to meet increasing demands. In the original laundry building has been installed practically all the heavy machinery. As this building was not built with the idea of sustaining such heavy weight, it has been necessary to shore up the second floor and additional supports are required and will be put in to make this building safe. The building is not such as will lend itself to such an arrangement of machinery as would most economically and expeditiously handle the work, is now filled to its capacity with machinery and employees, is located in the most confined and hottest site on the reservation, and is nearly two miles from the main source of labor, Highland Falls, necessitating the hiring of transportation for the employees during the hot or inclement weather. The construction of a modern laundry of sufficient capacity to do the work for all pertaining to this Post cannot be too strongly recommended.

4. *Cadet Mess.*—The cost of board at the cadet mess for the year ending June 30, 1913, was 64.6 cents per day. While this is a slight reduction under the cost for the previous year, the main effort has not been to see how cheaply board could be provided but to provide as satisfactory a variety of good food

as is consistent with market conditions and facilities for serving various articles of food.

Too great credit cannot be given Post Commissary Sergeant Patrick McDonald, U. S. A., for his work as steward of the mess. As he contemplates retirement within the next year, after 30 years service, the matter of securing a competent person to take his place is the most serious problem to be met in connection with the mess. There should be two sergeants of the Q. M. Corps (commissary sergeants) permanently assigned to the cadet mess, one as steward and one as assistant steward. Both should have had experience as cooks or in supervising messes so that they could relieve each other of the exacting and confining work incident to the mess. As nearly all civilians in this line of work now are foreigners, it is almost impossible to secure men who have had the training or experience to supervise such a mess. Comparison of past experience with civilian stewards with that since the detail of Sergeant McDonald is convincing that it is by far most economical and satisfactory to have this mess under the direct supervision of post commissary sergeants.

The mess building is in need of general repairs. No appropriation has been made for this purpose for about six years. An estimate has been submitted for this purpose.

Health and Sanitation.

The health of officers, cadets and enlisted men at this Post has been excellent. The per cent of daily sick for the fiscal year was for cadets 1.88 and for enlisted men 1.53.

Attention is specially invited to that part of the following report submitted by the surgeon relating to football injuries. In considering that 75 per cent of all injuries are due to football during its season it should be recalled that these come from but 40 or 50 cadets who train and engage in this sport, while all other injuries come from the entire corps of over 600 cadets and are principally caused by work in the gymnasium such as athletics, wrestling, boxing, etc., and from mounted drills in cavalry and field artillery. The game of polo in which First and Second Classmen engage also furnishes a few injuries. As injuries from football are so frequently of a serious and permanent character it is a question whether this form of sport is of sufficient value to the corps to warrant its continuance and the tremendous expenditure of time and money involved. Of the 61 injuries due to football and treated at the hospital from September 1 to November 30, 1912, 11 were of a character that are liable to cause future trouble; six were synovitis, three were sprains, one separation of adhesions and one a fracture of fibula. In other words 18 per cent of the injuries were of a serious nature. Football certainly serves no

useful purpose in the physical development or training in the corps as it is voluntary and attracts to its squad only the few who are already physically strong, active and well developed. Its value, if it has any, lies mainly in the interest, entertainment and excitement it affords to the other members of the corps and the thousands who attend its principal contests and are willing to contribute toward its support.

The following extracts are submitted from the report of the surgeon, Lieut. Colonel F. R. Keefer, Medical Corps:

Corps of Cadets.—Health conditions have been very satisfactory. No case of epidemic disease has occurred and no cadet has been seriously ill. At one time, a period of five consecutive days elapsed, during which the wards of the cadet hospital were quite empty of patients. The sick rate has been very low as indicated in the following table:

Sickness Among Cadets

Comparative figures in fiscal years 1910, 1911, 1912, 1913:

	1910	1911	1912	1913
Days lost on account of sickness (hospital and quarters)	8478	5203	5066	3642
Average daily number on sick report (hospital and quarters)	23.20	14.10	13.60	9.98
Percentage of daily sick (hospital and quarters)	5.60	3.24	2.49	1.88
Average daily number sick in hospital	14.93	11.57	9.52	7.95*
Percentage of daily sick in hospital	3.60	2.66	1.74	1.50*

* *Note.*—Thirty-seven cases taken into hospital for a few hours, for refraction of eyes under a cycloplegic, are omitted from this table.

The disease conditions for the greatest amount of disability have been, 1st, injuries (157 cases); 2nd, affections of the respiratory tract (136 cases); 3rd, disorders of the digestive system (134 cases).

With reference to the subject of injuries (which, as shown above, were responsible for the greatest number of admissions to the sick report), Table II which follows, gives some interesting information. It will be noted that injuries received in football are responsible for a very great amount of disability. Moreover, these injuries are largely of a more permanent character, a considerable percentage of them being twists of the knee joint, with resultant synovitis. Such an injury practically invariably leaves a permanent weakness of the joint. Injuries received in football have constituted nearly three-fourths (75%) of traumatisms from all causes during the football seasons of the past four years.

The digestive disorders are mainly gastric and hepatic catarrhs of moderate character, consequent upon hasty eating and neglect to evacuate the bowels regularly.

Football Injuries.

Three months period Sept. 1 to Nov. 30	Season 1910	Season 1911	Season 1912	Season 1913
Number of football injuries, hospital and quarters....	85	41	66	61
Number days lost in hospital from football injuries	198	107	159	268
Percentage of football injuries to *all* injuries in hospital.....	69%	73%	71%	75%
Percentage of days lost in hospital from football injuries to days lost in hospital from all causes.....	25%	13%	27%	46%

The requirements as to the presentation of certificates showing successful vaccination, by candidates reporting at the Academy (page 2, Circular of information relative to appointment and admission of cadets to the Military Academy) is ignored by the majority. Of the new class numbering 168, but 39 presented certificates of vaccination. This neglect constitutes a menace to health, as it is quite conceivable that some unvaccinated candidate may develop the disease shortly after he reports.

The malarial situation shows marked improvement. Last spring 14 cadets had attacks of this disease before June 30. This spring not one case has developed up to date. Only 13 cadets exhibited malarial attacks during the summer and autumn of 1912 and but three of these were new infections. It would seem, therefore, that infected individuals, malarial mosquitoes, or both are now quite scarce. The malarial admission rate among cadets for the nine years preceding the present has averaged 89.3 per thousand. This year it is but 30.3 per thousand, the lowest figure for the decade and no case has been observed since September 10, 1912.

The cadet shoe is still a source of some foot trouble and it is hoped the new Army shoe will be accepted in its stead. A number of plantar growths (verrucae) have required operative measures. Very much less arch trouble has been noted since removal of the rigid metal shank from the shoe sole.

As a result of the notation in my last report, of the fact of progressive deterioration of eyesight in a certain proportion of cadets, the War Department ordered Major Sanford H. Wadhams, M. C., an accomplished ophthalmologist, to visit the Academy and to make a special study of the causes operating to produce this condition. Major Wadhams reported as follows:

1. That existing lighting arrangements are excellent.
2. That about 5% of cadets show progressive visual deterioration.
3. That the cause of such deterioration is largely due to long hours of close work, at the period of life when lengthening of the eyeball is prone to occur.

His principal recommendations were:

1. That study table tops be tinted green.
2. That carbon filament bulbs be replaced by the tungsten type.
3. That until such time as the law may be so amended as to make it possible to fill all vacancies at the Military Academy, the standard of vison for entrance (20/40) be left unchanged.
4. That a minimum visual requirement for graduation be fixed.

Of these recommendations, the second was promptly carried out; the third was concurred in; the fourth was ordered by the War Department, the standard being fixed at "not less than 20/100 in one eye and 20/70 in the other, these defects to be entirely correctible by glasses"; the first will be attended to while the cadets are in camp this summer. One hundred and four cadets are authorized to wear glasses. This number constitutes 20% of the strength of the Corps and gives point to the suggestion made in my last annual report, that only applicants with *normal* vision be accepted.

On the basis of a report made by Dental Surgeon Boak, upon the defective condition of the teeth of new cadets, the Secretary of War laid down the following dental requirements for admission to the Academy:

> "Unless the candidate has at least four serviceable double (bicuspid or molar) teeth, two above and two below and so opposed as to serve the purpose of mastication, he should be rejected. Loss of many teeth or teeth generally unsound is cause for rejection. In the latter case a candidate may be accepted subject to the condition of having cavities filled and mouth put in good sanitary condition by the date set for his arrival at West Point, such conditional acceptance to be noted on the report of the medical examining officer."

Officers and Enlisted Men.—The health of this portion of the command has been quite satisfactory. Only 1.53 per cent of the enlisted personnel has been constantly sick, giving a ratio of 603 per thousand. This ratio compares very favorably with that at the average post.

Sickness Among Enlisted Men.

Comparative figures, fiscal years 1910–1913.

	1910	1911	1912	1913
Total admissions to sick report (hospital and quarters).....	725	622	401	415
Ratio per thousand of command...	1085	825	626	603
Percentage of daily sickness in command.....	2.85	1.81	1.5	1.53
Average daily number sick in hospital.....	14.72	10.72	8.70	8.87

Civilian Population.

The Post has been almost entirely free from diseases of an epidemic character. The effect on the sick rate, of the removal of diseased tonsils and adenoids from the throats of many children and some adults, has been truly remarkable.

Acute infections of this situation have been cut down to a very small figure by this procedure.

No cases of diphtheria, scarlatina, typhoid fever or other serious epidemic disease occurred in this class of the population.

Sanitation.

Save for an occasional memorandum to the quartermaster, of minor sanitary defects needing correction, the surgeon has not found it necessary to make any recommendation, in monthly or special sanitary reports, concerning matters of hygiene or sanitation. This implies a fairly satisfactory condition with respect to buildings and grounds, drainage, sewerage, water and food supplies and disease prevention generally.

The cool weather of last summer and this spring doubtless contributed to a material reduction in the mosquito crop. Comparatively few of these insects are bred on the Post, but occasional swarms appear whose origin is, without doubt, the large swamp east of Constitution Island, on the opposite side of the river. An appropriation for filling that part of the swamp on Government land became available this spring and the work has been done by pumping mud and sand from the river bed. I am of the opinion that no benefit will be apparent from the procedure as the greater part of the swamp, the property of private persons, remains as before.

Rats have been practically banished from the vicinity of officers' houses but are somewhat troublesome in the riding hall and along the river front where they find it possible to obtain shelter and food.

Flies have not yet appeared in large numbers and it is hoped that their propagation may be kept largely under control.

* * * *

Dental Operations.

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By the time a cadet graduates his mouth should have been put in a sanitary condition, but owing to the number of emergency calls from others entitled to treatment this is not now entirely practicable. In order that the entire field of this work may be adequately covered the services of an additional dental surgeon are required.

* * * *

Hospital Buildings. Cadet Hospital.—The administrative portion of this building which dates from 1875 is greatly in need of improvements to bring it up to modern standards of hospital construction and to those of its wards. Floors and walls should be tiled, a large skylight installed over the stairway and the dispensary modernized. When practicable, it is desired that detached buildings or annexes be constructed, for (a) the quarters of the enlisted personnel and (b) for the treatment of epidemic diseases. It is to be noted that except for a small sum for the purchase of flowers and materials for maintenance, this hospital has received no appropriation for the fiscal year ending June 30, 1914.

Enlisted Men's Hospital.—This building has received more generous treatment for the ensuing year than has the cadet hospital. A small wing is under

construction, which will provide for the housing of the enlisted personnel. Important matters still requiring attention are the remodelling of the hospital corps bathroom and the enlargement of the heating plant. The main building is old and only in moderately good repair. When appropriations for the extension of the improvement scheme at West Point are made, a new structure should be erected for the purpose. The new hospital should include a ward for the care of members of the families of officers and enlisted men who require hospital treatment. Such provision is greatly needed here.

The recommendations under the head of 'buildings' have been taken into consideration in the annual estimates for the next fiscal year.

The Library.

The affairs of the library have been ably administered by its distinguished librarian, Dr. Edward S. Holden. It contains about 90,000 volumes and is so arranged, classified and catalogued as to give ready and quick access to its contents. It is growing in popular use by cadets and officers; about 18,000 volumes being drawn from the library by readers during the last year. This does not embrace the volumes, etc., taken from the shelves for perusal, study or investigations while remaining in the library and then replaced, and which are probably more than double the 18,000 drawn volumes.

The new map-room when completed and equipped will be a most useful and delightful addition as it will place the thousands of maps, charts, &c., within easy reach of all, and so placed in excellent light that the convenience and pleasure of consulting them will be greatly enhanced.

The following is an extract from the report submitted by the librarian:

Library Board.—The library board was instituted by S. O. 75, dated April 10, 1912. Its duties are laid down in Regulations U. S. M. A., paragraph 218. It is now composed of the professors of philosophy, of English and history, of modern languages, of chemistry, and the librarian.

* * * *

Users of the library.—The library is available to 124 officers stationed at West Point, 533 cadets and to all enlisted men recommended by their detachment commanders and also to 85 civilians to whom its privileges have been extended by order of the Superintendent.

Accessions.—4,156 books are registered as received between June 20, 1912, and June 20, 1913. Maps, bound volumes of periodicals and various U. S. Government publications are not specially accessioned.

Books owned before November, 1901, have no bookplates and no accession numbers. Since that date every book has a bookplate and the accession numbers beginning at 50,000 (Nov., 1901) extend to 85861 on April 9, 1912. On April 10 the library board was organized. The accessions number of the last book catalogued on June 19, 1913, is 90,497.

Library Bulletin.—Nine numbers of the Bulletin (October-June) have been printed. Each number consists of a list of accessions to the library. Substantially all the books receievd are displayed in a special case in the main room where they remain for two months. The Bulletin is printed in an edition of 1000 copies and distributed to each officer and cadet at West Point, and extra copies are available at the attendant's desk. Its preparation and publication require considerable time and expense. In general, it serves simply as a list of current accessions and has no permanent value. Its numbers are not preserved by the recipients. It is believed that new books are selected by readers from the shelves more often than from the printed lists.

To give the Bulletin a permanent value selected reading lists of books on special shelves should be regularly printed such as the one published in the Bulletin of October, 1912, on Japan, prepared by Professor Holt. The attention of officers and cadets can thus be directed to the real riches of our collections, not merely to the additional currently made to them. Such lists will be, or at least should be, preserved for reference, and they will have an educational value far above mere lists of accessions.

Notable Accessions.—Through the courtesy of Lieut. Colonel Mason Patrick, Corps of Engineers, U. S. A., the Mss. of General W. F. Raynolds, C. E., U. S. A., were placed in the hands of the library (May, 1913) and a selection made of those desired for preservation. Our thanks are due to the heirs of General Raynolds for this privilege.

The Quartermaster General, U. S. Army, has presented to the library blueprints of every army post and reservation in the United States, in the Philippines and in Hawaii—a very useful collection when taken in connection with the photographs of military posts on file in the library.

St. Memin's collection of engravings of early American portraits, 760 in number, was acquired during the year.

Our collection of four volumes of the Swift Mss. was increased during the year by the addition of a fifth volume deposited by Miss Swift, granddaughter of General J. G. Swift, the first graduate U. S. M. A. These letters have been carefully examined with respect to the history of the U. S. M. A. and contain much material relating to the early history of the Army and of the politics of the United States 1818–1865.

Mr. W. Lanier Washington has kindly presented a pardon signed by President Johnson in 1866 to his father, James B. Washington.

Major Piorowski, Imperial German Army, has kindly forwarded an important gift from the Krupp Company of their jubliee volumes in English and German.

Mrs. J. M. Lawton, daughter of General Robert Anderson, U. S. A., has presented various Mss. of her father's (November, 1912) as well as a bronze medal of General Anderson given him in 1861 by the New York Chamber of Commerce and also his badge of the Order of the Cincinnati. The ribbon of this badge was given to General Anderson by the Marquis of Lafayette.

Civil War Pamphlets 1861–1865.—A collection of 1000 such pamphlets was purchased in April, 1913, and will be bound during the summer, the more important numbers separately and the others in 28 volumes arranged by subjects. An important addition to our collections is made in this purchase.

Library of Music.—A considerable collection of musical scores and literature was acquired in 1912 from a list kindly made for us by Mr. Mayer, organist, U. S. M. A., which taken in connection with our former muscial library constitutes a very complete collection.

Library of the Drama.—A similar collection of printed English plays and of books on the drama was acquired in 1913 from a list compiled under the direction of Professor Holt by Lieut. Chilton. A good number of the best French plays is also owned.

Gifts and Loans.—Beside gifts mentioned under the title of Notable Accessions the library has to thank Mrs. K. T. Riggs for 17 volumes of L'Art journal and 21 volumes of Annales du Musee. An interesting exhibit of valuable illustrated architectural books was lent to the library in 1912 by Mr. E. W. Beeson, to whom our thanks are due.

Additions to the Building.—The map-room, so long desired, is now nearly ready to be occupied. It will be found to be of great use in displaying and making available our large collection of maps. Its basement will be used as a packing room and for the handling of new books received. It is expected that the large basement room at the north end of the new Academic Building will be made available for the storage of library books, periodicals, etc. This arrangement will provide ample room for the future.

A very considerable number of obsolete books can be removed from the shelves. These should be selected by a number of persons independently according to the plan previously and successfully employed 1901–1911.

A large number of books are now owned in duplicate and triplicate. This is an advantage in many cases. A considerable number of such books should, however, have one copy removed from the shelves.

Relief Models.—It may be convenient to give here a list of the relief models acquired by the library board although these are not in the custody of the library. They are an important part of the educational apparatus of the U. S. M. A.

List of relief models acquired by the U. S. M. A. since July 1, 1911:

Alaska, size about 4 ft. x 5 ft.
Panama Canal Zone, size 12 ft. 8 in. x 4 ft. 7 in.
Lake Superior Region, size 5 ft. 10 in. x 3 ft. 8 in.
Wisconsin (physiographic) size 3 ft. 9 in. x 4 ft.
Illinois, size 6 ft. 7 in. x 3 ft. 9 in.
Glacier National Park, size 5 ft. x 4 ft. 8 in.
Southern New England, size 5 ft. 7 in. x 8 ft. 4 in.
United States (compiled on a section of a globe 16 ft. in diameter), size 4 ft. 2 in. x 2 ft. 8 in.
Italy (compiled on a true curved surface, by Pomba),
Panama Canal at Gatun, showing the Gatun Dam,

California, size 5 ft. 1 in. x 4 ft. 7 in.
Sinaloa, Mexico, size 4 ft. 3 in. x 3 ft. 3 in.
Region about Los Angeles, Cal., size 3 ft. 5 in. x 2 ft. 5 in.
Mount Shasta, size 1 ft. 11 in. x 1 ft. 5 in.
Palo Alto, San Jose and Mt. Hamilton area (California) size 4 ft. 11 in. x 2 ft. 2 in.
Military reservation at West Point (cardboard relief model),
Constitution Island (cardboard relief model),
Region about Chattanooga, Tenn., size 5 ft. x 6 ft.
Oregon,
Washington,
Melaspina glacier and the region about Mt. St. Elias and Yakutat Bay, size 4 ft. x 7 ft. 8 in.
Bay of North America including the Gulf of Mexico and Carribean Sea, size 6 ft. 7 in. x 6 ft. 1 in.
Niagara Gorge, size 35 in. x 21 in.
Relief map, size 50 in. x 54 in. showing railroads and navigation of the territory east of the Mississippi and south of the Ohio and Potomac rivers.
Big Horn Basin.

The following named models have been ordered but not yet delivered:

Casco Bay after the Coast Survey Chart No. 315,
Boston Harbor after the Coast Survey Chart No. 246,
Hampton Roads after the Coast Survey Chart No. 131,
San Francisco Harbor after Coast Survey Chart No. 5530,
Puget Sound, from a combination of Coast Survey Charts Nos. 6450 and 6460,
New York Harbor after Coast Survey Chart No. 369.

Portraits.—All the portraits of graduates, U. S. M. A., in the Annuals of the Association of Graduates have been indexed and cards inserted in the catalogues as well as all photographs in the Civil War photograph boxes (M.973.797) some 700 in all.

Photographs of cadets in the Cadet Album Class of 1858 that were in danger of fading have been copied by Mr. Stockbridge by the kindness of the department of drawing.

Oil Paintings.—The library has received an oil portrait of Professor Courtenay (U. S. M. A., 1828–1834) copied by Mr. H. M. Luquiens from an original at Charlottesville by permission of the University of Virginia, for which permission our thanks are due. The artist of the original portrait is unknown.

The portrait of General Daniel Morgan, lent to the library by Mrs. Morgan Taylor and exhibited here for several years, was returned to Mrs. Taylor in May, 1913.

Library Statistics.—The following data are of interest. In October, 1912, the library catalogues contained 230 author cards relating directly to Napoleon I. Very complete auction catalogues of second-hand dealers contain some 3,000 numbers. Our collection requires important additions therefore.

Harvard University spends annually $28 per student enrolled to maintain its libraries and in at least three eastern universities this figure is exceeded. The U. S. M. A. expends somewhat over $23 per cadet authorized by law.

Table showing the number of titles of books acquired from September, 1912, to June, 1913:

	Titles
General works, Cyclopaedias, Bibliographies, etc	43
Philosophy, Metaphysics, Logic, Ethics, etc	83
Religion, Religious history, etc	81
Sociology, Political Economy, Law, Administration	380
Philology, Languages	27
Natural Sciences, Astronomy, Botany, etc	202
Useful Arts, Engineering, Ordnance, Manufactures	100
Fine Arts, Architecture, Music, Sports	265
Literature of all countries	505
History—Ancient and Modern, Geography, Travels, etc	494
Biography	249
Fiction	247
Military Works	212
Total	2888

Books in Circulation.—During May, 1913, 1553 volumes were drawn from the library, viz.:

782 volumes by officers,
676 volumes by cadets,
95 volumes by enlisted men.

The average daily number is 50 volumes and yearly about 18,000.

Card Catalogues.—The number of cards in each of our catalogues has increased greatly.

Conclusion.—As in previous years, it has not been possible to do all the work seen to be necessary in the library. The most important items (the selection of new books and their cataloguing) are thoroughly done. Other scarcely less important (recataloguing of old books, frequent examination of the shelves to discover misplaced or lost volumes, revision of our catalogues, especially of serials, periodicals, and government documents, substitution of printed for written cards, binding books and pamphlets, etc.) have been done as thoroughly as the circumstances permitted. It is only fair to record that the entire library force has done its best not only to keep the current work well in hand (it is now and has been since 1901 up to date) but to attack the arrears that were inherited in that year.

Gifts.—Besides the gifts elsewhere mentioned the library has received and acknowledged presents of books, pamphlet, Mss., photographs, maps and engravings from the following institutions and individuals. Our grateful thanks are returned to each of these. * * * * * * * * *

The list of nearly one hundred donors and their gifts is omitted from this report.

Water Supply.

The following report of Captain G. A. Youngberg, Corps of Engineers, in charge of water supply, is so complete that few comments are necessary. The salient points are: supply abundant and good, and lack of filter bed area for anticipated amount of water required in near future.

The bids for extension of water pipes, &c., to separate Popolopen Creek from the purer Queensboro Brook supply when opened were within the appropriation and work will be begun at once.

During the past fiscal year the water consumed at this Post has been drawn exclusively from the Popolopen-Queensboro catchment area. Delafield Reservoir, which is now used as an ice pond, has been supplied largely from "The Cascades" on the eastern face of Cro' Nest, though supplemented when necessary directly from Lusk Reservoir. Round Pond has been maintained at maximum stage as a reserve supply.

Statistics of supply and consumption are as follows: Lusk Reservoir was full and overflowing with the exception of two months and twenty-eight days of which the period from July 16 to August 22 was due to the small run-off in the catchment area. At other times the level was lowered on account of shutting off the supply in order to make repairs to the supply main. The lowest stage occurred on August 10 with 80.25 million gallons in the reservoir, the capacity of which is 92.91 million gallons. The lowest consumption per day, as recorded by the Venturi meter on the effluent main was 1,024,000 gallons on September 3, and the highest was 1,604,000 gallons on June 18, the latter figure exceeding all previous records under routine conditions. The average daily consumption has been 1,103,360 gallons, an increase of 7 per cent over that of last year.

The increased daily average is due in part to recent extensions of the distribution system but in a large measure the high consumption represents either sheer waste or serious underground leakages in the distributing mains. Placing the total number of consumers at 2250 the average daily per capita consumption is nearly 500 gallons. In the City of Washington, D. C., known to be very lavish in its use of water, the daily per capita consumption is only 175 gallons.

As indicated above there has been no shortage of water in its raw state; there has been no difficulty whatever on this score. It is in the process of filtration that the trouble arises since the entire area of the four filter beds is less than seven-twelfths of an acre. Good filtration practice places the maximum permissible rate of filtration in slow sand filters of this character at three million gallons per acre per day, which is equivalent to a total of 1,750,000 gallons for the four filter-beds at this Post when all are in service. This rate is often exceeded for short periods of time, and when it is considered that at short intervals one or more of the beds must be withdrawn from service to permit of cleaning it at once becomes apparent that at the present rate of consumption the local rate of filtration must frequently reach an excessive figure.

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Examinations of raw and filtered water have been continued during the year under the direction of the surgeon. From a bacteriological standpoint the condition of the raw water has been very good at all times although the bacterial count per cubic centimeter shows a wide range. The maximum was 3090 colonies per c. c. on July 12 which was coincident with the diminution in the supply. The next highest number was 246 colonies per c. c. on May 29, 1913. The minimum was 46 on October 8, 1912. The maximum number—3090—is not at all unusual in water-supply works, but in computing the average for the year it has been omitted since it is more than 1200 per cent in excess of the next highest count. Under this method of computation the average count for the year was 134 colonies per cubic centimeter.

The filter-beds have given satisfactory results at all times, the maximum bacterial content per c. c. of filtered water being 48 on July 12, likewise coincident with the high number in the raw water. The minimum content was 0.4 on August 24, and the average of all determinations was 19 colonies per cubic centimeter.

Notwithstanding the small number of colonies per c. c. of filtered water the efficiency or reduction of the local filters computed in terms of percentage is not high and will not compare with percentages often published in water-works statistics. This is occasioned by the high quality of the applied water and is true of all filters of this type. The greater the absolute number of bacteria in the raw water the higher is the percentage of reduction even, when as often happens, the absolute number of colonies in the effluent is still quite high. It is now quite generally conceded that the percentage method is not a fair test, inasmuch as the bacteria in the effluent includes organisms of post-filtration origin as well as those that have found their way through the filter. The German standard, which is now largely used, is on a percentage basis only in those cases where the raw water contains more than 3000 bacteria per c. c. and requires an absolute reduction to 100 colonies per c. c. where the raw water is of better quality. In the light of these conditions the efficiency of the local filters may be characterized as excellent.

The following extracts bearing upon the quality of raw and filtered water supplied to this Post are taken from the report of Mr. A. O. True, Assoc.M. Am. Soc. C. E., representing the New York State Department of Health, who, on April 24-25 made an examination of the catchment area and the entire supply system:

> "The results of the samples from the stream and the reservoir, being the water before filtration, in general indicate a soft water relatively free from turbidity and organic pollution. The water is moderately high in color evidently due to organic stain. The samples were all very low in organic nitrogen—especially organic nitrogen as free ammonia. None of the samples contain more than .006 parts per million of 'free ammonia.' The organic nitrogen as albuminoid ammonia is relatively low for waters from streams and ponds. The moderate amount of mineral nitrogen as nitrates with the virtual absence of nitrates in these raw waters indicate a comparatively small content at the time of inspection of past oxidized organic matters and of decom-

posed animal organic matters. The values for chlorine are practically normal for this part of the State and are further evidence of the freedom of these samples from any considerable animal pollution. These relatively low values for nitrogen and chlorine may have been due to large dilution from rains, which occurred during the middle of the month. The total hardness of about 19 parts per million indicates that this water is among the softest in the State.

"The results of the bacteriological analyses are satisfactory from a sanitary standpoint but, of course, apply as in the case of chemical analyses, only on the condition of the water at the time of sampling. It is probable, however, in view of the general satisfactory sanitary condition of the watershed found to exist from the inspection that the results are reasonably representative of the supply under ordinary conditions of stream flow. The total counts of bacteria for these raw waters appear to be about 100 to 300 per c. c. This is moderate for a supply of this character. The bacteriological tests for fecal organism of the B coli type are satisfactory. These bacteria appear to be present only occasionally in as large test volumes as 10 c. c. One, that taken just below the Forest of Dean Mine, gave positive test for B coli type in one of the 1 c. c. test volumes. This probably was due to the entrance of surface waters from the source of pollution already described. The occasional occurrence of the B coli type in as large volumes of water as 10 c. c. and not in smaller volumes is usually considered to have little if any sanitary significance in connection with surface collected water supplies.

"The water supply under consideration shows by the analytical results a considerable improvement from the period of retention in the Lusk Reservoir. This is noted in the decrease in the color, oxygen consumed (indicative of amount of total organic matters) and bacteria. The physical indications of the superiority of the sanitary quality of the Queensboro Brook supply appear to be sustained by the absence of B coli in this supply.

"The efficiency of filtration, as far as can be judged by analytical results at hand, is very satisfactory. There is a substantial reduction in color, and removal of organic matter from the raw water. The total count of 10 bacteria is exceptionally low for a filtered effluent which has not been subjected to some finishing process as in 'chlorination.' The B coli type were absent in all volumes of filtered water tested.

"In summarization, I would characterize this water supply as being in its raw state much above the average for the State in sanitary and aesthetic qualities, and a being available under natural advantages which make its collection and delivery by gravity relatively inexpensive. The passing of such water through a modern filter, if the latter works are always efficiently operated, should offer a most effective barrier to accidental pollution of raw water from any cause."

Sanitary conditions in the watershed of Queensboro Brook have undergone no change since the last annual report and are excellent. Unfortunately, due to circumstances beyond the control of the West Point authorities, so much cannot be said of the larger and more important area tributary to Popolopen Creek. The construction of the state highway from Highland Falls to Central Valley has introduced elements not at all conducive to good sanitation. Two large labor camps, each housing one hundred or more foreign laborers, mainly Italians and Greeks, have been established in this area, one on the edge of Long Pond and the other near the outlet of Summit Lake. Conditions at Popolopen Pond and at Mine Pond, especially on and about the premises of a saloon maintained near the latter, are far from satisfactory.

This state of affairs could be ameliorated to a very appreciable degree were it possible to enforce to the letter the rules and regulations made by the State Commissioner of Health for the protection of the West Point Water Supply. As a condition precedent to such enforcement the United States must however "pay or tender to the owner of property affected by the enforcement of such rules an amount equal to all damages for making the changes necessary." In the absence of any appropriation directly applicable to this purpose the authorities concerned are powerless to act in a manner that will secure real results. For this reason it is recommended that the annual appropriation for the maintenance of water-works be increased by $500, and by proper phraseology made applicable to expenditures on account of sanitation of the watershed.

As provided in the last appropriation act proposals will be opened on July 14 for the construction of a new intake dam on Queensboro Brook and the extension of the supply main from the present intake to the new dam. By this means it will be possible to exclude the run-off from the Popolopen catchment area while still holding it available in times of emergency or when the run-off in the Queensboro valley becomes too low to meet the needs of the Post. As stated in the original discussion of this project the volume of this brook is not sufficient all the year around to maintain Lusk Reservoir at maximum stage, but it is anticipated that with proper management of the combined storage facilities provided by this reservoir and Round Pond, in conjunction with measures to prevent undue waste in the distribution system, Queensboro water will be available at all times except in years of extreme drought or after a succession of years of less than normal precipitation. Furthermore, should the needs of the Post exceed the present storage capacity Queensboro valley affords several sites for the creation of impounding reservoirs of large capacity insuring a supply of good water regardless of developments in the valley of Popolopen Creek and tributary waters.

Buildings Needed.

Work on the general improvement scheme for West Point as approved by the Secretary of War has come practically to a standstill for lack of funds. With the completion of the chemical wing to the new Academic Building, now in progress, all funds appropriated for these improvements will be exhausted. It is estimated

that it will require about $3,000,000 to complete the improvements desired and needed and this should now be authorized by Congress. Of this amount from $500,000 to $700,000 should be allotted annually according to necessity until the work is finished. This is about the limit of construction that can be handled economically at once without upsetting the progress of regular work at the Academy.

The improvements that are urgently needed now are the following new buildings:

Hotel (see my remarks under Quartermaster's Corps, page 44).
Laundry (see my remarks under Treasurer, U. S. M. A., &c., page 56).
School building (see my remarks under Children's School, page 39).
Eight sets officers' quarters.

These officers' quarters are an absolute necessity. At present twelve married officers are doubled in quarters built for six, and four married officers are living in the Bachelor Building. It is more objectionable here than at other posts for officers to be crowded into such inadequate space. The work of instructors is almost entirely prepared in their quarters and they cannot do this comfortably or efficiently unless they can be free from the disturbances of others than their own families. Eight sets of apartments for married officers are needed. It is believed that if built on Quartermaster plans somewhat modified to harmonize with the other buildings at the Post that satisfactory results can be reached without great cost.

Estimates for the Military Academy for the fiscal year 1914–1915 will include these greatly needed buildings.

Chaplain—Organist and Choirmaster.

The pay of the Chaplain, $2400 per year, is not proportionate to his position and duties at the Academy. It should be raised to $3000, the basic pay of a major in the Army.

The organist and choirmaster, Mr. Mayer, has had a most remarkable influence for good in the Corps of Cadets. His splendid abilities as an organist, his tact and faculty in teaching and training the cadet choir of eighty members leave nothing to be desired. His pay for what he does for the Academy is wholly disproportionate and I urge its increase from $1200, to that of a second lieutenant with an allowance of quarters, fuel and light.

Detachments.

The work of all detachments at this Post is exceedingly heavy and grows more so with the increase in the Corps of Cadets, and extension in buildings and grounds. There is urgent need of an increase in the artillery detachment which now has the same enlisted strength as a field battery but has three times the armament, thirty-five more horses and sets of harness to care for than a regular battery. An increase in this detachment will be asked for in the annual estimates.

Board of Visitors.

The following members of the House Military Committee visited the Academy on January 13, 1913:

Honorable James L. Slayden,
Honorable Lynden Evans,
Honorable Edwin F. Sweet,
Honorable Julius Kahn,
Honorable Daniel R. Anthony, jr.

and the following Senators from the Senate Military Committee visited it on May 10, 1913:

Honorable Joseph F. Johnston,
Honorable Duncan U. Fletcher,
Honorable James K. Vardaman,
Honorable James H. Brady.

Owing to urgent business in Congress the visit of both these committees at the Academy was very short much to the regret of committee members and the authorities at West Point. Very little can be learned about the working and aims of the institution by such brief visits. Committees should remain here on the Post for several days, visiting the academic departments while in operation, acquainting themselves with the discipline, training and instruction of cadets, examine into the business methods of the Academy and learn the needs and plans for future improvement.

Since the Law of March 4, 1909, these visits have been made by members of the two Military Committees of Congress, and they have invariably been brief; too brief to acquire that intimate knowledge of the affairs and needs of the Academy that their importance deserves.

I believe that better results would be obtained if the committee were composed of fewer members of the Military Committees and say five members from civil life prominently connected with educational work, and that this board be required to visit the Academy together so that they may meet and confer together and with the authorities, heads of departments or others here on all matters connected with the administration, instruction and improvements. Such visits should be made while academic instruction is in progress and at a time so that the report of the board may be with the committees when the Military Academy Bill is up for consideration.

Alumni.

The meeting of the Alumni was held on June 11, 1913. Ninety-three alumni visited the Academy during graduating week. It was most gratifying to see so many of our graduates interested in their Alma Mater and especially those who have passed the retiring age. Their graduating dates reached back to the Class of 1847, which was represented by Brigadier General Horatio G. Gibson, retired, the oldest living graduate still on the Army list.

Acknowledgments.

The Superintendent's advisers and assistants in the conduct of the affairs of the Academy are the Academic Board, the Staff and its assistants. Their advice and help have been efficient and loyal, and always given in the spirit of harmony and cooperation for the best interests of the Academy.

To them and all others concerned in the administration of the Academy all thanks are due for such success as has been attained.

Respectfully submitted,

C. P. TOWNSLEY,
Colonel, Coast Artillery Corps,
Superintendent.

To
The Adjutant General of the Army,
War Department,
Washington, D. C.