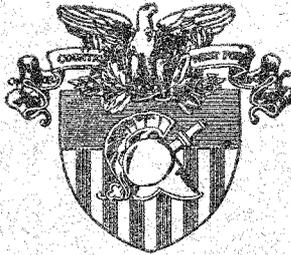


ANNUAL REPORT
OF THE
SUPERINTENDENT

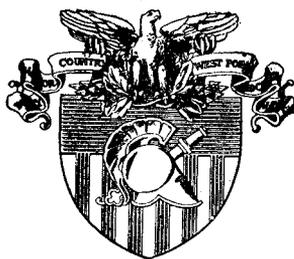


UNITED STATES
MILITARY ACADEMY

1918

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

Headquarters United States Military Academy,
West Point, New York, November 15, 1918.

From: The Superintendent, U. S. M. A.
To: The Adjutant General of the Army.
Subject: Annual Report.

The Superintendent's last Annual Report of date June 30, 1917, recorded the fact of the graduation of the 1st Class of that year on April 20 and also noted the fact that it was ordered that the next senior class be graduated on August 30 following. In preparation for this latter graduation academic work was continued for that class until July 7, selected field instruction being given up to the same date during non-academic hours. After July 7 the 1st Class was given intensive military training until it was graduated on August 30. The heads of the departments of tactics and of practical military engineering with the aid of their assistants and that of officers detailed from academic departments carried out, during the summer, a strenuous and excellent, though short program of practical work, intended to meet the needs of the graduating class and combining it with field instruction of the other two classes. This field work was so arranged as to keep all classes occupied, yet varied so as to maintain interest as well as to afford instruction.

The Commandant and his assistants had a very laborious and unusually difficult task during the encampment, due to the intensive schedule of instruction already referred to, which schedule prevented the 1st Class from performing to the full extent the ordinary camp duties pertaining to it, and hence the resulting necessity of conducting the instruction and discipline of the large 4th Class without the assistance of the 1st Class.

In connection with the summer field training of the 1st Class (July and August, 1917) official acknowledgment should be made of the very excellent and efficient service rendered that class by Professors Mercier and Allard of Harvard University. Through President Lowell, these gentlemen offered their services during the encampment for the purpose of giving added opportunity to the class to acquire facility in speaking the French language. They lodged in the camp, took their meals (except breakfast) with the cadets, accompanied the Corps on the practice march, subjecting themselves both in camp and on the march to practically the same routine as the cadets, thus

making use of every possible opportunity to instruct and familiarize them with the spoken language. The result of this laborious and gratuitous service upon the part of these two gentlemen was of very considerable benefit to many cadets in spite of the continuous strain under which the class was obliged to work during the summer. In addition to the instruction given by these gentlemen, the example of their unselfish and generous work was highly appreciated and produced admirable relations with all their associates, both officers and cadets. A third member from Harvard University, Mr. Underwood, shared, with the two gentlemen above named, in language instruction for about five weeks immediately preceding the practice march of the cadets; his work was efficient and much appreciated.

Shortly after assuming my duties here it became known to me that the upper classes, especially the 3d, indulged in practices toward the entering class that were both objectionable and unauthorized. Nothing, however, sufficiently definite or incriminating to justify action, developed until the physical ailment of one of the new cadets was discovered by the post surgeon, Lieut. Colonel Haskin, to be due to unauthorized exercises; this was about the latter part of August, 1917.

Owing to the habitual and necessary absence of a considerable portion of the Corps and of the officers over them in field exercises, the preliminary investigation required by regulations could not be begun until the following month. These investigations conducted by a board of four officers headed by the Commandant of Cadets, and appointed under Par. 142, Academic Regulations, involved fourteen cadets. The evidence adduced by the investigating board seemed to justify and, considering the intent of the regulations, to require the trial by court-martial of seven 3d classmen for violation of regulations regarding hazing. Two members of the 1st Class also were tried by court-martial in the latter part of August; their offenses were in no way connected with the question of hazing.

These investigations and the resulting trials took much time, added much to the labor of a large number of officers, including myself, and materially interfered with the proper frame of mind of the cadets involved toward their studies.

That conditions exist which render such trials necessary is very regrettable, but they are still present in the Corps to a certain extent, though being gradually eliminated. Unauthorized treatment of the entering class has never been entirely suppressed, though such suppression has been several times reported. The interacting influences involved in trying to bring about the right result in eliminating improper interference are very varied and complex and it is exceedingly difficult to correlate them to the proper end without injury to

and elimination of certain elements of discipline and training which are of unquestioned importance; however, the result should and can be obtained. Returning to duty at the Academy after an absence of several years it is perfectly evident that the conditions referred to have improved in certain respects. This result is largely due to the efforts and influence of the late Commandant of Cadets, General Guy V. Henry, and, I am informed, of his immediate predecessor, both of whom, while attempting to uphold strict discipline, have tried to appeal in a manner not before so fully attempted to the common sense and manliness which should characterize cadets.

The efforts of the commandants, just referred to, which I found being tried out when I returned here in June, 1917, and which I understand met the approval of the then Superintendent, were based upon the idea of placing responsibility for the proper discipline, military bearing and conduct of the lower class for the first year more fully into the hands of the upper classmen than had been the practice at the Academy. It was soon found that such responsibility and especially the direct exercise of this responsibility could not be left to upper classmen generally. It was accordingly attempted to specify as nearly as possible the permissible regulations that upper classmen would be allowed to enforce upon the 4th Class; the orders and instructions which they might give them. The system was not intended to allow upper classmen to impose any punishment upon the new men, but upon failure of the latter to obey and observe repeated instructions, they were to be reported and dealt with by the tactical officers (commissioned officers). As a matter of fact, the authority given the upper classmen purely for correction purposes, in some instances glided imperceptibly into ability to inflict punishment.

The authority given upper classmen under the system now being tried over the 4th classmen for the purpose of more rapidly bringing about and developing the proper military bearing has been more and more concentrated in the hands of a small number of cadets, until now it is intended to have it rest mainly with the cadet captains and a few other cadet officers and noncommissioned officers to assist them. As already stated this system has been attempted in earlier years, but not carried to the same extent as in the past three or four years with regard to the extent of authority over the new men granted to upper classmen. The results which might have flown from the recent efforts have been very materially handicapped in the past two years by the early graduation of the 1st Class, which placed the delegated authority into the hands of the less experienced and younger cadets.

As a brief summary of the more distinct phases through which the treatment of the entering classes at West Point have passed since our Civil War, it may be stated as follows:

1st. After the Civil War and for approximately thirty years the upper classes were given no control over the 4th Class *out of ranks* or when they were off duty; practically, during that time, between the date of admission (early June) and the beginning of the new academic year (September 1st), the upper classes developed and practiced many forms of control and treatment of the 4th Class not officially authorized; this was especially so during the summer encampment, when usually only the 1st and 3d classes were present, the 2d Class being absent on furlough. The practices then usually indulged in were designated under the general term of "devilling plebes." It was for the most part harmless, frequently highly absurd and often amusing to the "plebe" as well as to his tormentor. In addition, however, to the "devilling" for many years it was the custom for the "plebes" to perform services for the upper classmen which are now properly termed "menial"; this custom came about very naturally, for it was the plebes assigned duty to police the camping grounds and this policing was readily extended to putting the tents in order, seeing that the buckets were filled, etc., etc., but none of these things were ever officially recognized by the authorities. In this first period there developed a certain responsibility on the part of the 1st classmen; they, as a rule, considered themselves too dignified to indulge in the so-called "devilling" of plebes and exercised very material influence in preventing the 3d Class from carrying these annoyances beyond what was considered harmless limits; however, the 1st classmen themselves, as already stated, made exactions of the 4th Class that were unauthorized, such exactions, as later became very serious offenses. During the time above referred to, 1865-1895, at occasional intervals there were such developments in the treatment of 4th classmen that investigations were held, unpleasant facts developed and spasmodic efforts made to suppress the annoyances to which they were subjected. During three-fourths of the period above specified there prevailed a very considerate rule which was generally followed and which was to cease all out-of-ranks annoyance of 4th classmen after the beginning of the academic term, September 1st—this because any interference then was likely to handicap academic efforts and result in deficiency or at least detrimentally affect class standing.

The 2d distinct phase in dealing with the treatment of new cadets involved, in fact consisted in an effort to regulate and control the practice by making the 1st Class officers responsible that the new men were not interfered with by the older cadets. This attempt placed entirely too great a responsibility upon the 1st Class officers; it required them to control the actions of their own classmates as well as of the 2d and 3d classes. This effort resulted very unsatisfactorily and almost developed mutiny among the 1st Class officers. This second phase of dealing with the subject ended with the class of 1900.

Between 1900 and 1910 the problem was attempted to be dealt with through new inquisitorial and extremely rigorous regulations, giving the Superintendent greater and more arbitrary power. During this period (1900-1910) little assistance was asked of the cadets themselves in trying to suppress the custom, which had since 1900 come to be universally designated as "hazing." Between 1890 and 1910 the generally observed rule of never annoying the "plebes" after leaving the encampment had been gradually departed from; with this change there were introduced many new forms of annoyance. Some of these new forms were extensions and exaggerations of exercises required of the new cadets in ranks and could be practiced upon them in ranks as well as out.

Since late in 1890 there has been a consistent effort made in the tactical department to have all cadet officers, especially of the 1st Class, exercise their legitimate authority as officers with reference to all classes to a fuller extent than formerly and in proper, dignified and impartial manner. Also since the same date there has been a greater and more consistent effort made to rotate the appointments for command among the members of the 1st Class, thus giving a greater number of cadets official responsibility for a short time at least. It may be stated that no greater success met the efforts to discontinue "hazing" under the very rigorous regulations provided in 1902, than had been attained before and since. At no time has the practice been entirely suppressed. The very stringent rules and regulations adopted in 1902 were considerably modified in 1911 and in their modified form they are still in force, much more stringent than any that existed prior to 1900. Under these regulations and with the watchfulness of the tactical officers and with the unauthorized, but not prohibited privilege permitted the upper classes of exercising certain control over the 4th Class, the discreditable forms of hazing have been few since 1911 until last year, as mentioned above. The beneficial change toward conferring more responsibility upon the cadets selected for officers, which, as stated above, commenced late in 1890, and has continued ever since, naturally and gradually led to the extension to them of more authority over new cadets than had been previously allowed, especially in extending it to certain control over the new cadets when off duty. This extension came very gradually, and in many cases at first this control was really not authorized, but it was countenanced; thus by continuing custom many acts of authority came to be considered by the older cadets legitimate. Moreover, at intervals, since 1900 some of the Superintendents and Commandants have orally, and later in typed notices, authorized certain rules in control of the new cadets by designated members of the upper classes, which rules were never inserted in the printed and officially adopted regulations of the Academy. Of course, all such rules were intended to hasten the military training of the new cadets and to bring them to

the proper state of discipline, carriage, etc., and no doubt assisted to this result. Under the administration of the Academy in 1914 rules were more officially and openly made, granting to certain cadet officers specified authority over new cadets, far broader than had ever before been given. This broader authority I found, as already stated, in operation when I assumed duty here in June, 1917, and it has been continued to the present time. Under the authority thus officially granted it is attempted to continue out of ranks and at all times that observation, correction and instruction of the new cadets necessary to produce in them in the shortest time that soldierly bearing and manner which is so characteristic of the West Point cadet. The system of controlling new cadets now in existence and which has just been outlined attempts to hasten the physical instruction of the new cadets by having slovenliness and laxness corrected at any and all times and places, thus putting the new class with regard to the certain upper classmen in much the same relation as exists between officers and enlisted men.

From the outline above given it will be seen that the practice of "devilling" or "hazing" plebes has at all times been intimately connected with the exercise of legitimate authority over them; indeed, for thirty-one years after the Civil War a large proportion of the "devilling" practices were countenanced by the authorities and no serious efforts made to suppress them, except the cases in which the practices were carried to a discreditable extreme. In a similar manner, almost up to the present time, a limited countenance has been given to certain illegitimate exercises of authority over the new cadets; this *undue* authority has, however, more and more taken the form of an *extension* of legitimate authority, such as unnecessary *harsh*, even *scolding* commands, requiring unnecessary promptness on the part of the new men, compelling an exaggerated military bearing, an assumption of correctional authority on the part of those not entitled to it, etc., etc.

It is proper to state in connection with this question that the treatment to which the entering classes at this place have in the past been subjected cannot be compared or judged by the treatment meted out to the freshmen at other institutions. There is and has always been motives involved here that have no counterpart elsewhere.

1st. The fact that many practices have been *countenanced*, though not openly authorized, shows that the controlling authorities recognized advantage in them: one main advantage consisted in the quicker attainment by the new man of the mental attitude and physical bearing of a West Point cadet. If instruction were given to and obedience compelled only while in ranks or on duty, the plebes would be a far longer time in reaching a fitness for association in the ranks of the upper classes. That fundamental principle of discipline,

"willing obedience," is far sooner acquired by practicing it out of ranks as well as in, both on duty and off.

The results of the practices countenanced by the authorities, many of which were never openly authorized, placed the new cadets under what was practically an "intensive training," and thus they reached a certain military fitness much quicker than would have been accomplished otherwise. Another advantage was, that in the acquisition of a proper spirit of obedience, a true democratic idea of worth based upon personal character was also acquired.

2d. The practices indulged in by the upper classes in their relations to the entering class are based upon motives not generally at all fully appreciated, in many instances not appreciated at all. The pride of the cadets in the Institution and their "esprit de corps" are unexcelled at any institution in the world and equalled by few if any. Many of the customs that prevailed in the treatment of the new cadets were based upon the idea that it was for the "good of the plebe" and for the interests of the Institution. In other words, the upper classmen shared the opinion above attributed to the authorities, that there were beneficial factors involved in the regime to which the 4th Class was subjected, and which, upon the whole, was only an effort to bring about quick military fitness in these new men. It has been the case, almost without exception, since the Civil War, that the new cadets who have received the greatest and closest attention, both authorized and unauthorized from the older cadets, have been young men who were slow to acquire, or at least to display the proper military spirit and bearing. Just in proportion as the new man has shown promptness, neatness, and willingness to obey, to conform to the obligations of custom, as well as to printed regulations, his path has ceased in roughness.

It is a conclusion from the observation of the writer that the beneficial factors of the unauthorized exercise of authority by the upper classes over the lower class for the first thirty years after the Civil War was mainly directed toward creating a spirit of discipline, obedience and a greater democratic fellowship among the members of the Corps, less attention being given to the appearance and physical bearing of the men; while in the past twenty-three years these unauthorized factors have been directed more largely to the appearance and physical qualities of the new men. This change in the influence exerted by the upper classes upon the lower is largely accounted for by the material changes in the conditions at the Academy, which began about that time and have continued since.

A most competent physical instructor had been secured a few years earlier who instituted an excellent system of gymnastics and later calisthenics; a new gymnasium was completed early in 1893 and a new academy building a couple

of years later; about the same time, 1891-92, outside contests in both baseball and football were introduced, and later other sports. With athletics, gymnastics and sports came an increased number and variety of garbs suitable to the exercises. By this time too, considerable additions had been made to the military uniforms of the cadets, which, for twenty years after the Civil War, were less varied; the same dress then being used for a far greater number of purposes. All these changes brought about greater physical distinction between individual cadets and this undoubtedly caused greater attention, both authorized and unauthorized, to be given to physical characteristics of the new cadets.

The treatment of the entering classes that has prevailed at the Academy ever since our Civil War has at intervals developed into discreditable acts, acts which never ought to have been committed or permitted. These acts were never approved by any considerable number of the cadets or countenanced by the authorities except with regard to one practice, that of fist fights, in which unruly new cadets were sometimes compelled to engage. These fights were conducted according to prize ring rules and were fair enough when arising between members of the older classes, but when one of the combatants was a "plebe" he was at a disadvantage generally so evident that it is now a wonder that the practice ever prevailed at the Academy; it ceased a little less than a score of years ago.

The "devilling" or "hazing" acts going beyond the established cadet code existing at any particular period were never approved by the Corps and when such acts became known to the authorities as they at intervals did, investigations were held, sometimes the offenders were dismissed or severely punished and more or less serious efforts made to suppress all interference with new cadets when they were off duty. At all times the authorities of the Academy have known that complete non-control and non-interference with the new cadets by the upper classmen would result in a far less rapid development of them in their military accomplishments. The authorities have not intended or at least not desired that the new cadets should be subjected to unnecessary annoyance, but on the other hand they have desired not to lose the soldierly results quickly brought about by the sharp disciplinary control of the new men both in and out of ranks. The difficulty has been and is to prevent this control from being carried too far and from being exercised by unauthorized parties. The prevention of undue control involves many difficulties:

- 1st. Is the tradition that it has *always* been exercised and is a beneficial factor.
- 2d. Each class knows that its predecessor indulged the custom.
- 3d. Many visiting alumni, with sons in the Corps, openly advocate, or at

least see no harm in the practice and often attribute specific beneficial results in their own experiences to it.

- 4th. The families and especially the female friends of the older cadets are all assured by the latter that they themselves were greatly benefited by the practice; the former are accordingly fully convinced of its benefits and condemn any efforts to suppress it.
- 5th. The new cadets themselves, with very few exceptions, in a short time realize that the military discipline to which they have been subjected has improved their physical bearing and appearance and are much disinclined to give information that would involve an upper classman.
- 6th. The fact that "hazing" in various forms has been and is practiced at so many educational institutions without most of the saving features which attach to the practice here.

The foregoing brief historical reference to the treatment of the entering classes which has so long prevailed at the Academy has been made because little official explanation or recognition of all the conditions involved in dealing with the practice have ever been given.

The foregoing outline has not attempted to bring out *all* the complicated interactions that are involved in trying to make use of upper classmen in disciplining the new class so as to retain what is beneficial and desirable and eliminate what is objectionable.

Two conditions until recently have been present in the practice, either of which is sufficient to demand that it should not have been allowed to continue:

1st. Its continuance involved a distinct non-enforcement of all the academic regulations.

2d. There was afforded opportunity for discreditable, over-bearing, and inexcusable acts upon the part of upper classmen whose characters were not strong enough to save them from such misconduct.

In conclusion it may be said that the method now being pursued in giving the early disciplinary training to the entering class is based upon sound principles and promises to retain nearly, if not all, the benefits of past methods while eliminating the objectionable features of the past.

In brief, this method may be said to consist in bestowing recognized and specified authority over new cadets upon certain upper classmen, to be exercised at all times; this authority taken in connection with that permitted in ranks, to be sufficient to bring about the usual rapid military development of the new men, all other attempts at control of these men to be punished to the extreme limit of the regulations relating thereto. The regulations themselves may need some modification to facilitate the accomplishment of their intent. The

method just referred to, differs from the past in that it *officially authorizes* such control of the new cadets by the older ones as to bring about the desired results which were formerly only reached through unauthorized control, this control being *countenanced* but never openly authorized.

The success of the method now in operation will depend upon whether men as young as our cadets can be given the authority outlined for them without abusing it themselves, or countenancing its abuse by their associates. As stated above, the war emergency which has hastened the graduation of the classes for the past two years has prevented any test or conclusion with reference to this point.

It is not inappropriate here to refer to the fact that the drill masters usually selected to instruct the entering class are often criticized, frequently justly so, for a rasping and unnecessary harshness of manner. While this defect has been largely removed in recent years, it is still present to a certain extent and the main reasons it still continues is, that these drill masters have themselves acquired a very snappy, brisk manner of executing commands; they attempt to bring this about in their pupils; their commands given in the quiet, dignified manner of more mature men fail to have the desired effect, for the very simple reason that they are young and less impressive than older men. They, therefore, unintentionally and almost unavoidably adopt the more active manner, which has been so often criticized. To accomplish the results as promptly as is done here the recruit needs to be aroused to prompt and strenuous effort. A dignified, quiet manner, accompanied by age and experience may sufficiently awaken the recruit, but the same manner in a younger person often fails of this result.

PERSONNEL OF THE ACADEMY.

Since the date of my last report June 30, 1917, a new permanent member of the Academic Board has been secured through appointment of Lieutenant Colonel C. C. Carter on August 14, 1917, to succeed Colonel W. B. Gordon as head of the Department of Natural and Experimental Philosophy. This officer undoubtedly sacrificed personal inclination, interest and ambition in accepting the appointment at this time. His action resulted from a high sense of duty that he ought not to decline service at the Academy, when such service was requested by the War Department, though apparently to the evident detriment of his personal advancement, the Academy is fortunate to have secured his services. The official personnel of the Academy on June 30, 1917, and at the same date this year is shown in the list below—officers and others in prominent positions on duty at the Academy:

	1917	1918
Superintendent and Staff.....	5	*5
Professors, permanent.....	6	7
Professors, by detail from the Army.....	4	†2
Professors, associate, detailed.....	2	2
Professors, assistant, detailed.....	11	8
Commandant of Cadets and tactical officers.....	13	11
Master of the Sword, Instructor of Military Gymnastics and P. C. . .	1	1
Instructors and other officers.....	20	35
Medical Corps.....	4	6
Dental Surgeons.....	2	2
Medical Corps, Instructors in Military Hygiene from March 18 to May 8.....	4	6
Chaplain.....	1	1
Librarian.....	1	1
Civilian Instructors of Languages.....	2	2
Civilian Instructors of Fencing and Military Gymnastics.....	3	4
Teacher of Music.....	1	1
Organist and Choirmaster.....	1	1
Pay Clerk.....	1	0
Total.....	\$82	‡95

* Includes detailed Professor of Military Hygiene.

† One vacancy — Professor of Law.

‡ Number of officers relieved in June who performed duty during the academic year, 27.

§ To the above should be added officers who performed duty during the academic year as follows:

Relieved in May and June for duty at training camps.....	42
Professor retired in May.....	1
On duty with troops.....	1
Officers relieved—no successors appointed.....	10
Civilian Instructor of Modern Languages resigned on June 30.....	1
Total.....	55

THE CORPS OF CADETS.

The number of cadets under instruction at the Military Academy at the date of the last Annual Report was 898. Of this number 150 passed out by graduation on August 30, 1917, one on October 27, 1917, and 137 on June 12, 1918. During the past academic year there have been about the usual number of cadets discharged for deficiency in studies, resignations, etc., as shown below:

Discharged for physical disability and deficiency in studies.....	103
Resigned.....	16
Died.....	1
Dismissed.....	7
Dropped.....	2

The number of cadets admitted in June, 1918, was 317, number admitted from July 1 to August 6, 1918, inclusive, including ex-cadets who qualified on re-examination was 117, making a total of 434.

The status of the Corps of Cadets on June 30, 1918, was as shown in the following table:

2d Class	225
3d Class	277
4th Class	355

representing a total strength of 857.

Recapitulation of candidates' examinations, March, 1918, June, 12-14, 1918, July 1, 1918, Cuban Candidate, July 10-12, 1918:

Qualified mentally and physically and admitted	423
Disqualified mentally, qualified physically	647
Disqualified mentally, failed to report for physical examination	15
Qualified mentally, disqualified physically	27
Failed to report	318
Disqualified mentally and physically	103
Qualified alternates for whom no vacancies existed	63
Qualified mentally, declined	2
Withdrew	37
Qualified mentally, failed to report for physical examination	10
Qualified mentally and physically, declined	4
Failed to complete examination	100
Qualified mentally, withdrew	1
Declined	1
Ex-cadet, to report August 30, 1918, to join 3d Class	1

Total nominations 1752

Of the total number of qualified candidates up to August 6, 1918, 171 qualified at the mental examination and 252 were admitted on satisfactory certificates from accredited educational institutions under the provisions of General Orders, No. 19, War Department, 1915.

At the beginning of the academic year, September 1, 1918, there were 940 cadets in the Corps divided among the classes as follows:

Second Class	226
Third Class	285
Fourth Class	429

The academic work was begun as usual on that date with the expectation of graduating the 2d Class in June, 1919, and the other two classes in succeeding consecutive years, but on October 3d orders were received from the War Department that both the 2d and 3d classes were to be graduated on November 1st, and that the courses of instruction were to be arranged for graduating the

4th Class in June of next year. The month of October was devoted to giving the 2d and 3d classes the maximum amount of the most useful instruction in the limited time, and the two classes were graduated on November 1.

It was the intention of the War Department after this graduation to fill the Academy, to the capacity of its accommodations, by admitting 800 new appointees who would take up the course prepared for the 4th Class with the intention of graduating them all in June, 1919. Modified and greatly reduced requirements for admission were made and under these requirements there have been admitted, beginning on November 2 up to the present writing (November 15) 263; the number still to arrive is not known.

The reports of the heads of the different departments below appended briefly outline the operations of their departments between June 30, 1917, and the same date this year.

The instruction in the tactical department during the period of the encampment of 1918 was very similar to that for the summer of 1917. The theoretical and practical instruction in this department has been carried on with the proper intent of accomplishing the maximum preparation of the graduate cadet for immediate service. The report of the Commandant of Cadets, hereto appended, gives no adequate conception of the nature, importance and variety of the work accomplished in the department. The schedule of the work of the department was outlined in this officer's report for the previous year must be consulted for this purpose. During the summers of 1917 and 1918 the practical instruction was directed as far as practicable, along the lines of useful knowledge of the front line work of the present day and the schedule above referred to was improved and extended. In the summer encampment of this year (1918) only one-half of the 2d Class was permitted to go on leave at the same time, so that one-half of the class was present in the encampment to assist in the training of the 4th Class. This arrangement worked very satisfactorily. For the first time, also, the 4th Class was segregated in camp from the other classes. Under the conditions then existing, this proved to be a good arrangement.

Between June 30, 1917, and September 1, 1918, several professors of the Academy were wisely given opportunity to observe and study military instruction and operations as conducted at the present time on the continent of Europe. This experience has been most instructive and expanding to the officers enjoying it and will accordingly accrue to the benefit of the Academy. The foreign trip was made by Colonel Echols and Lieutenant Colonel Carter during the summer of 1918, while academic exercises were suspended. Colonels Fieberger, Willcox and Lieutenant Colonel Stuart made the trip during the academic year 1917-18. Owing to the early graduation of the Class of 1918, Colonel Fieberger's regular services were not required here during his absence. The

other officers, Colonel Willcox and Lieutenant Colonel Stuart, were absent from the Academy only at such time as their services could be spared without detriment to the instruction given by them.

BUILDINGS.

The Military Academy estimates submitted to Congress for the fiscal year ending June 30, 1919, carried items for new construction amounting to \$5,354,000.00. These estimates were based upon a report made by a board of officers, approved by the War Department, as to the buildings necessary to comply with the Act of Congress, May 4, 1916, largely increasing the number of the cadets at the Academy.

For the fiscal year 1918-1919, Congress made appropriations for certain selected items, all of which are noted in the report of the Quartermaster hereto appended.

The many changes in the personnel of the constructing offices here and the difficulty of securing the necessary skilled assistance in such work has greatly delayed the preparation of drawings, plans, etc. However, two of the most important pressing pieces of construction are in progress. The laundry, for which sufficient additional money was added to the previous appropriation to carry out the revised plan, is now well under way and, but for the difficulty in securing the necessary metal work and in procuring labor, would have been nearly, if not entirely completed by the present time. It will probably not now be completed until early spring.

The plans for the additional wing of barracks have been prepared and specifications for the work will soon be completed. The basement and foundation space of this wing have to be blasted from solid rock; this foundation work is now being done by day labor under the Quartermaster Department.

A new garage rendered necessary by the barrack construction, is now nearly completed; all bids for this building were in excess of the appropriations and its construction has been accomplished within the appropriation by the construction office of these headquarters. During the year an excellent piece of construction work was completed at the cadet mess hall by the Quartermaster Department. This work consisted in a conversion of the interior uncovered space, between the wings of the building, into additional mess rooms. This gave additional necessary accommodations for 275 cadets and was much preferable to the proposed method of enlarging the mess hall by occupying space in the academic building across the street. The mess hall can now, with the close seating, accommodate 1100 cadets, and the hall by slight modification will be able to accommodate 1200 cadets in all; this, however, will be the utmost limit and will require the closest seating.

The Quartermaster and Commissary of Cadets, Major Dixon, during the past year has had a most difficult and trying problem in securing and retaining the necessary labor for operating the cadet mess, but he has handled the situation admirably and at all times with discretion.

Besides the work above noted, the constructing office has prepared plans for the necessary additions to the artillery and cavalry barracks, the additions being in accord with the buildings as present finished. Also plans for additions to the artillery stables and gunshed. Plans for the enlargement of the cadet camp and supplying it water, sewer drainage and electric lighting have been prepared and bids asked for certain portions of the work.

The barrack accommodations for cadets are precisely as stated in my report of last year. With two cadets to each room, 710 can be accommodated and with three to a room, 1065 can be cared for; with certain modifications that can be made in the north barracks the total number of cadets can be carried, three in a room, to 1100. The wing of south barracks upon which construction has now begun, will afford 96 additional rooms. When this wing is completed there will be a total of 451 barrack rooms; the date of this completion cannot now be given with definiteness.

In my opinion, the extensive building program for West Point for which estimates have been submitted to Congress for many years past, should be carefully reconsidered in connection with our future military establishment and policy; there is no decision with regard to either of these at present. The writer over 14 years ago, in the Service Journal advocated and called attention to the necessity of establishing another educational institution, on West Point lines, for the preliminary education of officers when the number here should exceed a specified limit; that limit with the maximum now allowed West Point has been exceeded, this necessity was based by the writer: 1st upon the topographical unfitness of West Point for the proper modern practical instruction of large numbers, especially so, as regards the illustration of the combined operation of different arms.—2d. Upon the difficulty of applying the West Point system to large numbers.—3d. Upon the certainty that the near future would make it desirable to have greater educational facilities than were here afforded.

All three of these reasons now emphasize the necessity for one or more other West Points; the first and third are now particularly applicable.

The necessity for such other school or schools should be carefully considered and arranged for in connection with the possibilities and limitations of West Point, and just as soon as a decision is reached as to the probable military policy and necessary military establishment of the country.

PHYSICAL TRAINING.

The head of this department, Colonel H. J. Koehler, was absent on detached service from May 13, 1917, until September 16, 1918. During that time, Major W. H. Wilbur was in charge of this training until relieved from duty last June. He performed the onerous duties devolving upon him in the most satisfactory manner, to the credit of himself and to the benefit of his pupils. After the relief of Major Wilbur the work was satisfactorily supervised by Major W. E. Chambers. The civilian assistants in this department have been most zealous and efficient in their work and deserve equal credit with the officers. Since the date of my last report an additional civilian assistant has been appointed in this department, Mr. Cavanaugh, whose services have been satisfactory.

DEPARTMENT OF TACTICS.

The report of the Commandant of Cadets is herewith given in full:

On June 14, 1917, 357 new cadets reported.

Due to the increased number of cadets the camp, barracks, mess hall and the gymnasium were overcrowded. Provision has been made for the enlargement of the camp and the mess hall and a partial enlargement of barracks. The additions provided for the barracks and mess hall are not, however, sufficient for the authorized strength of the Corps. No provision has been made for increasing the gymnasium—this is essential as it is already badly overcrowded.

Last year recommendation was made to provide for the necessary increase in the number of horses for cavalry and field artillery. Provision has been made for increasing the field artillery stables but not the cavalry. A new stable for 250 cavalry horses is urgently needed. Unless this is obtained the amount of riding instruction given to cadets must be curtailed. This is already limited and should not be further decreased.

The general discipline of the Corps has been satisfactory and their attention to work and interest in military instruction most satisfactory.

The annual practice march and maneuvers at the end of the 1917 encampment was of twelve days' duration instead of six as has heretofore been the case.

One class of 137 members was graduated on April 26 and another of 150 members on August 29; both of these classes graduated with less than the usual four-year course. It is believed, however, that from a standpoint of practical military instruction they were fully as well prepared as other graduated classes; this due to changes which have been made in the methods and scope of instruction as referred to in the last annual report of the Commandant of Cadets. Continued effort is being made to make further improvement and to develop in the cadet self-confidence, the art of instructing and ability to command.

The department has been greatly handicapped throughout the year by the

relief of many capable officers. It has been greatly assisted, however, and the instruction of cadets much improved by the use in this department of officers regularly detailed for duty in academic departments.

DEPARTMENT OF MATHEMATICS.

The important work of this department becomes more and more onerous with the increase in the number of cadets. The thorough instruction necessary to maintain the standards of the past will be exceedingly difficult to secure under existing conditions. The following extract from the report of the head of the department shows the number of members in his two classes and the numbers anticipated by him for the next academic year:

Instruction.—The 4th Class course was in all respects the same as that of the previous year, alternating with surveying during the last 66 days of the academic year. The 4th Class was the largest in the history of the Academy having begun its studies in September with 363 members.

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

	No. in Class	Deficient	Turned Back	Discharged
December.....	353	36	0	36
June.....	308	16	1	15

The 3d Class course was in all respects the same as that of the previous years, the prescribed course requiring recitations daily from September, 1917, to June, 1918.

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

	No. in Class	Deficient	Turned Back	Discharged
December.....	238	3	0	3
March.....	231	5	2	3
June.....	226	5	0	5

The new academic year will begin in September with a 4th Class in mathematics of about 360 and a 3d Class of about 300. This will make about 660 students under the supervision of the department. There should be assigned on September 1st for duty in the department an experienced and able officer as associate professor together with 22 instructors.

This is in accordance with the allotment in Memo. 22, Hqrs., U. S. M. A., March 15, 1918, at which time there were 21 officer instructors (an associate and 20 instructors).

DEPARTMENT OF CIVIL AND MILITARY ENGINEERING.

The operations of this department are shown by the brief report of the head of the department as given in full below:

Because of the early graduation of the class, the course in civil and military engineering was a condensed course, as it had been the preceding year. It consisted of forty lessons in civil engineering and forty-two lessons in military

engineering. The class numbered 137 members, all of whom were reported as proficient in the course.

The instruction was given by the instructors who were transferred to this department from the departments which had the class under instruction during the first part of the year. In the course in military engineering the textbooks were the various pamphlets issued by the War Department, illustrating the conduct of the present war. Lectures on the war and on observations made abroad formed a part of the course.

It was my privilege to be ordered abroad as an observer in October, 1917, where I remained until the latter part of March, 1918. Through the courtesy of the commanding general of the American Expeditionary Force, and commanders of the Allied Forces, I was given the opportunity to visit both the British and French fronts, and also a number of the schools of the American, British and French armies.

During my absence my department was under the direction of Lieut. Colonel George R. Goethals, Corps of Engineers, who laid out the course which was followed this year.

DEPARTMENT OF NATURAL AND EXPERIMENTAL PHILOSOPHY.

As stated in the early part of this report, Lieut. Colonel C. C. Carter became the head of the department and took charge thereof in the latter part of August. His report is hereto appended in full.

By virtue of his appointment as Professor of Natural and Experimental Philosophy, and in compliance with the orders of the Superintendent, the undersigned assumed charge of the department on August 27, 1917.

The following officers were then on duty in the department: Captains H. Dunwoody, C. A. C., W. K. Dunn, C. A. C., Thompson Lawrence, Infantry, A. G. Thurman, Cavalry, J. W. Jones, C. A. C. Captain Dunwoody was relieved from duty in the department on August 27, 1917; no further changes occurred in the instructing staff during the year.

Upon taking over affairs of the department a careful inventory and survey of its property was undertaken. Much unserviceable and obsolete apparatus was on hand. All unserviceable property has been disposed of in accordance with regulations. A large amount of obsolete apparatus which has not been used in many years and which would never again be used was likewise disposed of in the usual manner. Certain additional apparatus formerly valuable but now of questionable utility has been thoroughly overhauled and carefully stored. This can be retained indefinitely without interference with the conduct of the department and will be so retained until an opportunity is offered through which it may be disposed of to the interests of the Government.

The astronomical instruments in the main and field observatories and the reflecting telescope mounted on the East Academic Building were not in good condition. Many of the steel parts were badly rusted and the services of an expert mechanic were utilized for a period of approximately ten days in removing rust, cleaning, oiling and slushing them. They were all put in proper condition to prevent further deterioration and heavy canvas covers were made and fitted to them.

The condition of the old equatorial telescope and attachments mounted in the field observatory was such as not to warrant a large expenditure of funds on them. The steel parts were cleaned and slushed. These instruments have not been used over a long period of time, probably as much as 25 years.

The dome of the main observatory was badly in need of covering, and there were various leaks through the walls and gutters of this building. Funds were not available for its repair. An estimate has been submitted for \$3,000 to cover the cost of the necessary repairs. The field observatory in which the old equatorial is mounted is in bad repair, but it is believed an expenditure of funds thereon is not warranted.

All property in the department is being carefully listed and marked, and a card index and catalogue are being prepared.

A new decimal classification (Dewey-Parker) of all books in the department library is being made. This classification is the same as is used in the United States Military Academy and other large libraries. A large amount of physics laboratory apparatus has been purchased during the current year.

During June, 1917, a new text-book, *Theoretical Mechanics*—Hoskins, was substituted for Gordon's *Mechanics*. Upon taking charge of the department on August 27 these books had been procured and were ready for use. No list of lessons or designation of problems had been made out for this ensuing course, which was to begin on September 1. A series of laboratory exercises, sixteen in all, were in course of preparation. These were received about the middle of September. It was necessary to use the text which had been adopted and it was used throughout the course in theoretical mechanics. This text was completed early in January, a few days after it had been directed that the class under instruction should be advanced to the 1st Class on March 2, with a view to their graduation in August following. The 2d Class course was therefore shortened approximately three months. The remaining period after completion of Hoskins' text was devoted to the study of *Power and Power Transmission, Light and Sound*. Kerr's third edition of "*Power and Power Transmission*" and Franklin and MacNutt's "*General Physics*" were used.

Theoretical Mechanics—Hoskins, was not satisfactory, largely because of its most purely theoretical nature and because of the fact that a large number of cadets under instruction had no grounding in physics. Their mathematical training was perfectly satisfactory, but it was evident throughout the course that many of the members of the class lacked any fundamental knowledge whatsoever of the basic laws of physical science as applied to mechanics, sound and light. Such knowledge is usually obtained through the study of elementary physics. Approximately 46 per cent of the class had not studied physics prior to entering the Academy and the curriculum of the first two years at the Academy does not include the study of physics in any of its branches. This condition is a serious handicap to men who get their first knowledge of the laws of nature through the study of rigid theoretical mechanics.

The work in *Power and Power Transmission* was fairly satisfactory, but would have been far more so had more time and apparatus been available. The time devoted to *Light and Sound* though short was quite satisfactory. The work in *Optics* was considerably improved through the use of optical

benches which were provided for each section room and by means of which the practical demonstrations of problems in Optics were made.

Experience during the past year and the fact that approximately 36 per cent of the next 2d Class have never studied physics and 55 per cent have had only a very short high school course in the subject indicate the necessity for spending a considerable amount of time at the beginning of the year on the study of mechanics, sound, and light as ordinarily covered in a good course in college physics. Such a short course in physics would unquestionably prove of great advantage as a review of physics to those who have already studied the subject and of primary advantage to those who have never studied it.

The course for the next academic year is being prepared with this object in view.

Technical Mechanics—Maurer, 4th edition, has been substituted for Theoretical Mechanics—Hoskins. This new text, while rigid, is more applicatory in its nature and is far better suited to the present-day needs at the United States Military Academy. The fundamental course in physics and the course in technical mechanics will occupy a larger portion of the department's time than ever before.

The present war has emphasized the necessity for a good grounding in technical mechanics and has increased considerably the importance of sound instruction in Sound and Light.

The study of these subjects should be followed by a good course in the elements of mechanical engineering and in order to meet this condition it may be necessary to diminish the time allotted to the study of astronomy. As a cultural study astronomy is looked upon as of considerable value. The study of practical astronomy should take up a fair portion of the time devoted to astronomy but should be limited to the four or five fundamental problems with which the officer may later come in contact in his work in surveying or in firing long-range artillery. The feasibility of transferring the instruction in practical astronomy from the department of philosophy to the department of practical military engineering, there to be taken in connection with their course in surveying, should be considered. This would probably necessitate its being deferred until the 1st class year.

The head of the department has in mind certain additional changes in the scope and character of the instruction in the department but prefers to recommend these changes only after very thorough consideration of all phases of the matter. There is no doubt in his mind but that the study of elementary mechanical and electrical engineering is fully as important as the study of civil engineering at the Military Academy, and he is prepared to so arrange and conduct his course as to take such part of this work as may be assigned the department by the Military Academy or superior authorities. The course in this department as now laid out leads directly to the study of mechanical engineering and a proper co-ordination of the work within the department supplemented by a slight culling out of other work in the department will enable him to devote a considerable amount of time to the study of mechanical engineering. This would in no way detract from the course in mechanics proper, but would immeasurably increase the practical value of this course by impressing upon the cadet the applicatory value of mechanics in engineering.

A short course in Applied Optics, devoted to a study of Service apparatus, will supplement the course in Light.

All cadets of the 2d Class satisfactorily completed the course in this department. Six cadets were deficient on the advance and review work but were proficient on the final examination.

The work of the department is likely to suffer during the approaching year because of the promotion and relief of most of the old instructors. The necessity for this action is realized and every effort will be made to compensate for it by improving methods and means of instruction.

The head of the department is most grateful to his assistants, Major Dunn, assistant professor, Major Lawrence, Major Thurman, and Major Jones for their loyal, untiring and efficient assistance during the past year. He would be pleased to have each of them remain with the department but understands their earnest desire for more active service at this time and can only wish that such as are called away for war service may be as successful in that field as they have been in the department of natural and experimental philosophy.

DEPARTMENT OF CHEMISTRY, MINERALOGY AND GEOLOGY.

The work of this department under the conditions existing (early graduation and reduced number of instructors) is very materially interfered with, as shown by the appended extract from the head of the department.

Owing to existing conditions, instruction in the department of chemistry was concluded on March 2, 1918, the class of 137 cadets successfully completing the course.

The shortening of the course has forced the entire omission of the subjects of mineralogy and geology and a curtailment of a portion of the course in electricity.

Instruction has followed a three-hour schedule, each instructor handling three sections, averaging about 34 cadets per instructor.

As pointed out last year, the adoption of the three-recitation period per instructor and the necessity of arranging hours of attendance so as not to conflict with other departments, has resulted in a very material reduction in the length of the laboratory period—from nearly two hours to one hour and twenty minutes—a time too short for the thorough performance of much of the valuable laboratory work given in the past years.

The department has added to its equipment four Cooper-Hewitt lamps by which laboratory work on a certain number of electrical problems is now made independent of weather conditions.

It is suggested that the title of the department might well be changed to that of Department of Chemistry and Electricity, as being shorter and especially as being more descriptive.

DEPARTMENT OF DRAWING.

The variations from previous courses in this department adopted for better instruction and also due to early graduation of the senior class, are set forth in the extracts from the report of the head of the department hereto appended.

Third Class Course.—The changes in the 3d Class course in drawing outlined in the annual report for 1917 were carried into effect. The result has been that a total of 45 cadets of the 3d Class have taken the advanced course in drawing, and they have gained a full month over the course as previously laid out. No serious disadvantages have been observed to result from the change, and it will be made permanent.

Second Class Course.—Due to the decision to graduate the class on June 12, 1918, instruction of the 2d Class in mechanical drawing was suspended in March, provision being made for the instruction in topographical sketching during the period from May 8 to June 8. The usual course in mechanical drawing was practically completed, only a small abridgment being necessary on account of the shortened time. The principal abridgment in time had to be made in the course in topographical sketching. The bulk of the work in this course can only be conducted during the outdoor season. Due to the shortened course in sketching and the conditions under which the work must be done, it was recommended that the work be not marked. This recommendation was approved. Freed from the necessity of preserving the competitive feature of the course, greater latitude was possible in the instruction. By interchange of time with the department of tactics, and by the use of automobile trucks, it was possible to conduct the later work in sketching in areas distant from the academic building, where open ground could be found much more suitable for instruction than any heretofore available. With the incentive to the class to learn furnished by their approaching graduation into active service, and through the better opportunity afforded by unmarked instruction on ground well suited for topographical work, it is thought that this class got a better practical conception of the subject of sketching than any previous class.

Recommendations:

- (a) It is recommended that the plan of conducting an advanced course and a regular course be continued.
- (b) It is also recommended that the assignment of periods of time sufficiently long to enable the class to be taken away from the post to ground more suitable for topographical instruction be adopted as a permanent feature of this instruction.

Due to my absence on observation duty in France from October 9, 1917, to January 18, 1918, and to my illness subsequent to my return, much of the work of the department during the past year was conducted without my personal supervision. I resumed charge of the department in time to take personal charge of the instruction in topographical sketching. Prior to my departure full plans for the year's work had been developed and the work of the department was faithfully and efficiently carried out by my instructors in my absence.

DEPARTMENT OF MODERN LANGUAGES.

The head of this department was absent from the Academy during the second academic term, January to July, on service connected with military observations abroad. The department was very satisfactorily conducted by Colonel Martin, acting professor. His report follows.

Colonel Cornélie DeW. Willcox, professor of modern languages, has been absent since November 20th, 1917, on detached service.

Second and First Class French.—Because of the desirability of having, during the present war, as many graduates as possible fluent in French, that language has, during the past year, replaced the Spanish of the 2d and the 1st Class.

The course consisted of dictations, conversation, and translation of English into French.

Text-books used:

“En Campagne”—Dupont.

“L’Ame des Chefs”—Jean des Vignes Rouges.

“War French”—Willcox.

“La Langue française”—Bercy.

“At West Point”—Martin and Russell (in certain sections only).

“Facts of Life”—Betis and Swan (dictation only).

The object of the course was fluency in speaking and writing French. The results have been very satisfactory.

Third Class French.—For the 3d Class, the course was planned:

(a) To provide in the first part of the year (September–December) a solid foundation in the language; to be obtained by a careful study of the pronunciation, the essentials of grammar, the use of verbs, with as much dictation and conversation as possible, in furtherance of the underlying idea.

(b) To develop upon this foundation, in the second part of the year (January–June), as much fluency as possible in speaking, reading, and writing French; by means of work in composition, by dictations, and by conversation.

The results have more than realized expectations.

Instructors’ Conferences.—Special effort has been directed to improving classroom methods, and to securing uniform instruction, by means of conference for the instructors, in which the advance lesson for each day has been carefully gone over and discussed with reference to its essentials, the best ways of handling it in the class-room, etc.

Civilian Instructors.—The replacing of Spanish by French has thrown double work upon Mr. Vauthier, the civilian instructor of French. His work has been arduous, but he has performed it in the most conscientious and loyal manner. It is a pleasure to testify to the fine spirit and earnest effort which has invariably characterized his work.

Mr. Asensio, the civilian instructor in Spanish, has, under authority of the War Department, been assisting in the instruction of Spanish at the Georgia Military Academy, in which work he has undoubtedly been of great value.

It is recommended that the pay and allowances of a captain, including the retirement and pension rights, be granted to Mr. Asensio and Mr. Vauthier, civilian instructors in the department. Both of them have given long and faithful service to the Military Academy.

The cost of living has steadily increased since the position held by them was established, and has reached the point that makes it impossible for the incumbents to put by enough to provide for their old age or for the protection of their families.

They should be relieved not only of the fear and worry that they are bound to feel concerning the period of their old age and infirmity, but also of the greater fear which is concerned with the welfare of the family in case of death or incapacity of its head.

Instructors.—The work of the officers on duty as instructors has been loyally performed. Acknowledgment is made of the support and assistance they have at all times rendered.

DEPARTMENT OF MILITARY HYGIENE.

This department accomplishes the maximum results in the allotted time and valuable additional instruction was introduced this year in connection with the exhibition of field sanitary appliances. The report of the head of this department is appended in full.

The course in military hygiene began on March 18, 1918, and ended May 8, 1918. The six instructors, Major H. H. Baily, M. C., Major Thomas R. Marshall, M. R. C., Captain John M. Lee, M. R. C., Major D. M. Shewbrooks, M. R. C., 1st Lieutenant A. D. Smith, M. R. C., and 1st Lieutenant Roy F. Mills, M. R. C., were most faithful and earnest in their work and I believe succeeded in teaching at least the chief essentials of military hygiene in the entirely inadequate time allowed for this course, and the class has surely learned the great value of attention to all sanitation.

The tremendous saving of life from diseases of the digestive tract in our vast armies of the present day was carefully brought before them to illustrate the value of proper hygiene control both by prophylactic treatment and routine camp sanitation, and the spread of measles with its sequels, pneumonia, cerebro-spinal meningitis and other respiratory diseases was emphasized and the great difficulty of their control explained in detail.

The control of yellow fever, hookworm and venereal diseases was given especial attention. A permanent exhibit of field sanitary appliances was built showing types of soakage pits, field ovens, incinerators, latrines and disinfectors, twenty in all. This work was most ably directed by Major D. M. Shewbrooks, M. R. C., who had attended the Medical Officers' Training Camp at Fort Riley. Additional appliances will be added from time to time from plans received from the Fort Riley Officers' Training Camp.

It is impossible to give a satisfactory course of instruction in thirteen recitation periods, at least two of which must be reviews, nor was it thought advisable to abandon the six periods which were assigned for instruction in practical first aid work in order to give more instruction in military hygiene, as in the past.

The maintenance of an army at its full fighting strength is the one aim of the surgeon and has never been more successfully accomplished than during the past year with the vast army that has been assembled. The practical elimination of fatalities from disease of the digestive tract is a marvel and the hundreds of lives, even thousands, thus saved have added greatly to the efficiency of the army, to say nothing of the tens of thousands who would have been incapacitated under the conditions that existed at the outbreak of the war in 1898.

The surgeon alone cannot control all measures of sanitation and must depend very largely on the full, hearty and intelligent co-operation of all officers of the line in his efforts, without which he would fail.

For this reason it is felt that young officers especially should be given a course that would fit them to care for the men whom they are to control and whose health so largely depends upon the efforts of their immediate commanding officer.

Supplementary instruction in field sanitation was given to members of the 2d and 3d Classes throughout the summer at the field artillery camps, each man receiving three one-half hour talks and demonstrations of filters, latrines and a field incinerator. These talks were informal but are believed to have been beneficial and will be continued.

The recommendations of Colonel H. A. Shaw in his report of 1917 are heartily concurred in, when the war is over at least, but it is realized that it is impossible to arrange for such a schedule at present.

If 30 hours could be assigned a much more comprehensive and valuable course could be given and this is earnestly requested.

The text-book, Keefer's "Military Hygiene," was used but was found to be very much out of date and a new text will be sought for use during the next year.

The syllabus on "Transmissible Diseases" prepared by Colonel H. A. Shaw was used and was by far the best part of the course and has been recommended to the Surgeon General for use in the Officers' Training Camps.

One cadet failed to show proficiency although special attention was given him.

DEPARTMENT OF LAW.

The instruction in this department was conducted as satisfactorily as possible to meet the conditions of the abridged course made necessary by the graduation of the class of 1919 in June of this year.

The following report of Captain Copthorne, one of the law instructors, briefly describes the operations of the department.

The course in law during the academic year which ended June 12, 1918, consisted of forty-one lessons, the abridgment in the regular course having been made necessary by the graduation of the class of 1919 in June, 1918.

The course in law was laid down with a view to giving the cadets only so much of a knowledge of the elements of law as they would acquire in the practical performance of their duties in connection with courts-martial as officers. The work was based chiefly upon the Manual for Courts-Martial, 1917, with one recitation only on the Rules of Land Warfare, and one involving the use of the Digest of Opinions of the Judge Advocate General.

As in the preceding year, every effort was made by the department to enable the class to apply legal principles to concrete facts as they were presented.

The course started March 4, 1918, with a series of eight lectures on the elements of law delivered by Captain L. K. Underhill, each two of which were followed by a written recitation. With this foundation, the Manual for Courts-Martial was taken up and was studied until the close of the course on June 7, 1918.

During the above course Captain D. H. Torrey, Infantry, was acting professor of law, and was assisted by Captain Lewis K. Underhill, Infantry, Captain Wm. A. Copthorne, C. A. C., and Captain LaR. L. Stuart, C. A. C.

DEPARTMENT OF PRACTICAL MILITARY ENGINEERING.

The head of the department at the date of last report, Colonel E. M. Markham, was relieved from duty at the Academy on August 31, 1917, and was succeeded by Lieut. Colonel George R. Goethals, Engineers. The latter was relieved on March 26, 1918, and was succeeded by Lieut. Colonel R. T. Coiner. All these officers have given able attention to the many demands of the department and have met them satisfactorily. Extracts from the report of Colonel Coiner follow:

The general character of instruction has been similar to that of the preceding several years, adjusted, however, to accord with the advanced graduation of the class of 1918 on August 30, 1917, and the class of 1919 on June 12, 1918.

The instrumental equipment of the department is at present far from adequate to meet the needs of instruction for the larger class now entering the Military Academy. Through the courtesy of the Chief of Engineers, this department has been loaned instruments for instruction in surveying from the Engineer Depot and from the various District Engineers throughout the country. This arrangement cannot be depended upon to continue, however. It is the intention of the department to add as much to its permanent equipment as possible from the increase of its appropriation. It is anticipated that in two years hence it will be no longer necessary to borrow any equipment.

In view of the greatly increased amount of equipment and materials needed for the practical instruction of the larger classes, \$6,000 per year should be available for this department for the next two years, and about \$4,500 per year thereafter.

Signal Equipment.—The Signal Corps is prompt and generous in honoring all requisitions for signal property pertaining to cadet instruction, which is accordingly maintained at a very satisfactory standard.

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

The authorized strength of the detachment is 100 men; the average during the year has been 96.25 men.

A considerable fraction, perhaps one-tenth to one-eighth, of the recruits assigned to the organization are unsuitable for its peculiar purposes. The detachment's primary functions pertain to assistance in the instruction of cadets, contact with whom during the several drill seasons is daily and intimate. A correction of this situation has been and will continue to be attempted by special letters of request to the recruiting service.

Reference has been made in previous annual reports, and frequently in the reports of inspecting officers, to the inadequacy of the detachment barracks. The structure was built in 1858 for the accommodation of 50 men. It can accommodate, under wholly unsatisfactory and unsanitary arrangements, however, about 70 men. In step with the increase of the cadet corps, the personnel

of the detachment must necessarily be augmented. It is, accordingly, again emphasized that suitable modern barrack provision should be made for about 130 men, preferably by the construction of a new building, since it is doubtful that the existing structure can be satisfactorily or economically enlarged.

The detachment's discipline and instruction have been quite satisfactory since last annual report. Three desertions have been recorded, probably accounted for somewhat by the war spirit of the times, and the desire for service in Europe, as well as the usual causes of temperament, personal troubles, in-sobriety, etc.

Improvement to Roads and Grounds.

In the absence of any provision for this important work in the appropriation bill for the last fiscal year, work was prosecuted from the special contingency fund as per letter Headquarters, U. S. M. A., dated May 23, 1917.

The work was in general accord with original suggestion of the landscape architects, Olmsted Brothers.

Fortunately, the recent appropriation bill for the support of the Military Academy has provided a fund of \$3,000 for continuing the improvement of roads and grounds. The work thus far accomplished has proved to be of great value in affording access throughout the forested portions of the reservation, in facilitation of timber removal, fire fighting, etc. In addition, most attractive riding circuits are provided, giving desirable impetus to horse-back exercise, and tramping, of peculiar value to many officers here engaged upon confining academic duty.

Water Supply.

The supply system has operated uninterruptedly throughout the year and with a minimum of trouble. The single important consideration at this time regarding water system is the condition of the side hill retaining walls supporting the pipe line through Popolopen valley. Sections of these have slipped, or have been thrown out by frost, during the last three winters, and although the pipe itself is yet unaffected, it is but a matter of time till the remaining support will be insufficient to prevent a side hill slip. Such an event would be certain to destroy the line and bring into question serious interruption of service. The matter will be taken in hand just as soon as the \$3,000 appropriated becomes available. It will be necessary to ask for an additional \$3,000 on the next appropriation to carry on the repairs as the sum of only \$3,000 is deemed insufficient owing to the high cost of labor at the present time to repair all the walls.

Water has been drawn from Queensboro Brook throughout the year. No serious breaks developed in the line during the year. Supply exceeded consumption during the year.

By constant inspection, sanitary conditions over the watershed have been maintained satisfactorily with the result that the monthly examination by the post surgeon of both raw and filtered water, have disclosed nothing of an objectionable or suspicious nature.

Consumption continues to be extravagant, though less than prior years. The available margin is large, however, and further reduction should readily be possible in case of need.

Consideration is being given to the practicability of arranging for the use of raw water in place of filtered water for several of the post's activities.

The maximum recorded daily consumption was 1,347,000 gallons and the minimum 622,000 gallons. The average has been 1,045,225 gallons. The total for the year was 381,497,200 gallons.

Electric lights have been installed in the filter beds, meter and gauge rooms. This gives better facilities for the cleaning of the beds, and does away with the use of carbide lamps, which were very expensive to maintain.

DEPARTMENT OF ORDNANCE AND GUNNERY.

Colonel Tschappat returned to the Academy from detached service about the 20th of February, arranged and conducted an abridged course of instruction in this subject for the class which graduated on June 13. His familiarity with both the practical and theoretical instruction in this department made his services most valuable under the conditions of an abridged course.

Extracts from his report are hereto appended.

The course in ordnance and gunnery for the class of 1919 commenced on March 4, 1918, and was continued to include June 7, 1918. The thirty-four lessons comprising the course were so selected as to give the class as good a knowledge of ordnance as practicable in the short time available, the usual reviews were omitted and all the lessons were advance work.

The practical course in shop work was necessarily omitted, as were the visits to the arsenals which were made when the course extended throughout the entire year.

The furnishing by the Ordnance Department of six each of five types of machine guns now in use, permitted unusually thorough instruction in machine guns to be given this class.

Ordnance Matériel.

The armament of the post has been kept in good repair during the year. Changes and alterations ordered by the War Department have been incorporated in the field and seacoast artillery at the post.

The necessities of war required the shipment away from the post of two 12" mortars, two 6" seacoast guns, two 6" howitzers, one battery of 4.7" guns and one battery of 3" guns. These have been replaced by other matériel, except for one 6" seacoast gun, the two 6" howitzers and the battery of 4.7" guns.

Enough Browning machine guns (heavy type) and Vickers machine guns are on hand for use in the instruction of cadets in the tactical use of these guns, while enough Browning automatic rifles have recently been received to completely equip one battalion of cadets.

An ample supply of ammunition for small arms, machine gun and field artillery target practice has been furnished during the year.

Ordnance Laboratory.

Included in the Ordnance Laboratory are the barracks for the ordnance detachment, two storehouses and a number of sheds for the storage of ordnance

property and a machine, carpenter and blacksmith shop for use in the instruction of cadets, and in the repair and alteration of ordnance property on the post.

These buildings have heretofore been sufficient for their purpose, but the increase in the size of the Corps of Cadets and the policy of handling all ordnance property through the post ordnance officer necessitates a greater amount of room for the instruction of cadets in shop work, as well as a greater amount of storage space.

It is proposed to obtain this room by placing a second story on the building used as a machine, carpenter and blacksmith shop and building a new ordnance barracks, permitting the use of the old barracks as a storehouse.

Estimates for the new construction have been forwarded in a separate communication.

Museum.

The museum attracts an increasing number of visitors. Considerable use is made of the ordnance exhibits in the instruction of cadets. The work of repairing valuable flags has continued during the year.

Ordnance Detachment.

The work of this detachment consists principally in receiving and issuing ordnance stores and ammunition to the Corps of Cadets and to other detachments on the post; caring for seacoast armament; repairing, altering and handling target matériel for cadet target practice; furnishing the enlisted personnel required in museum; furnishing assistance in the instruction of cadets in shop work; furnishing clerical assistance to the department of ordnance and gunnery; and keeping in good order the grounds and buildings pertaining to the ordnance laboratory.

The increased work of this detachment due to the change in the method of handling ordnance property referred to above, the increase in the size of the Corps of Cadets, the greater use of machine guns, trench mortars, etc., at cadet drills, will require an increase in the authorized strength of this detachment from 22, the present authorized strength, to 28 men.

Separate recommendations as to this increase and a new barrack building for the detachment have been made.

DEPARTMENT OF ENGLISH AND HISTORY.

The report of the professor of English and history, with slight elision, is given herewith.

The 4th Class contained 365 members at the beginning of academic work September 11, 1917. For their instruction in English and history, this department was allotted 12 instructors, each instructor being required to teach three sections each day. Owing to unforeseen difficulties, the full allotment of instructors could not be brought to West Point for the opening of the academic year, so that during the first recitations the sections were unduly large. In the middle of the spring term, it was deemed necessary to use Major Ganoe, assistant professor of English, in another capacity, and the department lost

his services. Thereafter, the department continued its work with only seven instructors, dividing them as follows: six to English, five to history.

The methods of instruction adopted in previous years have, in general, been followed during the past year. It continues to be regrettable that the burden of instruction for each officer is so heavy under conditions during the last two years. Since halves of the class alternate in reciting English and history, each instructor is required to teach each lesson six times. It is inevitable that the repetition of instruction so many times results in a noticeable falling-off in efficiency in the conduct of the teaching of those sections which come at the end of the second day.

Furthermore, it is impracticable in English to require as many long written papers as formerly. The burden of the correction of thirty hour long written papers each day, added to the work necessary for the preparation of the next lesson, requires more of an instructor's time and strength than can justly be asked.

Though under present conditions no recommendation for a change in the system is submitted, it is my hope that as soon as peace is won and the conditions again become normal, instructors may be required to teach no more than two sections per day. Increased efficiency and time for more attention to the faults of individual cadets will then follow.

English.—The work in English during the fall term was changed in one important respect. By a series of written tests at the beginning of the year approximately one-sixth of the class was proved to have already a sufficient foundation in the principles of composition. The men thus proved proficient were therefore organized in separate sections and given advanced work in the study of literature. The remainder of the class pursued the regular course.

Later in the term, at the expiration of the work in the composition text-book, additional tests were held to determine those cadets who were still weak in their English writing. By these tests a group of cadets, about sixty in number, was separately organized for further drill in composition, while the regular and upper courses proceeded with the study of the literature part of the course. The department was thus conducting in the latter third of the term three English courses graded for differing abilities and previous preparation of the cadets.

* * * * *

During the written general review period, the system of giving special advance work to the upper sections was continued.

History.—The ground covered in the regular history course, and the methods used in instruction, have been the same as in previous years. For the period from the accession of Bismarck to the outbreak of the Great War, however, a new text-book, prepared by two officers of the department, was introduced in order to give to the cadets a better conception of the train of events leading up to the outbreak of hostilities in 1914.

During the written general review period of the fall term the special sections were given, as in previous years, work in the Campaigns of Napoleon. During the corresponding period of the spring term, where last year the special sections studied Seymour's "Diplomatic Background of the War," this year these sections, enlarged to include almost one-half the class, pursued a course in the

History of the United States since the Civil War. The period studied corresponded to the period covered in European History during the advance work of the spring term. The cadets in the special sections have done especially well in the study of the United States History.

Lectures.—The work both in English and in history has been supplemented from time to time by lectures delivered by men outside of the Military Academy. The subjects have been suggested to the lecturers by the department in order that the material might co-ordinate with the work of the department.

In conclusion, it is a pleasure to acknowledge the loyalty and efficiency with which the officers have co-operated in the work of the department. Major Chilton, Major Gance, and Captain Harding deserve special mention for their capable management of the administrative details in their position as assistant professors.

HEALTH AND SANITATION.

The health conditions of the post have been excellent, although the hospital admissions in the case of cadets were increased over last year, due to precautions taken to guard against a spread of measles. The surgeon and his assistants have been energetic and watchful in looking after the general sanitary conditions; extracts from his report follow.

Pursuant to instructions contained in Memorandum, No. 43, Headquarters, U. S. M. A., May 23, 1918, the following report is submitted upon the work of the medical department with reference to health and sanitary conditions of this command during the fiscal year ending June 30, 1918:

Corps of Cadets.—The health of the Corps has been excellent, although the number of admissions to hospital was 1044. The increase was largely due to the extra precautions that were taken to prevent spread of the epidemic of measles and to guard against complications, owing to the fact that influenza and conjunctivitis were also epidemic at the same time, the latter being due to a pneumococcus infection. The hospital admission rates and the non-effective rates per thousand are given below:

TABLE I.

Year	Mean actual strength command *	Case *	Rates per 1000	Non-effective rates per 1000 hospital *
1915-1916	579	579	1000	13.82
1916-1917	712	756	1061	14.54
1917-1918	740	1044	1410	20.67

One cadet died from acute lymphatic leukemia, a rare disease, ten were discharged for physical disability and four were given sick leave to rejoin the next class if physically qualified. Two were dropped from the rolls of the Academy July 2, 1917, who had been transferred to Fort Bayard years before.

There were no cases of malaria or typhoid.

Twenty-four cadets were injured during the football season with a loss of 131 days in hospital and 242 days lost in quarters. One fracture of the fibula lost 40 days in hospital, one injury to knee 13 days and one contusion of lumbar

region with haematuria 14 days. A total loss of 131 days in hospital and partial of 242 days in quarters is a serious one and especially so when limited to the small number of cadets who played during the season.

The 215 operations including 10 appendectomies and 1 cholecystotomy performed by the staff have all been successful, no fatalities being recorded although a number of major operations have been performed and serious conditions encountered.

Enlisted Men.—During the past year there were 311 admissions to sick report, equivalent to an admission rate of 385 per thousand; the total number of days lost was 3087, giving an average non-effective rate of 10.47 per thousand for the year.

Sanitation.—In general, as shown by last sanitary report, the sanitary conditions at this station for single enlisted men, cadets and officers are excellent. The report of Major Shewbrooks shows a deplorable condition in the band barracks. These quarters for both married and single men are not satisfactory, the toilet and bathing facilities being totally inadequate for the numbers quartered in the building.

A special report as to the inadequacy of the cadet hospital has been made.

These changes will provide space for at least thirty more beds, a study room for cadets sick in hospital and rooms for specially sick and also for respiratory cases.

They will provide an out-patient department in the basement which will be much more convenient for patients and will stop the danger of bringing contagious diseases into the hospital which now exists.

They will greatly improve the condition of the operating room also for all minor surgical cases and dressings will be taken care of in the out-patient department.

It is hoped that work can soon be started.

During the winter the interior of the hospital was painted throughout and impaired tiling in Ward Cuyler was removed and walls finished in plaster. The building is now in excellent condition.

Anti-mosquito measures were rigidly carried on during the last summer and on the whole were very successful.

Water.—The monthly reports of the water have shown it to be excellent and no colon bacilli have been reported.

On October 1, 1917, a new milk supply was obtained from the Arden Farms Dairy Company. This milk must show a bacterial count not to exceed 40,000 and contain 3.8% fats. Several examinations made have failed to show a count of even 20,000.

No pasteurization has been necessary and the milk is more palatable in consequence and with the increased fat content much more nourishing.

During the winter all rooms in the cadet barracks were provided with the new indirect lighting system similar to that already in use in two divisions of the north barracks. Enough time has not elapsed to determine whether better lighting will affect the number of cases of eye strain, but it is believed that it will prove to have been a large factor in alleviating these conditions among cadets.

Shoes.—Last summer many cases of sore and blistered feet occurred and were found to be due to badly-fitting shoes.

It is unfortunate that the shoe at present in use by the Corps differs from the prescribed army shoe and the regulation measurements cannot always be relied upon to secure a good fit in consequence. It is hoped that the personal care exercised in fitting the new cadets will overcome many former injuries and that the adoption of the regulation last which was recommended and met the approval of the Superintendent will eventually correct this source of trouble.

The tan or russet shoe is strongly recommended for summer use during the encampment, as the dye in the black shoe leaks through the leather in wet weather, badly stains the skin and appears to irritate all bruises and excoriations. The black leather also hardens after being wet, as oil cannot be used to soften it, and thus increases the liability of blisters.

Respiratory Diseases and Exercises.—I am firmly convinced that during the winter the cadets are too closely confined indoors and at least one hour a day should be devoted to some form of outdoor drill, signal drill, digging trenches in snow, regular marches or some such work to maintain them in good physical condition.

The gymnasium exercises and cavalry instruction are excellent, but these are all given within doors and cannot take the place of outdoor exercise where the lungs and nasal passages would receive pure, unheated, unadulterated air.

Respiratory diseases, which comprise 50 per cent of all cases, are always the most common during the winter and increase rapidly after academic work is resumed. It is believed that the above recommendation would greatly lessen the liability to this class of disease and improve the mental activity of the cadets.

Dental Conditions.—The condition of the teeth of entrants to the Academy is a serious one as revealed by a careful examination of each new cadet's mouth last summer, as shown in report of Captain Van de Water of October 26, 1917.

The vital importance of preserving teeth and of removing all focal conditions is rapidly being more recognized. It is also well known that destruction of teeth from caries is very rapid at the age of most cadets.

The work done during the year by the dental surgeons shows that they have worked faithfully and even arduously, but it has been impossible to complete the necessary work to be done on the cadets alone, although the graduating class had all been inspected and their teeth put in the best condition possible before they left.

The dental work for the soldiers, officers, and civilian population has had to be done whenever possible but can never be satisfactorily accomplished with but two dental surgeons, and a third should be allowed for the needs are great and of special importance, the teeth of the soldiers being deplorable.

It is recommended that the examination of the teeth of all cadet candidates be made by a dentist to be added to the examining boards, and that all defects be noted on their physical examination reports and that each candidate be directed to have all defects corrected before being finally admitted, examination to be made by dental surgeons at the Academy to determine whether or not the defects noted have been cared for.

Laboratories.—The needs of the laboratories—chemical, bacteriological and X-ray—constantly increase and we have been seriously handicapped in not having anyone equipped to make various differential tests. Sergeant Murphy has been detailed for instruction in New York by authority of the Surgeon General, and when this instruction has been completed should be able to make all necessary tests and cultures and thus save serious and at present unavoidable delays, and enable us also to make blood cultures in many cases where it has not been possible in the past.

Special reports on the epidemic of measles that occurred during the winter in the Corps of Cadets have already been made and the difficulty of controlling any such outbreaks pointed out.

With an enlarged hospital as provided for and improved facilities in the laboratory, it is hoped that these dangers will be greatly lessened, although they will always be great owing to the intimate relations that necessarily must exist in the Corps especially during the winter months.

THE ADJUTANT'S OFFICE.

Following is the report of the Adjutant, Lieut. Colonel W. A. Ganoe:

I reported for duty at the United States Military Academy on August 24, 1916, when I was assigned to duty in the department of English and history as assistant professor of English on August 24, 1917. I was detailed as adjutant of the Military Academy relieving Captain Daniel H. Torrey, Infantry, who served in that capacity from August 27, 1917, to February 18, 1918. He in turn had relieved Lieut. Colonel C. C. Carter who was appointed professor of natural and experimental philosophy on August 14, 1917, and who had served as adjutant from November 21, 1914, until August 26, 1917.

Captain James B. Ord, Infantry, was on May 8, 1918, appointed intelligence officer and assistant adjutant at these Headquarters. He has faithfully performed the duties of the extensive intelligence work since that date.

Much routine work of this office has been simplified by referring papers relating to the other staff offices direct to those offices for preparation instead of referring them formally as has been the custom and which necessitated the unnecessary handling of papers. A rubber stamp method for handling candidates' certificates has been inaugurated which saves at least two days time in getting the action of the Committee of the Academic Board. This work, though heavy, must be accomplished in a limited time and prior to a certain date. The force of clerks in the academic division handling this work, with all other matters relating to the academic work is inadequate, there being but two civilian clerks and two enlisted men in the division. One thousand six hundred twenty-three candidates were designated for the March examinations, and of this number approximately 450 submitted certificates for consideration of the Academic Board in lieu of the mental entrance examination. In addition, forty candidates involving 133 applications have reported at odd times for examination. Much overtime and Sunday work was required on the part of the clerks in this particular division.

The publication known as "List of Cadets Admitted to the U. S. Military Academy from its Origin, etc.," has been brought up to date of September 1,

1917, by Mr. Allen of the disciplinary division of this office and much credit is due him for this particular piece of work. In addition, this division is taxed with all the disciplinary work of the increasing Corps of Cadets. The force is practically as it was in 1910, consisting of one assistant, now an enlisted man. It is strongly urged that an additional competent clerk be furnished not only to carry on the necessary work in this division now but to be able to take over the work of the division in case of Mr. Allen's probable retirement.

An intercommunicating system of dictaphones has been introduced in these offices and a telephone has been installed on the desk of the head of each division. This has proven that the work can be accomplished with less interruption and with more ease and facility than formerly. Useless trips to and from the various divisions and the adjutant's office are thus eliminated, making a saving of several hours a day in efficiency.

The headquarters force is about to undergo a change in that two civilian clerks receiving small salaries have been recommended for higher salaried positions in the Quartermaster's offices. It is next to impossible to retain a male clerk, possessing any qualifications, at a salary of \$1,000. This salary is very meager indeed when compared to the present wages paid on the outside. It is becoming more apparent than ever that with the increased amount of work, due to present conditions and the increased Corps of Cadets, that labor saving devices must be resorted to as much as possible, but nevertheless the duties of all have been heavy, and since my detail here I have endeavored to throw more responsibility on the chiefs of the different divisions and on the office force in general, inviting suggestions as to more efficient methods and the cutting out of all unnecessary work. In this way I have obtained some good ideas which are being put in operation as soon as the necessity becomes apparent. From the rapidly increasing work, however, it is evident that the office force must be increased.

Several of the clerks are well advanced in years, having spent practically all their lives in the service, and it is hoped and recommended that some relief will be afforded them either in the form of increased salaries or retirement as a recognition of their long and faithful services.

The printing and binding divisions have performed all work assigned them satisfactorily. The working force of the printing division has been lessened by two enlisted men which vacancies have not yet been filled. Due to the increased amount of work on account of the increased Corps and the personnel of instructors the printing has increased enormously. The daily general and special routine orders from these headquarters have increased greatly in number and length, and their necessary prompt publication caused much delay in other necessary work. A Mergenthaler Linotype machine was installed to meet this necessity, and its speed and efficiency released two men for other duty. One paper-cutting machine, one perforator and one job press have also been added during the year. Although the installation of these machines and new methods have greatly increased the facilities, the force in the printing office is still inadequate. Two extra men in addition to the vacancies which have been indicated should be added to the force so that competent performance can be had when the Corps attains the maximum number under the law.

The great amount of intelligence work and labor entailed upon the Personnel Adjutant has given rise to the necessity of having three extra clerks in this office. So far these men have been taken from the various divisions of the office as they could be spared with least injury to the general work. However, this sort of thing has hampered the divisions in their work and has not attained the efficiency in the personnel and intelligence work that would have been attained had the clerks been permanent. Foreseeing the coming needs of the maximum number of cadets allowed under the law July 1, 1919, the following additional number of men in each division will be required:

Military division.....	1
Mailing and filing division, for duty especially in intelligence and personnel work.....	3
Academic division.....	2
Disciplinary division, 1 excellent man for replacement and one additional clerk.....	2
Printing and binding division.....	2

TREASURER, U. S. MILITARY ACADEMY, QUARTERMASTER AND COMMISSARY FOR THE CORPS OF CADETS.

The duties of the Treasurer are annually becoming more arduous and difficult owing to the steadily increasing cost of all supplies, the increase in the number of cadets, and the insufficiency of their pay allowances for their support. These duties have been ably and satisfactorily performed by Captain B. A. Dixon, retired; full extracts from his report follow.

TREASURER'S OFFICE.

State of business May 31, 1918:

<i>Assets.</i>		<i>Liabilities.</i>	
Cadets acc'ts rec.....	\$ 88,222.06	Accounts payable.....	\$ 62,147.20
Gen. acc'ts rec.....	3,659.60	Cadet store.....	22,399.70
Office acc'ts rec.....	2,031.13	Int. on Eq. Fund.....	21.07
Cadet mess stock.....	16,409.84	Eq. fund.....	189,800.00
Cadet store stock.....	103,183.57	Glee Club.....	.80
Cloth stock.....	50,234.79	Misc. fund.....	8.50
Tailor trimmings.....	11,830.30	Reserve fund store.....	37,144.80
Shoe material stock.....	1,109.00	Reserve fund mess.....	224.55
Cadet laundry stock.....	3,207.45	Reserve fund laundry...	2,567.46
Treas. cash.....	20,552.68	Howitzer 1917 & 1918...	564.69
Dialectic Society.....	548.39	Howitzer 1919.....	1,247.99
Pay.....	33,801.22	Loan.....	20,000.00
Y. M. C. A.....	524.26		
Tennis account.....	175.64		
1st Class Club, 1916.....	7.38		
Monument fund.....	83.24		
1st Class Club, 1919.....	476.40		
Dry cleaning stock.....	69.81		
	<hr/>		<hr/>
	\$336,126.76		\$336,126.76

Total business for the year ending May 31, 1917:

Receipts, all sources.....	\$740,001.60
Disbursements; all accounts.....	744,764.82

The increase in prices since the war has made it impossible for cadets to live within their income. As a result most of them are heavily in debt. On March 31, 1917, the three classes present were \$75,844.73 in debt. Congress has thus far refused to grant a much needed increase in pay and ration allowance.

Cadet Store.—The sudden increase in cost of all articles supplied to cadets is well shown by the following list. The advance still continues.

<i>Article.</i>	<i>June, 1914.</i>	<i>Now.</i>
Full dress coat.....	\$17.88	\$24.55
Dress coat.....	13.19	19.85
Gray trousers.....	6.60	10.40
Overcoat.....	26.71	48.45
Flannel blouse.....	11.13	17.45
Flannel trousers.....	5.16	8.50
Raincoat.....	13.36	16.50
Campaign hat.....	3.76	4.50
Full dress hat.....	4.25	5.00
White army gloves, pr.....	.22	.40
White lisle gloves, pr.....	.60	.90
Buckskin gloves, pr.....	1.30	2.15
Leggins.....	.63	1.25
Gray flannel shirt.....	1.68	3.83
Gymnasium shoes.....	2.00	4.30
Uniform calf shoes.....	4.17	6.50
Comfortables.....	2.25	5.95
Mattress.....	10.00	13.00
Pillow.....	2.45	2.90
Pillow case.....	.17	.34
Sheet.....	.45	.85
Drawing instruments.....	13.25	17.50
Blanket.....	5.75	10.50
Woolen cloth, officers, yd. No. 250.....	4.47	8.50
Woolen cloth, officers, yd. No. 500.....	4.23	12.50

The sales at cadet store for year ending May 31, 1918, were \$324,362.36.

The present store building built to accommodate the business of about 400 cadets is now entirely inadequate to meet the demand of the 1,000 now present.

Cadet Laundry.—The business for the year ending May 31, 1918, amounted to \$36,247.66 and the dry cleaning department \$4,597.09.

Cadet Mess.—The rise in price of foodstuffs has been steady and still continues. The cost of board in 1914 was \$19.49 per month; in 1917, \$22.98; in 1918, \$29.19.

A comparison of prices in February, 1916, and now shows well the added increase on cost of living:

	<i>February, 1916.</i>	<i>Now.</i>
Bacon.....	\$.16½	\$.38
Beef.....	.13½-14	.25½
Chicken.....	.22	.35
Pork, salted.....	.10½	.26½
Pork, loins.....	.13½-15	.29
Pork, shoulder.....	.17½	.29
Ham.....	.15	.29½
Lamb.....	.15½	.26
Butter.....	.31	.45½
Flour, bbl.....	5.50	12.00
Sugar, cwt.....	5.90	7.85
Lard.....	.11½	.26
Eggs.....	.22	.38
Potatoes, bu.....	.84	1.50
Beans, issue.....	.05½	.14¾
Milk.....	.06	.10½

The per diem cost of board at the present time is about \$1.00. To cover this the cadet is receiving from the Government a ration allowance of 40 cts. a day. An attempt, thus far without result, is being made to secure an increase.

The mess building has been enlarged by building in the interior rectangle, and will now accommodate about 1,050 cadets. A further extension will be necessary before next year.

THE U. S. M. A. LIBRARY.

The report of the Librarian, Major James E. Runcie, herewith appended, taken in connection with his reports of the past two years, gives full information as regards the library.

The progress of the library during the past year has been substantially a repetition of that of the previous year. The falling off in the production of works of general literature and history has been more than compensated by the output of books treating of modern developments and the science of war and the contemporary history of the war now in progress. An effort has been made to select from the great mass of publications relating to the war such as will be of permanent value and such as will afford the material for a study of the history of the war in years to come.

The collection of public documents issued by the various departments and commissions of the Federal Government is practically complete.

The number of books in the library on July 1, 1917, was 100,997. On June 30, 1918, the catalogue shows 103,620, an increase of 2,623 during the year.

Some additions have been made to the collection of works relating to the history of the Revolutionary armies and the Regular and Volunteer armies of the Civil War, which have long been a special feature of the library.

The collection of portraits, which add so much to the value and dignity of the library, has been enriched by the addition of a portrait in oil of General José de San Martín, which bears the following inscription:

GENERAL JOSÉ de SAN MARTIN
The Army of the Argentine Republic
To the Library of the
United States Military Academy
As a testimonial of cordial friendship.

The picture was presented by the Argentine officers through Colonel Eduardo Raybaud, Military Attaché of the Argentine Embassy in Washington, and was received by the Secretary of War, who expressed in fitting terms the appreciation of our officers for the friendly and fraternal spirit in which the gift was made.

The thanks of all graduates of the Academy are due to many donors of other valuable and interesting gifts which have been received during the year. Among those who have generously remembered the library are Professor W. M. Dixon; The New Jersey State Library; Mr. W. H. Graves; The Provost Marshal of the U. S.; Northwestern Mutual Life Insurance Company; The Military Order of the Loyal Legion of the U. S.; Lieut. A. L. James, jr.; Mr. W. C. Muschenheim; The American Automobile Association; Mr. Walter R. Benjamin; Messrs. E. P. Dutton & Co.; Maj. Gen. Wm. A. Pew; Mr. Otto H. Kahn; The National Security League; The Army War College; Dr. Wm. H. Haskin; The Rice Institute; Mr. Warren H. Cudworth; Messrs. Harper & Bros.; Rutgers College; Mr. James Byrne; The Carnegie Endowment for International Peace; U. S. Naval War College; Lt. T. N. Toomey; Mr. Benjamin Holt; Virginia University Library; Kansas State Geological Survey; General Anson Mills; Mr. C. H. Dickey; Colonel Heman Dowd; Hon. Newton D. Baker; M. Lefebvre, Commissioner of Propaganda, France; Gen. L. W. V. Kennon; National Advisory Committee for Aeronautics; Major J. Reuben Clark; Continental Insurance Company.

No repairs have been effected to the Library building during the year.

THE CHAPLAIN.

The nature of the duties performed by the late Chaplain of the Academy are fully set forth in my last report, which included a report of the Chaplain himself. While his report referred to the year ending June 30, 1917, his varied, valuable and enthusiastic work was kept up until he went on leave in early July of the present year in anticipation of the acceptance of his resignation which had then been tendered. This was the first leave of any considerable length that Chaplain Silver had asked for since he was appointed to the position five years before. The resignation of Chaplain Silver, which took effect on October 1, was universally regretted and his excellent work has greatly benefited the Academy and left a lasting impression for good upon all who came in contact with him. At the present writing, November 15, no successor to Chaplain Silver has been appointed.

As stated in my last report, as well as in several previous reports of my predecessors in the Superintendent's office, the salary of the Chaplain is very inadequate to the importance of the position, nor commensurate with the work done nor the benefits conferred thereby. His salary should be increased, at least, to that of a major.

CHAPEL ORGANIST AND CHOIR MASTER.

The large and impressive Chapel now provided for the Academy with its magnificent organ, would be sadly incomplete without an able and accomplished organist. Mr. Mayer, the present organist, meets these requirements in every respect and his salary is absurdly small in view of his capabilities and services; it should be increased to at least \$2,000, both in justice to him and also to improve the Academy's prospects of retaining him. The following extract from the Chaplain's report of 1917 is but a merited tribute to Mr. Mayer and is fully concurred in by myself:

"The present incumbent, Mr. Frederick C. Mayer, is a musician and an organist of rare ability and besides has a temperament and individuality that appeal most strongly and favorably to cadets. It is because of these attainments and qualities that he is able to maintain a voluntary choir of ninety cadets for chapel services and train them in music to a degree that has made this feature a pride and a delight to all who attend the cadet chapel services at West Point."

THE QUARTERMASTER'S DEPARTMENT.

The great variety and volume of work devolving upon this department has been most efficiently handled by Colonel E. J. Timberlake. The necessities of the Post were anticipated and provided for by him to the great satisfaction of the residents thereof and in an economical manner for the Government. His report with the exception of the annual financial statements is herewith; these statements are at all times on file at his office.

The general duties of the Quartermaster Corps continue the same as in previous reports. The Quartermaster Corps Detachment consists of twenty-four enlisted men. One sergeant, Q. M. Corps, N. A., was transferred to officers training camp. One sergeant, foragemaster and one sergeant, butcher, were added to the detachment.

One field clerk, Q. M. Corps, who occupied the position of chief clerk, and two quartermaster sergeants, Q. M. Corps, were commissioned captains, Q. M. R. C., and transferred elsewhere.

With the new construction authorized, two additional officers should be assigned as assistants in this office. These officers, preferably lieutenants, National Army or Quartermaster Reserve Corps, should be men who have had some construction experience and be capable of performing the duties of superintendent of construction. It will be economy to the Government and undoubtedly would result in better construction. A good superintendent of construction (civilian) cannot be had for less than \$200 per month.

Army Service Detachment.

On account of the scarcity and high price of labor and materials, this detachment has enabled this office to keep up all repairs and building operations within the appropriations. The appropriations for fiscal year 1918 were the same as for 1908 and succeeding years. An increase in this detachment of 20 to 25 men would make the Post independent of outside labor, except for about three months of the year.

Civilian Employees.—The recent Act of Congress gave this office three additional civilian clerks. Congress also authorized the retirement, with pay, of Mr. John T. Godfrey, "purchasing and order clerk," after over fifty-two years of service with the Government. Mr. Godfrey has been a most faithful and competent clerk and the reward was most deserving. The rate of pay to civilian employees has been increased as funds and conditions warranted. The pay of pick and shovel laborers is now \$3.00 per day. Three years ago it was \$1.50 per day.

Transportation.—During the past year the transportation facilities have been increased by two 3-ton trucks, two Ford touring cars and two motorcycles. The two 3-ton trucks are primarily for the transportation of cadets. Two buckboards, four horses and the pack train have been transferred elsewhere.

Fire Department.—There have been no fires on the Post during the past fiscal year, except woods fires. No action has been taken by the Quartermaster General's Office on the estimate for combined guard and fire apparatus house, sent forward more than a year ago. This building is urgently needed as the fire apparatus is scattered and cannot result in most efficient work. The guardhouse is totally inadequate and unsuitable for the purpose.

During the year purchases were made of 50 chemical fire extinguishers, 300 feet of hose, and 1100 charges for hand fire extinguishers.

Power Plant.—In spite of the coal situation, we have had sufficient coal on hand for all purposes. Arrangement has been made so that we will have practically our year's supply of coal on hand by the end of August, except for the power plant. This latter coal will come in so as to keep the bins full and keep at least three months' supply on hand.

Congress recently appropriated sufficient funds to add stokers to the four boilers not now equipped. Soot blowers were also authorized. All this will add to the efficiency of the plant, and result in a considerable saving of coal.

Great trouble is being had in getting and keeping reliable engineers, firemen, and oilers. Congress refused to grant an increase in the pay of these men and the old men are resigning and so far this office has been unable to replace them at the rate of pay authorized.

Heating and Ventilating System.—This has continued to work satisfactorily. New heating plants have been installed in the enlisted men's hospital, engineer barracks, and in organist's quarters. New heater was placed in Quarters "C."

While the usual demands on heating system during past winter were greatly exceeded, no serious difficulties were encountered nor was the system seriously taxed. About 75 steam traps throughout the underground tunnel steam distributing system have been eliminated, and has made a marked difference in

maintenance costs without reducing effectiveness of the system. By installing an auxiliary main in west academic building, a heating difficulty of long standing has been removed and heating systems of all main buildings are now in efficient condition.

Gas Plant.—The revenue derived from gas, coke and tar is covered into the Special Contingent Fund and applied to the payment of employees in the gas plant, purchase of gas coal, etc.

The superintendent of the gas plant resigned May 10, 1918, and so far the Civil Service Commission has been unable to furnish an eligible list from which to select.

The plant is running satisfactorily under the supervision of Mr. Roberts, master mechanic. During the year 13,944 cubic feet of gas were made.

Special Contingent Fund.—This fund is authorized by Chapter 212, R. S. Act of Congress, approved May 1, 1888.

Forestry Department.—A woods foreman and three woodsmen have been employed during the year and other labor hired as occasion demanded.

The saw mill was in operation from July to November and 435,000 feet of lumber was produced and delivered to the Quartermaster's Department. No cord wood was cut during the year, the forest having been satisfactorily thinned out for the present. We have on hand about 144 railroad ties and 400 telephone poles to be used or sold. We under-planted 8,000 three-year Norway spruce and 7,000 Norway pine and about 100 other species. The shade trees on post proper have been kept pruned and sprayed. Eight trees, condemned by board of officers, have been removed. An insect house was built for the purpose of fighting the white pine weevil.

There have been several bad fires in the woods which caused considerable damage to the young under-plants. These fires generally are due to carelessness. Where possible to fix the responsibility, the guilty party should be punished.

Laundry.—As surmised in last report, the funds, \$75,000, appropriated for new cadet laundry, were not sufficient to build a laundry of the minimum size required. As a result of the bids, Congress was asked to increase the amount to \$125,000. This Congress allowed and bids will be opened July 5, with prospects of having a new laundry in the near future. Machinery to the amount of \$25,000 was also authorized.

Public Works.—The Military Academy estimates again carried items for new construction to accommodate the enlarged Corps of Cadets, amounting to \$5,354,000. Congress selected from this list certain items and appropriated for them. The items authorized are as follows:

Six division barracks and cadet headquarters, south side of area of old barracks	\$500,000
Eight sets of married officers' quarters, in flats	60,000
Twenty sets of bachelor officers' quarters	60,000
Wings to cavalry barracks	40,000
Wings to artillery barracks	40,000
Extension to artillery stables	40,000
Extension to artillery gunshed	25,000
Garage	10,000
Ponton material shed	5,000
Fire control station	6,000
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	\$786,000

Plans and specifications will be prepared as early as practicable and work begun.

General Repairs and Upkeep.—The necessary repairs and improvements to public buildings have been made as funds would permit. New lighting fixtures have been installed throughout cadet barracks.

Roads.—The roads have been kept in good condition generally. Asphalt macadam road was built from quarters 77 to beyond the school house. It is proposed to extend this to beyond the enlisted men's hospital during the coming year.

THE CHILDREN'S SCHOOL.

The new principal, Mr. E. E. Graves, was on hand and took charge of the school at the opening of the school season. His work during the year was zealous and efficient. It was not found practicable to retain the same officer as supervisor of the school for the entire year. The report of Major Crittenberger who acted as supervisor from April to the close of the year is hereto appended.

The following report of the children's school is submitted for the fiscal year ending June 30, 1918:

The organization of the school was as follows:

Mr. Earl E. Graves, principal	8th grade
Miss Margaret Noonan	6th and 7th grades
Miss Henriette Schopper	5th grade and sewing
Miss Amy Driscoll	3d and 4th grades
Miss Anna O'Connor	1st and 2d grades

This organization is the same as last year except that Mr. Graves served as principal instead of Mr. Paulsen, resigned.

The number of pupils enrolled was:	Boys	87
	Girls	70
	Total	157

The number in each grade was:	1st grade	28
	2d "	22
	3d "	22
	4th "	14
	5th "	19
	6th "	19
	7th "	21
	8th "	12

The appropriation of \$4320 for the maintenance of the school was expended as follows:

Pay of principal	\$1280
Pay of four grade teachers	2400
Pay of janitor at Chapel	100
Purchase of books, stationery and other supplies	540
Balance on hand at end of year	000
Total	\$4320

The amount available for the purchase of books, stationery and other supplies has been scarcely adequate, on account of the enormous increase in the cost of nearly all items purchased. It has served for this year for the reason that there was on hand at the beginning of the year a considerable reserve supply of several kinds of stationery and that it has not been necessary to purchase a very large number of new books. This should be kept in mind and provision made for a larger sum for this purpose in future estimates.

The matter of teachers' salaries should also be given attention and provision made for an increase, or it is believed that it will be very difficult to secure and retain teachers of so high an order as those now engaged. With the present tendency to high salaries in nearly all other lines of work great numbers of teachers are leaving the profession and salaries of teachers are being increased in nearly all cities.

The progress of the pupils of the school has in general been quite satisfactory during the year. The great number of contagious diseases occurring during the latter part of the year caused a decrease in the attendance, thereby affecting the work of quite a number of pupils, and, in some cases, entire classes. However, in a considerable degree it has been possible to make up the work lost and in other cases it will be possible to do so at the beginning of the next term without affecting the promotion of the pupils.

Regents' examinations were held in January for the purpose of relieving the strain of the work during the last half of the year, but no attempt was made to graduate a class at that time. Such course is not considered advisable. In the examinations held eleven pupils of the eighth grade passed satisfactorily arithmetic and spelling, and fifteen pupils of the seventh grade passed geography.

Special attention has been paid throughout the year to penmanship and quite a large number of final certificates and other awards have been given to pupils in the school for efficiency in writing by the A. N. Palmer Co. Each final certificate earned gives the pupil two counts for high school. Good progress has been made in sewing in all the grades, ranging from simple stitches and use of needle and thimble in the first grade to the completion of garments and models in the higher grades.

In keeping with the serious times through which our country is passing a special attempt has been made to keep before the pupils in various ways the subject of patriotism. This has been accomplished by linking it in with regular lessons in such ways as little talks for language lessons in the lower grades and compositions in the higher grades. During the latter part of April a Thrift Stamp campaign was inaugurated in the school with the result that every pupil in the school owns at least one Thrift Stamp or War Savings Stamp, and over five hundred dollars worth of same have been purchased at the school by the school children.

The inadequacy of the present school building has been the subject of many reports in the past. It has been necessary to continue the use of the basement of the Cadet Chapel for the 3d and 4th grades, and that room, not designed for a school room, is entirely unsuited for the purpose. Both lighting and ventilation are insufficient, and the location is very poor for the convenience of the children; it has been necessary to close the school entirely on certain days on account of snow-filled or ice-covered walks and steps, and it has been very

difficult for both teacher and pupils to reach the place on many other days. The main school building, while serving fairly well its capacity, is not satisfactory in all respects; especially in that the lighting in certain rooms is inadequate and not properly arranged according to the advice of the medical authorities. For the lack of an assembly room morning exercises are impossible, and all of the social life that should center about the school is missing. It is to be hoped that the matter of a school building of the social center type to meet the needs of this place, so often reported on and so long pending, will in the very near future receive the favorable consideration of the proper authorities.

It is recommended that some sort of organized play be introduced in the school next year, to include elementary calisthenics and marchings. It is thought that the pupils would derive a marked benefit, physically, from such a project; and the time devoted thereto would not interfere with the routine program of studies. This is in accordance with the provisions of the Syllabus of the State of New York, which is being followed in the Post School.

Taken as a whole, the progress made throughout the year, and the high standards attained, have been due, in a great measure, to the principal, Mr. E. E. Graves, assisted by an able corps of teachers.

BOARD OF VISITORS.

Four members of the House of Representatives visited the Academy, arriving on June 12. They inspected the general conditions of the Post and collected information as to the necessity for requests made to Congress:

Honorable Charles P. Caldwell,
 Honorable Harry E. Hull,
 Honorable George R. Lunn,
 Honorable John M. Morin.

The date of arrival of these gentlemen was that of the graduation of the Class of 1919, but only Mr. Lunn arrived in time to be present at the exercises.

ACKNOWLEDGMENTS.

Since the entry of our country into the war the conditions and problems which have had to be met by the authorities of the Academy have been more numerous, varied and complex than ever before in its history. The members of the Academic Board have been most zealous and efficient in their efforts to solve in the most satisfactory manner and in the best interest of the service all the problems submitted to them. Each and all of them have been most loyal in the performance of the duties devolving upon them, some of which have been of an unusual nature. The staff and office assistants at these headquarters have performed with unremitting zeal and efficiency the various and multiplied duties which have devolved upon the office because of the war; they deserve unusual credit.

The successful administration of this office has been in a very large measure due to the energy, knowledge and military experience of Lieutenant Colonel Ganoë, the Adjutant. I cannot express too fully the indebtedness to him of myself and the Post. I would also commend and express my appreciation of the faithful, untiring and efficient service rendered to the Academy by Mr. Isaac A. Boyle, the Chief Clerk.

S. E. TILLMAN,
Colonel, U. S. Army,
Superintendent.