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## THE UNIFORM OF THE WEST POINT CADET.

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WEST POINT is the home of tradition and military conservatism. That such is the fact is a happy circumstance, for in this age of rampant Philistinism a locality where *festina lente* is the rule of progress cannot but be of advantage not only in preserving the traditions of the past, but in affording an obstacle to an injuriously vacillating policy in military affairs. In no respect is this conservatism more apparent than in the uniform of the Corps of Cadets. While the uniforms of the Army at large have undergone almost innumerable modifications since its organization, that of the cadet of to-day remains practically the same as that of his predecessor of half a century ago. In making any investigations, then, looking to a possible change of any kind in the character of these garments, the inquirer is confronted by a barrier of prejudice so nearly insurmountable as to be almost appalling. But the opinions which the writer has formed are based upon indications of so positive and practical a character that they would seem to demand consideration in spite of custom or tradition.

The examination into the subject upon which the following brief discussion and conclusions are founded, was made by the Medical Examining Board, consisting of Major Charles R. Greenleaf, Captain John O. Skinner, and the writer, in June, 1888, and every facility was afforded them for making an inquiry of the most searching description. The subject was thoughtfully considered in repeated meetings of the Board. Numbers of the officers attached to the Academy were consulted at length, and the opinions of the cadets themselves were heard with close attention. Many measurements were taken and other physical tests applied—indeed advantage was taken of every available means to form an unprejudiced opinion.

The articles found to be particularly worthy of attention were the dress hat and the dress coat.

*The Hat.*—In order to properly appreciate the merits or demerits of a military dress hat, certain points, essential to the usefulness of the article, should be borne in mind. These may be briefly summarized as follows :

1. It should afford adequate protection to the entire head from the sun or rain in summer and the snow or sleet in winter, from the heat in the warm season and from the cold in the cooler months. It should have sufficient brim to shade, not only the eyes, but also the back of the head.
2. It should be well-ventilated, not coming directly in contact with the head, if possible, but having an air space between the hair and a rim fitting about the head; an opening should be present at or near the top, to permit the exit of the air entering at the brim, thus providing ventilation by perflation, which seems to be the only practicable means of ventilation for headgear.
3. It should be of sufficiently pliable material to allow it to adapt itself to heads of varying shapes.
4. It must be light and the weight must be evenly distributed about the head.
5. It must be worn with comfort and be in no respect productive of discomfort or illness upon the part of the wearer.
6. For military purposes, it should be so constructed as not to be readily put out of shape, while it should be sufficiently ornate in appearance to satisfy the demand for brilliancy in military attire.

The dress hat of the cadet corps is a chasseur cap made of stiff material and provided with an exceptionally heavy leather visor. Those of the cadet privates and non-commissioned officers are furnished with a pompon, set in a metal socket at the front and top of the cap, and projecting forward and upward; the officers are provided with a plume and socket in the same position, but of greater weight. Upon the front of the cap is a metal cap-plate.

The weight of the privates' hat is about ten ounces; that of the officers something more—but in neither case is it too great to be borne with comfort, if distributed uniformly about the head. But the ornaments together with the visor cause the greater portion of the weight of the hat to fall upon the forehead just above the eyebrows. The effect of this constant pressure is to markedly compress the skin, nerves and other soft tissues be-

tween two unyielding surfaces—the skull within and the visor without—causing much discomfort, and at times positive suffering. Attention was voluntarily called to this point by members of the graduating class, who stated that, particularly during their first and second years at the Academy, they suffered from headaches which they attributed to the wearing of the dress hat. The weight of the hat bearing most heavily upon the brow would have the same effect as a ligature bound about any portion of the body, compressing the vessels and the nerves, obstructing the flow of blood through the one and inducing a painful reaction in the other. In this way, the headaches referred to may be accounted for in the great majority of instances.

In view of these evident disadvantages, supported by the various complaints, careful inquiries were made into the reasons for continuing the hat as an article of apparel for the cadets. The only reasons that could be discovered, were, (1) its [alleged] beauty and (2) the firm hold upon the affections of the cadets and graduates which long use had given it—neither of which would seem to be sufficient to justify its retention if defective from a sanitary standpoint.

Investigations into the subject were continued with considerable minuteness along this and other lines, and, not to dwell at too great a length upon details, the conclusion was finally reached that the hat was deficient in nearly all the essentials to such an article of head-dress, viz :

1. While it covers that portion of the head contained within its cavity satisfactorily enough, the absence of brim leaves the sides of the head and face and the back of the head entirely without protection from the elements.

2. It is not ventilated, and the confinement within it of the exhalations of the head, particularly in warm weather, makes it oppressive as well as dangerous to health.

3. It is so rigid that it fails to adapt itself properly to heads of different shapes, and thus produces unequal pressure at points in its circumference.

4. While it is light enough to be borne upon the head without annoyance, it is so badly balanced as to throw the greater portion of the weight forward upon the brows, and consequently—

5. It cannot be worn with comfort, and its use is acknowledged to tend to the production of headaches, heat-exhaustion and atrophy of the hair follicles.

*The Coat.*—The essentials in a military dress coat for the use of growing lads differ in some respects from those of a fully developed adult, but they may be briefly stated as follows, warmth and adequate covering being premised :

1. It should be comfortable to the wearer.
2. It should not bind his body at any point nor cause any distortion of the figure or loss of elasticity or power of any portion of the frame.
3. It should not compress the chest or abdomen, nor interfere with the functions of circulation, respiration or digestion.
4. It should not embarrass the process of development of the youth.
5. It should be so made and ornamented, and of such material as to adapt it for use as a military garment.

The dress coat of the Corps of Cadets is a coatee of antiquated pattern, modeled after the now discarded uniforms of certain foreign regiments of the last century. It is a tight fitting jacket with two flaps hanging from the rear in the manner of the evening dress coat. Its form is such that tightness is essential to neatness. And the requirement of tightness in the coat renders it necessary that the waist-band of the trowsers, underneath it, be still tighter.

Were the coatee made loose so that the trunk could be treated as a cylinder, the garment would be ungainly and present an irresistible tendency to slip up so as to display the undergarments between the trowsers and its lower margin. This can be prevented only by compressing the trunk into the shape of an inverted cone. A satisfactory fit of the garment then demands a tight fit. So tight a garment cannot be comfortable. That this is true in the case of the coatee, is evident from the fact that when studying in their rooms or in *negligeé*, the cadets customarily unbutton it. When eating, they give free play to the abdomen by the same maneuver.

In order to test the sensations experienced while wearing the coatee, one of the members of the Board put on the coat of a cadet, the circumference of whose chest was the same as his own. At first, it seemed hardly possible to bring the edges of the coat together, but, after availing himself of the instructions of the owner of the garment, who practised upon him the manœuvres customary among the cadets in getting into the coat, he was able to fasten it about him. Discomfort to the extent of actual pain

was experienced particularly at the level of the ninth rib, which was pressed inward, although the amount of compression was the greatest at the waist. The chest movements were greatly impeded and confined, while thoracic, and in particular, abdominal respiration was markedly limited. And while it seemed possible that the wearer could become so habituated to the pressure of the garment after wearing it for a considerable length of time, as to be able to endure it without suffering, the functions of respiration and circulation would undoubtedly be impeded by it.

The effect upon the conformation of the cadet of the wearing of the coatee is particularly noticeable when, after his four years' course, he appears in the uniform of an officer, and it is a familiar sight in our Service. Instead of presenting a figure formed according to the canons of art for his sex—sloping inward from his shoulders to his heels—he presents a form similar to that of a woman as distorted by the corset—a figure defensible neither from an artistic nor a utilitarian standpoint. The lower ribs are compressed and a deformity of the thorax is produced which frequently requires several years of common-sense apparel before the elasticity of the young man's frame can entirely correct it. Atrophy of the muscles of the abdomen and loins is produced, together with a certain amount of displacement of the abdominal viscera.

In order to ascertain beyond question whether the alleged pressure of these coats actually existed or not, and if so, to what extent, girth measurements were made of fifteen members of the graduating class chosen at random, at the chest and waist, both over the coat and about the nude body. These measurements showed that *there was an average compression of an inch and a half*; in one case it was three and three-fourths inches, while in but a single one was there no compression.

It has been shown by Sargent in investigating the action of the corset upon woman, that compression of the chest adds greatly to the wear and tear of the heart. While Lowenfield has found that it has a direct effect upon the capacity for brain work. The amount of work which the brain can accomplish depends upon the amount of nourishment which it receives from the blood. But the amount of nourishment in the blood is dependent upon the amount of air which can be supplied to it, and this may be greatly influenced by compression of the chest and the consequent limitation of respiratory action. Moreover, in

considering the effect of this compression upon the cadet, it should be remembered that the coatee tightly surrounds the entire chest as well as the waist, so that its wearers do not even have an advantage equal to the tightly corseted woman, whose thoracic respiration is comparatively free, although her abdominal respiration is prohibited.

The digestive processes also are unfavorably affected by the compression of the waist, not only secondarily through the effect upon the circulation and respiration, but directly through the mechanical action of the ligation of the body, producing displacement, distortion and functional weakness.

If there be a predisposition to any disorder of either the respiratory, circulatory or digestive apparatus, the wearing of this garment would inevitably increase the tendency, if it did not actually become the exciting cause of the malady. It is worthy of note in this connection that one of those members of the graduating class, whose coatee exerted the greatest pressure, presented a varicocele of considerable size, the development of which could be attributed directly to the interference with the venous circulation afforded by his coat.

Upon careful inquiry into the grounds upon which its adherents base their desire for the retention of the coatee, four principal reasons were obtained :

1. It is vested with all the interest of tradition.
2. It is neat and military in appearance.
3. It gives the wearer a soldierly figure and a military deportment.
4. It has stood the test of half a century's use, and the officers graduated from the Academy during that time have been men of good physique who show no ill-health traceable to the use of the garment under consideration.

The first reason is purely sentimental in character, and while entirely worthy of consideration, other things being equal, should not be allowed to stand for an instant if the garment can be shown to be detrimental to health.

The second has no weight if a garment as neat and soldierly be substituted for it.

The third is based upon an utterly false principle. It is not desirable that the officers of the Army should be recruited from young men who owe their soldierly figure and military deportment to their tailors. These qualities are eminently desirable,

and every effort should be made to obtain them ; but this should be accomplished by the development of defective portions of the body rather than by atrophy of the more active ones, such as is produced by encasing the frame in an unyielding harness like the present dress coat. A scientific system of physical culture should be established, beginning with the first year and continuing throughout the entire course. The directions in which development is necessary in order to bring the cadet up to the typical physique, should be determined by a series of measurements and tests applied at his admission to the Academy, and repeated at suitable intervals. The deficiencies thus disclosed should be remedied by exercises expressly calculated to remove the defects. In this way the stronger ones will be more evenly balanced in their strength, while the weaker ones will not only be prevented from reducing their powers by an exceedingly unhygienic practice, but will have their physical defects corrected and their entire system educated up to the highest requisites of the soldier. The rejection of the present dress coat, with the occupation of a new gymnasium and the provision of a scientific course in physical education extending throughout the entire course, would serve to mark a decided step in advance—a step from the tyranny of the tailor to the gentle rule of Nature.

The fourth reason is the only one that carries with it any real weight, for it is specious and plausible. Admitting the truth of it, however, it should be remembered that the cadets at the Military Academy are picked youths chosen in the first place in many instances because of their fine physique as well as their mental capacity, and in every case required to have a certificate to the absence of physical disqualifications from a board of medical officers.

Nature is very kind and endures, without resentment, many indignities, and in the extent to which she permits the body to be compressed and distorted we have a striking instance of her consideration for human vanity. In the darker quarters of the earth the head is sometimes squeezed out of shape, and again, the development of the feet is retarded, and yet nature often permits the victims of vanity to attain a green old age.

Nevertheless, Nature is not equally lenient to all offenders, for, starting with a class of men supposed to be in exceptionally good physical condition, as the years of the course pass by the hitherto imperceptible physical defects crop out and the weaker

men fall by the wayside, until, through this sifting process, those who are sent into the Service are of exceptional vigor. They are the men who have been able to resist the sanitary defects of their environments; the weaker have gone to the wall. It is to be expected that the graduates, who have received commissions, should present no physical disqualifications—if they did, the medical examining boards failed to do their duty. In actual experience, however, would not those who succeeded in graduating have been still stronger had the course been free from unsanitary surroundings? And would not many, who dropped out for physical reasons, have developed a robust physique and added greatly to the strength of the Service?

It may be recapitulated then that the dress coat is objectionable because factors, inherent in its construction, co-operate to cause a compression of the wearer's chest and abdomen, producing a deleterious effect upon—

1. The mental apparatus by limiting the nutriment of the brain.
2. The respiratory system, by its mechanical obstruction to (a) thoracic respiration and (b) abdominal breathing.
3. The circulatory system, (a) increasing the wear and tear of the heart, (b) obstructing the flow of blood through the vessels and (c) inducing relaxation and dilatation of the venous canals.
4. The process of digestion by (a) the mechanical action of the ligature of the abdomen, and (b) secondarily through the effect upon respiration and circulation.

Against these arguments in opposition to the garment, the only valid reasons in favor of it are its age and beauty—facts which can hardly be considered of great weight when opposed to health and hygiene.

As a matter of fact, does actual experience sustain the opinion as to the deleterious effect of the wearing of the present pattern of dress hat and coat upon the health of the cadets? A reference to the medical records of the Academy will show that in his sanitary report for April, 1888, the Post Surgeon, Colonel Alden, completely answered this question by the statement that, "indigestion and headaches, attacks of nausea and faintness, and of exhaustion on parade, are more frequent among the cadets than they should be, and are due in some measure, at least, to this interference with circulation and respiration." Troubles such as these would be the natural consequences of wearing a garment like the coatee and a head-covering like the present

dress hat, and would, unquestionably, be obviated by the abandonment of these articles for others constructed with a proper regard for laws of health and hygiene.

*Conclusions.*—In view of the facts which I have here briefly summarized, it was concluded that the dress hat and coat of the Corps of Cadets were inherently faulty in their pattern and manufacture and that they were so productive of evil consequences to the wearers that they should be discarded and articles of a more correct sanitary character substituted for them.

The investigation being directed simply toward the sanitary aspects of the garments discussed, the question of the most desirable substitutes for them may be dismissed at the present time with but a few words. As regards the hat there seems to be a pretty general agreement among the officers consulted, that it might be satisfactorily replaced by a felt helmet of light weight. The white summer helmet is already worn by the cadets and makes a handsome and soldierly covering for the head. The gray color might be extended to the helmet which would enhance its beauty and utility. The helmet could readily be constructed so as to comply with all the requirements of health and would, at the same time, offend none of the canons of military propriety.

A blouse or tunic cut closely enough to the figure to display the form without compressing it, would be an advantageous substitute for the coatee. By various simple ornamental devices a blouse of this character could make a model of chaste ornamentation and would give to the wearer even a more military aspect than the coatee. Moreover, it would afford a satisfactory garment both for fatigue occasions and for mounted duty as does the blouse of the officer or soldier of the Army. The fact that the report of the medical examining board referred to has resulted in the recent adoption, as an addition to the cadet uniform, of a blouse which can be worn on certain occasions, does not diminish in any respect the force of the objections to the dress coat, which is still worn commonly enough to produce the evil effects enumerated, and the entire abandonment of the garment is the only means of doing away with its injurious action upon its wearers.

It has been thought, moreover, that a thorough discussion of the subject throughout the Service might conduce to this end and be productive of much good in other ways; the views here stated then are presented in the hope that, through much criticism and extensive comment, new points may be brought out and a general agreement be attained.