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## MILITARY ASPECT OF STATUS LYMPHATICUS

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During the past thirty years it has been the conclusion of many pathologists who have carefully observed the general configuration of the cadaver at necropsy that the fate of the human body is not a matter of chance but in general is controlled by certain intrinsic physical tendencies that are of congenital origin.

This conclusion is merely in line with the doctrine of a constitutional predisposition to disease, the importance of which has been submerged by the advent of the germ theory. Clinical observers, especially in recent times, have not been so much impressed with the importance of constitutional factors doubtless because the most definite evidences of such tendencies are revealed chiefly at necropsy, and possibly also because the modern clinician is greatly occupied by a multitude of laboratory tests and aids to diagnosis and prognosis, which apply without regard to any constitutional basis of disease.

Recently, the experience of the Medical Department of the Army has revealed in a highly impressive way the fact that, under the stress of military life, certain physical factors which escape ordinary physical examination soon declare themselves most emphatically, with the result that numbers of apparently healthy men die, or break down and are incapacitated, and become a burden instead of an asset in the military force. Any one who has the slightest conception of the general factors leading to disease cannot fail to recognize that anatomic defects are chiefly responsible for the recent discoveries of "irritable heart," "irritable thyroid," nervous instability, functional shell shock, etc. It also seems highly probable, and I have some concrete pieces of evidence to show, that in a great variety of conditions the stress of military life is bringing into action the inevitable force of constitutional tendencies in the unexpectedly fatal outcome of many common diseases and traumas.

Since constitutional defects cannot be remedied, it is of practical importance chiefly to inquire whether there is any way in which they can be recognized, and whether there are any means of avoiding their hazards.

In one form of constitutional dyscrasia, status lymphaticus, it is possible to recognize the pronounced forms during life, and to a considerable degree to avoid its special dangers. I believe that it is of con-

siderable importance that the attention of military medical men, beginning with medical exemption boards, be sharply drawn to the stigmata of status lymphaticus, both for the purpose of establishing rules of procedure in the disposition of such cases, and in order to gather new information regarding the significance of status lymphaticus from the military standpoint, and also in order that the military physician may enjoy the intellectual satisfaction of understanding certain events occurring in the course of disease and injury that are generally quite obscure.

### ANATOMIC CHARACTERS

Status lymphaticus is characterized by a feminine type of bodily conformation in the male, absence of axillary and deficiency of pubic hair, general delicacy of integument, a tendency toward abundant deposits of subcutaneous fat, evidence of rickets, small size of the heart and thinness of aorta and other arteries, persistence of thymus, and hyperplasia of lymphatic tissues in tonsillar ring, ileum and spleen.

Two phases of these physical characters are recognized, in children and in adults, the latter being a recessive stage of the former. In infants and before puberty, lymphatic hyperplasia, large thymus, and signs of rickets are prominent, while in adults the lymphatic hyperplasia is gradually succeeded by atrophy and by a form of sclerosis which Bartels<sup>1</sup> says is peculiar. In adults the unfolding of the growth tendencies of the body brings out the feminine characters of the male physique, and often the persistence of the thymus, while necropsy discloses hypoplasia of the heart and the arterial system.

The scope of the anatomic changes included by many observers in status lymphaticus is considerable. The body is gracefully formed, the limbs rounded, the thorax long, the pelvis heterosexual. Pribram<sup>2</sup> includes genu valgum, persistence of epiphyseal lines, flatfoot, and hyperextensibility of the elbow joints. He found that the outstretched arms exceed the body length in 95 per cent. of the cases, but this relation often occurs without status lymphaticus.

The genitals are hypoplastic (46 per cent.), and cryptorchidism may occur (from 2 to 3 per cent.). Kyrle<sup>3</sup> observed that the testes were usually normal in the gross, but presented well marked interstitial orchitis, without much disturbance of spermatogenesis or alteration of interstitial cells. In certain cases the testes are atrophic. In fifty-five cases Herrmann<sup>4</sup> found the ovaries usually enlarged and much elongated from interstitial fibrosis. Axillary and thoracic hair

1. Bartels: Wien. klin. Wchnschr., 1908, p. 1826; Tuberculosis, 1913, 12, 561.

2. Pribram: Ztschr. f. klin. Med., 1914, 81, 120.

3. Kyrle: Centralbl. f. Physiol., 23.

4. Herrmann: Centralbl. f. Physiol., 23.

is scanty or absent, and the pubic hair in the male ends in a horizontal line, as in the female (96 per cent.). The beard is scanty (57 per cent.), and sternal hair absent (90 per cent.). The hair of the limbs is scanty or absent (65 per cent.).

The skin is delicate. There is a tendency toward abundance of subcutaneous fat, and some subjects are distinctly obese. In certain cases with distinctly atrophic genitals, status lymphaticus is associated with eunuchoidism. In the obese eunuchoids described by Tandler and Gross,<sup>5</sup> persistence of the thymus was believed to exist because of roentgen shadow, but the exact relations of eunuchoidism to status lymphaticus remain to be determined. Very pronounced feminine characteristics belong chiefly to the former condition.

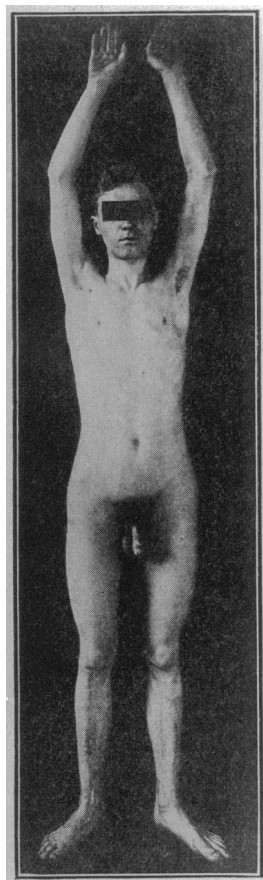


Fig. 1.—Partially developed status lymphaticus in man, aged 21. Patient has shaved only twice. Pubic hair of feminine type. Long, slender thorax.

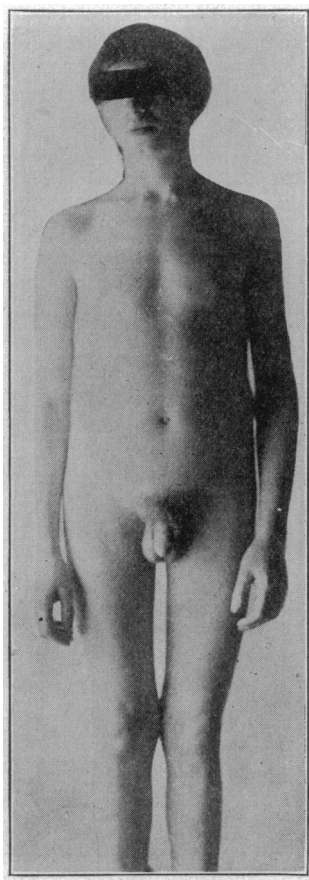


Fig. 2.—Status lymphaticus of feminine type; genitals apparently normal. Photograph lent by Dr. Charles Norris.

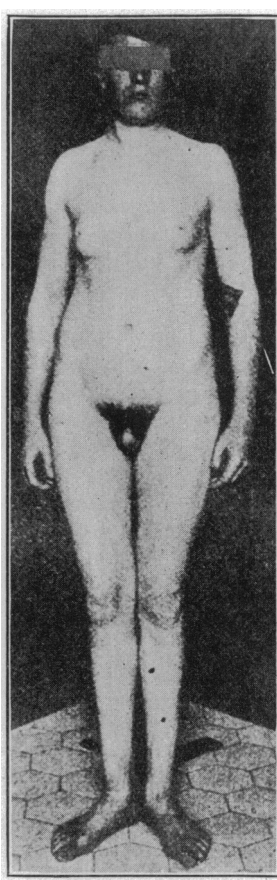


Fig. 3.—Eunuchoidism, a condition probably involving status lymphaticus, in man, aged 22; feminine body; hypoplasia of genitals. (After Saenger.)

In the female the external signs of status lymphaticus may be limited to thinness and delicacy of skin, narrow waist, arched thighs, and scanty hair. Menstruation is usually delayed, the uterus may be infantile, and the breasts poorly developed.

In children the thymus enlargement may be the most prominent feature, and thymic pressure has probably been one of the chief factors leading to the death of infant subjects of status lymphaticus. This organ persists in many young and some older adults, as one of the most significant signs of status lymphaticus. It shows simple lymphoid hyperplasia, and the process may affect aberrant lobes in the neck or in the

thyroid gland. Through its relation to the thyroid it is believed to figure prominently in the cases of status lymphaticus with thyroid manifestations. In most adult subjects the thymus is small or atrophic.

The lymphatic hyperplasia occurs in infants and children up to and sometimes beyond puberty, and is often a most distinctive feature, differing from any other known form of lymphatic overgrowth. The pharyngeal ring of lymph follicles is enlarged (80 per cent.), the lingual follicles being affected more than the faucial tonsils. Rarely the cervical nodes are slightly swollen. Very striking overgrowth of Peyer's patches, especially the lowest, is frequently observed. The splenic follicles are enlarged and plainly visible to the naked eye. Swelling of mesenteric nodes is occasionally seen. The structural changes consist in overgrowth of lymph follicles and lymphocytes. Symmers<sup>6</sup> emphasizes the presence in many cases of degenerative and even necrotic changes in the centers of follicles, and of sclerosis which follows these changes.

Hypoplasia of the heart and aorta is the most prominent of the conditions found at necropsy. There are no systematic data regarding the weight of the heart in status lymphaticus, but the organ is usually distinctly undersized. The aorta is thin and delicate, often to a striking degree. Delicacy of the entire arterial system may exist and form the basis of apoplexy in young adults, and of various functional disorders. Some observers have attributed to the overstraining of a small heart certain forms of interstitial myocarditis occurring with status lymphaticus. With the hypoplasia of heart and aorta Virchow associated chlorosis, which may occur in subjects of status lymphaticus.

Many other abnormalities in the construction of organs are occasionally seen, as lobulated kidneys, hypospadias, polymastia, abnormal fissures, and congenital angiomas, but they are not sufficiently frequent to be regarded as essential. They seem to support the view that some fundamental defect of development exists in these subjects.

#### OCCURRENCE

Since there are all grades of status lymphaticus, its frequency will depend somewhat on the attitude of the observer. Two statistical studies are available.

Emerson<sup>7</sup> analyzed his own and Norris' observations at Bellevue Hospital. Among 3,600 necropsies, 288 (8 per cent.) showed status lymphaticus, 70.2 per cent.

6. Symmers, Douglas: *Am. Jour. Med. Sc.*, 1918, **156**, 40; *The Cause of Sudden Death in Status Lymphaticus*, *Am. Jour. Dis. Child.*, December, 1917, p. 463.

7. Emerson: *Tr. Internat. Cong. Inter. Med.*, 1914, *Med. Sec.*, **6**, Pt. 2, p. 165.

5. Tandler and Gross: *Arch. f. Entwicklungsmech.*, 1910, **29**, 290.

active and 29.8 per cent. recessive; 9 per cent. failed to show any other cause of death, and 242 died of infectious diseases. Recently Symmers has collected the Bellevue Hospital material, finding 457 cases of status lymphaticus among 5,652 necropsies. Of these, 249 were analyzed, showing that 118 were active, 89 recessive and 42 partial or intermediate. It was most frequent between 20 and 40 years. Pribram observed several of the clinical signs of status lymphaticus in 150 among 2,500 patients at von Jaksch's clinic (6 per cent.).

Municipal hospitals, gathering a large number of sudden deaths, show a relatively high proportion. It is obvious that the condition must appear highly important to medicolegal observers, while for the same reasons the general practitioner commonly ignores it, or more often has never had it brought to his attention.

Woodward seems to have suspected that small hearts were connected with sudden deaths. He referred to sudden deaths of convalescents from dysentery, often while the patients were walking about, and in ten of these the heart was noted as small, in four cases weighing  $5\frac{1}{2}$  ounces or less. No cause of death was discovered. Among the general cases of undetermined causes of death, twenty showed small hearts, in eight of which the weight fell below  $6\frac{1}{2}$  ounces, once to 4 ounces.<sup>8</sup> I am unable to find any other reference to this condition in reports from the Civil War.

#### CLINICAL MANIFESTATIONS

Only a brief enumeration of the clinical conditions in which status lymphaticus figures can be attempted within the scope of the present report.

In infants, many cases of unexpected death, occurring instantly, or after rapidly increasing dyspnea or heart failure, have revealed only an enlarged thymus which has mechanically obstructed breathing and heart action. This so-called thymic death is one of the most numerous and best known groups of cases.

Death under anesthesia occurs, in a large proportion of cases, in subjects of well-marked status lymphaticus. Here respiratory failure precedes stoppage of the heart.

Cardiac and arterial hypoplasia dominates the clinical picture in most adult cases. The small heart, even under the most critical estimate, must reasonably be assumed to carry with it defective muscular energy and low metabolism. The subjects tire easily and suffer from palpitation, pain, cardiac dyspnea and low blood pressure, and in many cases of sudden death it has been assumed that the heart stopped beating from exhaustion or from some form of reflex inhibition. Here may be classed the numerous cases of sudden death while bathing, or after trivial mechanical trauma. Many have warned against the careless injection of alien proteins, antisera, vaccines and arsphenamin in subjects of status lymphaticus. While in this field of functional disturbance of the hypoplastic heart the evidence is vague and inconclusive, it may at least be said that these cases are wholly without other explanation, and invite investigation by modern methods. Ortner<sup>9</sup> was quite sure that the small heart is particularly subject to functional disorders and subsequent myocardial changes.

Precocious apoplexy in young adults is a highly characteristic termination of status lymphaticus, is compar-

atively frequent, and may be expected especially in military service. Norris encountered many such cases at Bellevue Hospital. I have examined several of them collected by my colleague, Schultze, in which the cerebral vessels were extremely delicate and usually free from sclerosis. They are clearly distinguished from nephritic cases in young adults, but nephritis may be added.

In relation to infectious diseases, status lymphaticus appears to have much significance. It has long been known that these subjects do badly under infection. Elser and Huntoon<sup>10</sup> found that in all their fulminant cases of meningitis the patients were subjects of status lymphaticus, and this observation has been supported by others. McNeil<sup>11</sup> reports fulminant pneumonia with

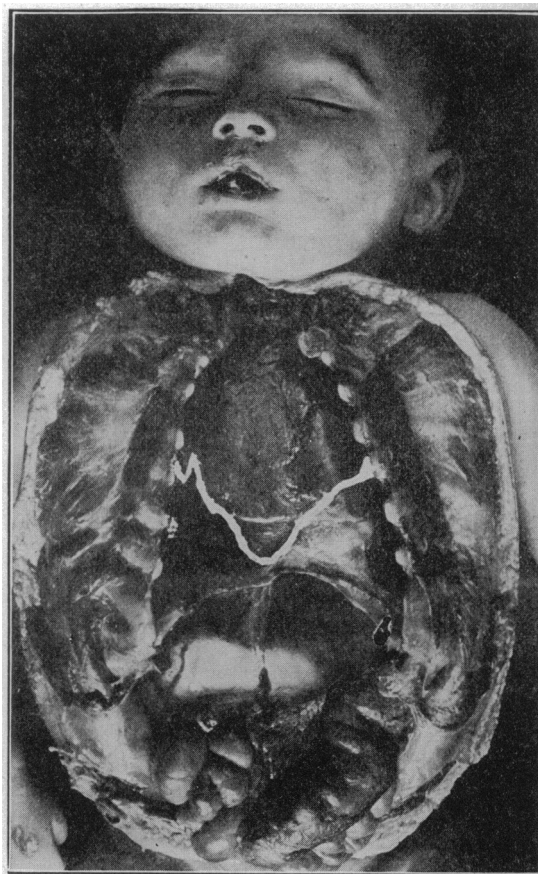


Fig. 4.—Hypertrophic thymus in a new-born infant; case of Dr. Symmers'.

status lymphaticus. Symmers reports fifty-five necropsies on meningitis, 60 per cent. in subjects of status lymphaticus. In thirty of these cases of known duration the disease was fatal in an average period of 3.4 days, and nine patients died within forty-eight hours. In thirteen subjects of status lymphaticus dying from typhoid fever, the average duration was fourteen days. In his series, about 10 per cent. of all subjects of status lymphaticus presented acute infective lesions of the heart valves. Daut<sup>12</sup> found that more than 25 per cent. of patients dying of diphtheria were subjects of status lymphaticus.

The relation to tuberculosis shows several phases. The combination of rickets, lymphatism and scrofula

8. Woodward: Medical History, War of the Rebellion, Med. Vol. 2, 502.

9. Ortner: Wien. klin. Wchnschr., 1891.

10. Elser and Huntoon: Jour. Med. Research, 1905, 9, 89.

11. McNeil: Brit. Med. Jour., 1914, 2, 576.

12. Daut: Jahrb. f. Kinderh., 1898, 47, 141.

in children is emphasized by Bartels. Subjects of status lymphaticus in general show a high resistance to tuberculosis, which takes the form of caseous lymphatic lesions, solitary brain tubercle, atypical bone lesions, etc. Addison's disease nearly always occurs in subjects of status lymphaticus (Bartels).

In exophthalmic goiter, thymic enlargement is very common, and practically all fatal cases show pronounced hyperplasia of the thymus and often other signs of status lymphaticus. The high mortality of operations on the thyroid may thus receive a partial explanation. Simple goiter is relatively common in status lymphaticus.

The condition in status lymphaticus appears to be identical with none of the specific disorders of the endocrine system, but there are definite indications that these glands are involved in various ways. The bodily configuration has some of the features of adiposogenital dystrophy. Many of the cases of hypophysial dystrophy of Froelich's type are associated with other and pronounced signs of status lymphaticus.<sup>13</sup> Hypoplasia of the genitals is a common feature in both sexes. The hyperplasia of the thymus can hardly be without some bearing on the question of its supposed internal secretion. Hypoplasia of the suprarenals is repeatedly observed. In this territory may possibly be found the key to the complete solution of the complex situation in status lymphaticus.

The nervous system is essentially concerned in status lymphaticus, but little is known of the nature of its relation. Rokitsansky spoke of overdevelopment of the brain in early life in these subjects, and Bartels has noted multiple foci of gliosis with a tendency to glioma. No definite anatomic changes in the brain have been established in status lymphaticus, but the clinical data are in some respects quite impressive. Ohlmacher<sup>14</sup> found that the great majority of fatal cases of epilepsy are subjects of status lymphaticus. The condition is relatively common in the mentally deficient. Not a few cases escape all other hazards, only to end in suicide. Bartels, from a study of 122 cases, concluded that status lymphaticus is practically constant and often pronounced in subjects of suicide. Miloslavich<sup>15</sup> studied 110 cases of suicide in military service, finding 80 per cent. with signs of status lymphaticus, as follows: thymolymphatic, 47 per cent.; lymphatic, 21 per cent.; thymic, 8.5 per cent.; partial, 3.5 per cent.

Symmers found pronounced hypoplasia of heart and aorta in all of five cases of caisson disease. This observation falls in line with others which indicate that the entire cerebral vascular system in these subjects is defective. It may be of importance in aviation.

#### PATHOGENESIS

The central factors in the origin of status lymphaticus must be found in the congenital hypoplasia of the cardiovascular system, and in hyperplasia of the thy-

mus. Nothing is known of any hereditary element. The small heart and the blood vessels do not grow up with the body, but remain delicate and inadequate. Yet the skeleton, muscular system and organs are often highly developed in these subjects. In some respects this maladjustment may be brought into relation with a persistent and overactive thymus. Gudernatsch has shown that thymus feeding of tadpoles causes overgrowth of the body without corresponding maturation, which may be accelerated by addition of thyroid substance to the diet. Genital hypoplasia, although present in some cases, is not constant or as a rule prominent, but may be connected with a persistent thymus. Henderson<sup>16</sup> and Hatai have shown that the thymus tends to persist in castrated animals.

In subjects of this anatomic constitution there is evidence that external factors play a part in developing the lymphoid hyperplasia. Cameron,<sup>17</sup> who finds that more than 40 per cent. of the children coming to necropsy at Guy's Hospital are subjects of status lymphaticus, attributes the lymphatic hyperplasia to chronic inflammation of the various mucous membranes. He designates early status lymphaticus as status catarrhalis, or the exudative diathesis, finds the cause in poor hygiene and excessive carbohydrate feeding which favors wateriness of the tissues and rickets, and urges the remedy of correct feeding. His views deserve careful attention, but do not remove the necessity of a congenital basis of the condition. Blumer,<sup>18</sup> and especially Symmers, impressed by the presence of irritative hyperplasia of the lymph follicles with degeneration and necrosis, develop the idea of autointoxication, and Symmers thinks the intoxication of anaphylactic type, the system becoming sensitized by repeated discharges of lymphocytic proteins. The adjustment of this line of speculation with established principles of immunology is not entirely clear.

The question whether the enlarged thymus mechanically compresses the trachea in infants seems still undecided. That there is a reflex mechanism which stops the heart under conditions of mild nervous shock seems highly probable. Many clinical observations show that the vasomotor system of these subjects is quite unstable and very sensitive. Laryngismus is common in the children, and many fatalities are preceded by convulsions.

#### CLINICAL DIAGNOSIS

Well-marked cases of status lymphaticus are easily recognized by inspection of the whole body. An enlarged thymus in children or young adults may be recognized by the roentgen ray, but it is improbable that the lesser size of the simple persistent thymus can be determined by any method. The pharyngeal ring of lymph nodes is too often swollen in other conditions to serve as more than a suspicious sign. The lymphocytosis commonly present is too indefinite to be of any positive diagnostic value. I know of no observations

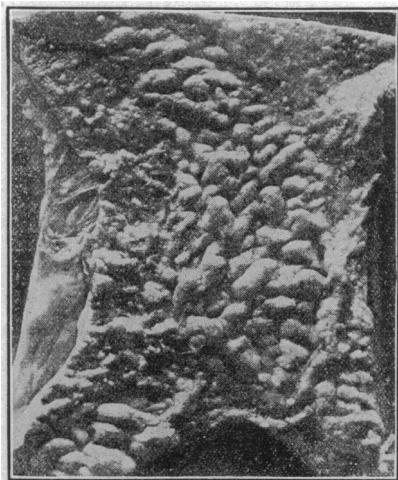


Fig. 5.—Hyperplasia of lowest Peyer's patch in status lymphaticus. From the author's case of chloroform death (1897).

13. Cushing, Harvey: The Pituitary Gland and Its Disorders.  
14. Ohlmacher: Bull. Ohio State Hospitals, 1898; New York Med. Jour., 1898, **68**, 443.  
15. Miloslavich: Virchows Arch. f. path. Anat., 1912, **208**, 44.

16. Henderson: Jour. Physiol., 1904, **31**.

17. Cameron: Proc. Roy. Soc., 1917, **10**, No. 8, Dis. Child., p. 133.

18. Blumer: Bull. Johns Hopkins Hosp., 1903, **14**, 270.

by the roentgen ray on the appearance of the hypoplastic heart and aorta, nor of studies on the blood pressure.

The lesser grades and partial forms of status lymphaticus must probably be marked as unsafe territory, especially for the military physician. Nevertheless, when several of these less definite signs can be demonstrated in subjects of slightly developed bodily characteristics, a probable diagnosis of status lymphaticus may often be established with reasonable certainty. None of these limitations apply to the recognition of status lymphaticus at the necropsy, by the systematic examination of all the organs, followed by microscopic control.

On the other hand, the suspicion of status lymphaticus should be entertained by the military clinician, not only in the obvious cases, but in dealing with any of the manifestations mentioned above, such as irritable heart, thyroidism, nervous breakdown, epilepsy, shell shock and fulminant infectious diseases, and this suspicion should be followed to the necropsy table.

With these well-attested evidences that status lymphaticus carries with it a defective vitality that results in sudden and unexpected death in many conditions of trauma and disease, it is obvious that this dyscrasia must be of considerable importance in military medicine. It would seem desirable that intelligent efforts should be made to detect the condition whenever present, that definite procedures should be adopted when it is found, and that systematic study of the material collected by the Army medical forces should be undertaken in order to elucidate many problems that still remain unsolved regarding its origin, nature and significance:

1. In the physical examination of drafted men a pronounced grade of status lymphaticus ought to be recognized at a glance, and it would seem reasonable that the subject should be rejected as unfit for active military service. Whether it is practically or economically wise to accept such subjects for any form of military service can be determined only by systematic clinical observation of those already in the service. Such a study would occupy years, and ought to be undertaken under the favorable circumstances that exist in the Army and cannot be duplicated elsewhere.

2. In the subsequent examination of men already in the service, the presence of status lymphaticus should be noted, and these men should be assigned to the less hazardous occupations.

3. In the present state of knowledge, the most substantial evidence regarding status lymphaticus and the chief source of material for study that may elucidate its problems must still be obtained from postmortem examinations. The presence of status lymphaticus should be looked for in every postmortem examination, and affirmed or negated in every protocol. The anatomic evidence of the condition should regularly be preserved for further study, and the effort be made to discover any further extensions of the anatomic changes that may possibly occur in the condition.

At present the indications point to the glands of internal secretion as most likely to throw new light on the nature of the condition. In this field histologic studies are required on the thymus, thyroid, hypophysis, pineal gland, carotid gland, pancreas, suprarenal, testis and sympathetic system. Any undertaking of this sort to be adequate can hardly omit attention to any organ in the body. The bones should be examined for old rickets, and the bone marrow for evidences of hematopoietic disorder. Since the circulatory system long retains the impress of status lymphaticus and is a specially important factor in the adult, observations on the heart, its musculature and nervous apparatus, and on the aorta and arteries are called for.

4. The clinician has an interesting task and a complex function to perform in connection with the study of status lymphaticus and in the employment of the doctrines that have accumulated about it.

The final test of the existence and importance of a bodily constitution of defective general vitality must be clinical. Since the majority of patients survive to middle life, most of them come repeatedly under clinical observation. Since there must be all grades of status lymphaticus, the condition often merges with

that known as the idiosyncrasy of the patient, recognition of and respect for which constitute a substantial part of the art of medicine. In general, the clinician must determine how these subjects react to injury and disease.

Very numerous situations previously stated, showing that many patients react with sudden death, quite sufficiently impress the general clinical importance of status lymphaticus. Of the manifestations of the lesser grades of the condition little is known, and here the need of keen observation and sound clinical judgment is apparent. It would seem easy either to exaggerate or to undervalue the clinical importance of status lymphaticus. It seems not improbable that some of the

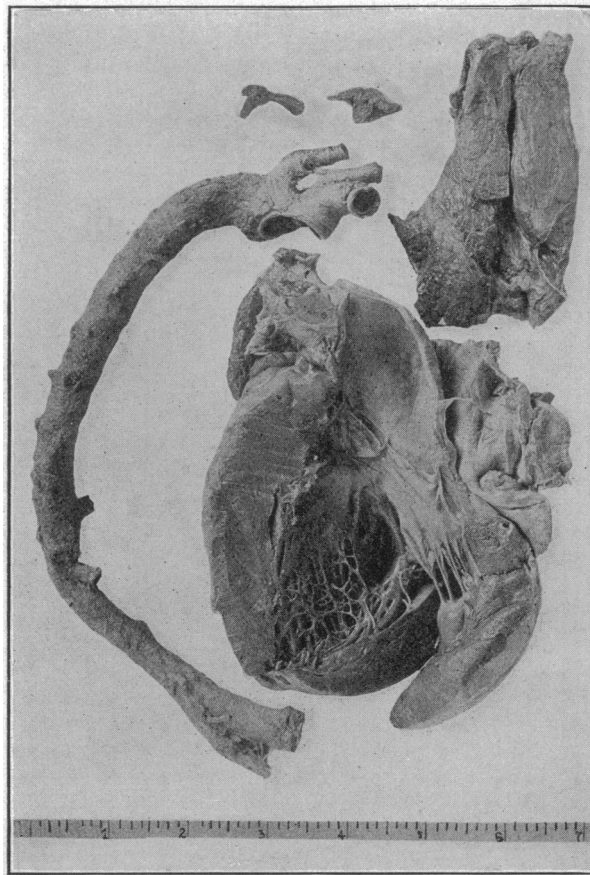


Fig. 6.—Hypoplasia of aorta and suprarenals, and hyperplasia of thymus in a girl, aged 20 years, dying of cerebral hemorrhage. Weight of heart, 307 gm.; thymus, 41 gm.; suprarenals, 10 gm. Aorta, widest external circumference, 5 cm. A case of Dr. Otto Schultze's.

best of the world's work has been done by subjects of status lymphaticus, but in the military field that work must have been fortunately adapted to the physical defects of the worker. Therefore, it seems not necessary for the clinician to condemn every subject showing status lymphaticus, but rather to find the subject's proper place in the military organization.

Speculation which seems legitimate suggests several topics of research that may be profitable from the clinical side.

No surgeon can afford to ignore the importance of status lymphaticus in the choice and administration of anesthetics.

The employment of injections of alien proteins and of arsphenamin should be undertaken with caution in subjects of status lymphaticus.

Further observations on the course of infectious diseases in subjects of status lymphaticus are called for. The idea that a fulminant course of meningitis or pneumonia is largely determined by status lymphaticus challenges the present conceptions of most clinicians and bacteriologists, but cannot be contested except by carefully accumulated clinical data.

The resistance to tuberculosis claimed by Bartels for subjects of status lymphaticus may be determined by the clinician and the pathologist. Not many clinicians will be prepared to accept the statement that Addison's disease occurs almost exclusively in subjects of status lymphaticus, but this question can be determined by the material collected in the Army.

Those who are interested in the doctrines of internal secretions may find profit in pursuing the relations of status lymphaticus to the ductless glands.

The neurologist meets phases of status lymphaticus notably in suicide, epilepsy and possibly in certain forms of mental disturbance. It would be interesting to know if any considerable proportion of patients with shell shock or other forms of nervous breakdown, with or without anatomic lesions, belong in the category of status lymphaticus. Given an overdelicate cerebral vascular system, one has an obvious predisposing condition to miliary or microscopic hemorrhages, such as occur in concussion and carbon monoxid poisoning. Almost the entire anatomic picture of status lymphaticus lends itself readily to the explanation of physical and mental breakdown on the battle field.

The irritable heart presents itself as a possible phase of the defective circulatory apparatus of status lymphaticus and one in which clinical observations on a large scale could be carried on.

All of these suggestions, however, must be offered with the greatest caution. Otherwise status lymphaticus may be lost in a maze of minor and ill defined clinical disorders of very doubtful relation to the very substantial anatomic alterations that appear in the bodies of pronounced cases. Such a fate seems to have overtaken neurofibromatosis at the hands of several continental writers, who have attempted to attach to this extremely specific anatomic condition all manner of disorders of the skin and nervous system.

The present conditions in the military service in America, when numerous races and classes are brought under the draft, seem to offer quite unique opportunity of determining the economic and military importance of definite status lymphaticus, and it is to this aspect of the subject, rather than to its possible ramifications, that the present note is directed.

Army Medical Museum.

## SUPPURATIVE GINGIVITIS WITH ALVEOLAR INVOLVEMENT

### A NEW SURGICAL PROCEDURE \*

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It is my intention to deal with that phase of the disease commonly known under the confusing name of pyorrhea alveolaris, which as indicated by its histopathology is a purely surgical disease and must,

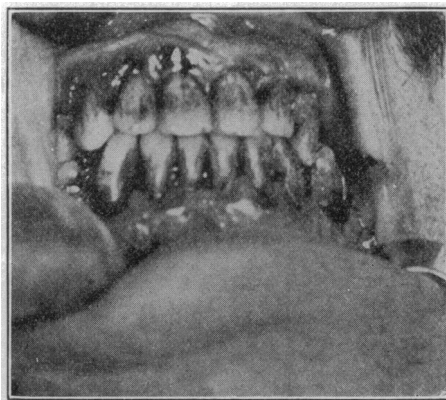


Fig. 1.—Appearance before operation.

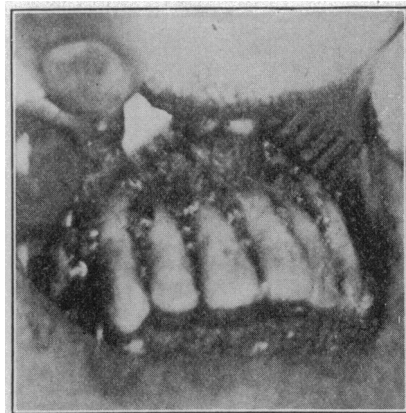


Fig. 2.—Flap lifted and retracted.

therefore, be treated surgically, this alone promising an expedient and a permanent cure.

For the purpose of clear presentation, I shall briefly state that I prefer to call the diseases involving the gingivae and their soft and hard underlying and adjacent tissues by the generic name given them by Talbot, of gingivitis. Further, that for purposes of practical study, I classify gingivitis into superficial, hemorrhagic and suppurative.

The first class of the disease and the less advanced forms of the second and third classes are ordinarily amenable to proper dental treatment (scaling, polishing, etc.) in conjunction with correction of such local and constitutional disturbances as may be present.

The more advanced hemorrhagic cases, and especially the advanced suppurative cases, accompanied by degenerative processes of the alveolar bone and the soft tissues immediately covering it, are usually either traumatic, being due to long neglected accumulations of salivary calculi or other irritants (ill fitting fillings, inlays, crowns, bridges, etc.), or they are a manifestation of a disturbed metabolism due to such diseases as diabetes, syphilis, tuberculosis or chronic or acute

\* Read before the Section on Stomatology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.