Adenoid after Conchitism—
want of practical tendancy stem from the
lack of it. Especially as regards the Practice
of a new Vaccine of Variolae, without
any indication. A departure or selection.

— Tetanus. —

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The subject which I have selected for my Essay is one which is wrapped in great obscurity both as to its cause, and its treatment. For as to Pathology as far as has yet been observed, there is no theory so well established as to make a choice consistent with the idea that I would in any way lessen that obscurity, but that I might make myself acquainted with the most important facts known regarding it, the sanity and the inscrutability of the disease, rendering this task the more incumbent upon me. As many imperfections will be found, but I hope I may have succeeded in taking notice of the principal facts, and that in as doing I have fulfilled the object of my Essay, writing with these few remarks I offer the following page.
Tetanus derived from the Greek word τετανος to stretch comprehend under its signification a class of diseases the principal characteristics of which are tonic spasms of a certain member of muscles. Certain terms have been used according to the extent and predominance of the muscles affected. viz. Tetanus, Apoplectic Tetanus, Ophaloeutic Tetanus and Depression Tetanus. Of these I propose to treat more fully hereafter.

The disease may be classed either according to its causes or progress. Under the former we have 1. Traumatic and 2. Symptomatric. Tetanus which arises from wounds or other injuries to this may be added the Tetanus Mesenteric, a form of the disease to which new born children are liable.

1. Idiopathic Tetanus which presents the usual features of the malady but is unconnected with external injury. Under the latter we have 1. The acute which generally accompanies the traumatic form of the disease.

2. The chronic, which is the most oft seen in the Idiopathic form especially in this country. The place which I propose to follow is to state first causes. Second, symptoms under which the mode of termination will be included. And lastly treatment.
causes. It may so happen to occur much more frequently in males than females, and in those of a strong, robust, and nervous, habit of body than in the weak. This may readily be accounted for by the greater exposure, if the former feel consequently their greater liability to injuries, or other exciting causes of the disease.

Iatrogenic or Symptomatic Tetanus, is found to supervene on the slightest scratch, abrasion of the skin, as well as after large wounds in other parts, or lacerated ulcers, through fractures etc.

The time at which it may occur after the infliction of an injury varies, indeed, it seems almost impossible to fix a period as authors differ so much on this point. The longest period recorded was ten weeks.

Several cases are related in which it occurred within a short time after the receipt of the injury. Dr. Robinson relates a case in which the disease showed itself a quarter of an hour after the infliction of the injury. Sibly Mace states that he has seen it occur at all periods, from the second day, to the end of the fourth week. In eighty-one cases record by Dr. Bland, symptoms if there were first developed from the fourth to the fourteenth day after the receipt of the injury, whilst in nineteen others they were noticed on the tenth day. Sibly mentions a case in which it occurred from the
lodgement of a fish bone in the throat.

Havers says, that he never knew a clear incised wound, inflicted without contusion, produce the disease. The period at which an attack of spinous isomotile is to occur, is that of commencing catarrhization. It seems established from observations and statistics, that the longer the interval between the reception of the injury, and the appearance of the disease, the more chronic will the case be, and the greater the chance of recovery.

In some cases referred to by him healing took the symptoms did not show themselves until four months after the injury, only two died.

The disease has been known to arise in persons whose wounds are perfectly healthy, and also in those where catarrhization, and eczematization of the injured part, has been accomplished for some short time. The manner in which Woodburneth accounts for this is that when the wound was in a painful, and bad state, the disturbed condition of the nervous system has produced disease of the digestive organs, which reacting upon one another, produce such an irritative condition of the system, that although the wound has healed, and there is no longer any local irritation, yet the disposition to faintness comes into activity. It is observed that in this disease a disturbed condition of the
Alimentary canal eats so that the abdomen's region would appear to be some out in the instance of large wounds, but it will not apply to cases were a mere scratch, so abrasion of the skin has been received as here the local irritation would be so slight (if any) that it could not disturb the nervous system. But fever is looked to look upon the disordered state of the locality as a cause of the disease; but this cannot be looked upon as a cause, for if it were so fever might be common as cases of reordered condition of the locality are of every day occurrence.

The disease is common in the warmer climates as the Indies, and it is observed to prevalent more at the hot seasons, and during sudden changes from hot to cold, especially where the atmosphere is damp. It is also said to be more frequent in marshy situations, and countries bordering on the sea, than in lofty, dry localities. Fever is observed the most liable to it these while. Some authors have supposed that the reason of this is that the former have a greater predisposition. It must be taken into consideration their imperfect clothing the body being exposed during the day to the sun's beam, or by the tree, and at night to cold, and exposure, from their frequently sleeping in the open air, and their improper food, whichlectic their
liable to intestinal convulsions, and women as reasons for their being more prone to the disease.

If late yearowing to their improvement in habitation, clothing, and food, its frequency is greatly lessened.

Dr. Ellison states the reason is by the blacks, are

more robust than the whites, in account of the

greater alternations of temperature, which they

experience, from the colours of their bodies that

substances radiating heat much sooner than

light ones.

This statement together with

their mode of life, may perhaps in some degree

account for their greater proneness to the disease;

for as before stated it is found to be more common

in the robust than the weak; also a denuded

state of the alimentary canal, is observed desirely

and the case of the blacks, by their kind of food

render them peculiarly liable to it; again the

disappearance a comparatively less frequency

now than formerly would favour this idea.

In former years the disease was far more common

after injuries, and operations, there now this

improvement is due to the superior methods

of operating; and treatment of wounds followed

at the present day. Dr. Reid states that in the

middle of the last century five out of six cases of

expectoration were fatal, whereas now it is rare.
Istoconus ascentiun, promatium. This as its name implies is the form of the disease to which infants are liable. It presents the usual character of the malady, although it is observed that the muscles of the lower face are most frequently affected, hence the application of the term Disease. It is observed to be more common amongst the infants of black than those of whites, this difference may be accounted for by their greater constitutional liability, and also by the improper care which they receive from them. Dr. Hancock remarks that it is so common in the colonies of Guiana, and Demerara, that none there two half of the infants born there fall victims to the sickness. The fatality is so great as to every 100. Those it occurs it is generally found to prove fatal. Dr. Valentine states that he has several cases in America, but never witnessed any case. Dr. Wragge remarks that it generally proves fatal in the third day, but when rapidly developed, it often destroys in less than 24 hours. This disease has been thought by some to arise from irritation in the alimentary canal, produced by retention of the mucus. Dr. Pearson attributes it to cold as he has often seen it occur after the mucus has been discharged. Harry thinks it is probably owing to the contact of the external air.
in the chie which has been previously accustomed
to warm and soft medium. Dr. Bolles has
attempted to show that it arises from erosion
of the umbilical i its subsequent inflammation
and ulceration. Scamper attributes it to improper
placement of the cord. If this is to be looked
upon in the light of a cause of the disease it can
only he in conjunction with an unrelated state
of the syphyle generally derived either from some
local cause, as a reversed condition of the bladder canal;
prognosis in the spinal marrow, giving little
from malformation in the presence of disease
assisted in the treatment of the disease, is shown by the
statements of Dr. Blacke, in reference to the
lepery hospital at Dublin where by paying attention
to the free ventilation of the ward, the mortality
was reduced from 17 per cent. to 5 or 6. In the West
Indies it has been observed sometimes to spread
in one estate and not another, this has been
attributed to the healthier atmosphere and better
food of clothing of one over the other.
In cases recorded where mothers were
affected with Titerus a few hours after delivery
inches the children. There ceases as soon as the
children it looked upon as evidence of leprosy.
IStanus if we are to believe the explanation given as to its cause. The umbilical cord is composed of two umbilical arteries and a vein; neither symmetrical in blood-supply have except their course to exist in its structure, a branch of nerve from the spinal column has been occasionally seen passing through the umbilical ring and extending to a short distance below the cord. But this has been denied by many good anatomists, since such is the case there is here about any means of conveying an impression to the spine, consequently some other explanation must be sought for. Inflammation of the vessels has been by some thought a cause, but this never "nearly" takes place unless there is necessary for their inclusion, &c. if it were, or this if itself could not account for it as the serious influence is wanting. Again in almost all cases of compound fractures laceration of the vessels must take place to a great extent, and we can conceive the vessels from time to time to the spine and yet we find the disease rare in such cases. In its analogy to hydrophobia it being a systemic disease, arising in the obscure way from inoculation then increases the state of the wound and may very precipitation to its occurrence.
from a mere scratch, a abrasion of the skin where if any nerves are injured, they can only from small filaments and the irritation, red inflammation, consequent on it insignificant. It being often stopped by removal of the injured part. Its being confined to certain counties, that disease, Quaile observed, that it occurred rarely on the Mainland of Ireland but its effects were most destructive in Sculvery, one of a group of small islands almost composed of land so that its population is kept up by emigration from the mainland. The pain of the brace during delivery has been supposed by some to be the cause of its occurrence on Infants; the influence being conveyed from it to the spine. But in all parts of the world, this is continually occurring but yet we find the disease rare, and it is not established that it is more common amongst blacks, and yet their deliveries are far more easy than those of white women.

As regards the general received theory that the disease arises from irritation of the nerves, we have the following facts. That it is found to arise after wounds whether lacerated or not. The spasms are often worse in the injured part. That sometimes they are confined to the site on which the injury exists. That lacerated wounds give rise to it most. The division of the nerves sometimes itself.
Preepural Tenderness. This belongs to the Tumidate partition form of the disease. After abortion or miscarriage, we have a raw surface left in the uterus from the separation of the decidua, which is a thickened and separated portion of its mucous membrane. The reason generally it occurs occasionally in such cases is because the uterus is supplied by nerves from the sympathetic system, and it is in those facts supplied by coccygeal spinal nerves, that the disease is most common. The time at which it may occur after parturition or miscarriage varies; some occurring almost immediately, thus not for several days. The treatment in the disease is as follows: Keep the patient, do not let her be excited with talking, or mental excitement. If the breast are drained give purgatives. Begin the operations as much as possible by antispasmodics. Observe the stability of the nervous system, by sedatives, as opium, &c. Tobacco. Do not let her attempt to eat or drink, but administer nourishment by means of enemata, in fact you must follow the same treatment as in ordinary Tenderness, viz. relay the enemata as much as possible, and allow the irritability of the nervous system.

Steepathic Tenderness. This appears to be common in warm climates and occurs most frequently.
after sudden changes of temperature, exposure to cold, heat, damp, will often bring it on independently of any other known cause; several cases of the kind have been recorded. Dr. Balmain relates the case of a man who had his head shaved, being forced rigid with vertigo, from sleeping without his night cap.

That the state of the intestines exercised a powerful influence over the disease, is shown from the fact that persons who were affected with it have recovered on the exhibition of warm or other soothing matters. It is a complaint favoured by mental excitement, and in such cases a probable cause will generally be found to have pre-ecisted; although it may escape our notice.

Symptoms. These vary according to the intensity of the attack, and the number of muscles affected. Different terms have been used according to the set of muscles affected; thus the term Bellous is used when the muscles of the lower part of the face are affected, producing what is commonly called lock-jaw. Spasmodiomy, when those of the back are principally affected, the patient involuntarily altering his posture, the head, neck, and shoulders. Rhinorrhoea, when the lateral muscles are affected, thus causing the body either to turn one side or the other. Emprosthetous =Nor when those on the anterior of the body are
chiefly complicated thus peeling the head forward in the chest, and flexing the thighs in the abdomen. Sometimes the urine comes on suddenly, but generally pneumonia symptomatic view themselves, thus if it comes from a secondary pain is generally complained of in it, and also in the surrounding parts sometimes referring to the spine; burning is also observed, and a certain cram-pish feeling is experienced by the patient. All the muscles which are in any way under our control are liable to become affected. When a single spasm comes on, the muscles of the neck, and lower jaw, generally become first affected; she becomes to imminent strength to come on slowly, the jaw gradually closing; sometimes it occurs suddenly; the jaw closing violently, at varying firmly clenched. Then the patient experiences difficulty in rotating the head. A severe location is felt at the surface cartilage, extending to the spine, occasionally spasm of the muscles back, and abdomen, this pain is severe, most probably in spasm of the diaphragm, and when it is very severe, there is usually Spasmodicus which seems to arise partly from the patient's throwing himself back in order to release the severe tension. The other is covered with a profuse perspiration the mouth
and face are dry, and any attempt to swallow produces such painful paroxysms, that there is complete inability to breathe or take nourishment. The angles of the mouth are drawn up, the eyes fixed and prominent; the brows contracted, the alae of the nose elevated, and the nostrils expanded thus producing the most horrible appearance that can be imagined; and the distressing features is often so great that the patient is not recognized by his most intimate friends. The shoulders are drawn forwards, the tongue is frequently forced between the teeth, and then often becomes severely lacerated adding greatly to the hideous appearance. Desperation is heard, and destitute, the pulse is quick, weak and irregular, as the disease advances the pain at the preceding becomes greater, the paroxysms more frequent, a painful feeling of suffocation is felt, and their death frequently occurs suddenly. Sometimes all the symptoms disappear before death, and the patient feels as though from exhaustion. The continued contraction of the muscles, is often unattended with the paroxysms, producing the suffering. There have been cases mentioned where the patient experienced a pleasant tingling, sensation. Harvey mentions the case of an officer of this kind. As the disease advances the slightest noise or the weight of
air will often bring on a paroxysm. The muscles of the head and neck are most frequently the seat of spasm, whilst those of the wrist and hand are seldom affected. The spasms sometimes occur only in the superior limbs, and it has been observed that they are more painful in that region than elsewhere. In several cases the urine is found highly coloured and scanty, but this seems to depend upon the amount of perspiration that takes place during the disease, as according to its intensity, the general sensation is modified, both as to its quantity and quality, for when the perspiration is slight the urine is generally observed to be normal. The bowels are generally observed to be constipated, some have supposed that this is owing to spasm of the muscular coats of the intestines, but this is hardly probable, as we should expect to find the patient complaining of pain, as in colic, which we do not. This condition may be produced if it had previously been aggravated by the large doses which are generally given during the disease; also the excess of perspiration, by depriving the forces of their proper amount of moisture and the rendering them hard, lead to spasm of the abdominal muscles, esophagus, and rectum. The existence of such a condition will of course tend to greatly aggravate the disease.
The pulse is found to vary. At the early stage of the disease, it is not much accelerated; but, as the paroxysms increase, it becomes frequent, weak, and threadlike. Mr. Boyd says the pulse varies with the progress of the disorder from a small and fuller, and from a full to a quick irregular one. The intellect generally remains clear, and sometimes below the paroxysms the patient is more cheerful. The sense of touch and hearing is not increased, although in the acute form of the disease the slightest noise or contact will often bring on a spasm. Appetite generally remains good notwithstanding the inability to swallow. The pupils are generally contracted. Tongue at the commencement of the disease is usually moist, but subsequently owing to the progression of it becomes dry. During sleep the muscles are observed to be relaxed, but if the patient be aroused a spasm of spasm will be produced which will go off on the patient falling asleep. This was well observed in a case of Mr. Gray's, he found that when his patient lay asleep the muscles were perfectly relaxed, but on exciting a spasm was instantly produced which subsided on the patient again falling
akleep. It is only in chronic cases, nulce there
is a considerable interval between the attacks,
that the patient can obtain sleep. In acute
terms, the patient may fall asleep, either
from exhaustion, or from the effects of the
narcotic medicines; but it is only for a short time.
This is generally hot. Perspiration profuse,
which may be attributed to the violent muscular
ejections of the patient. Harvey thought when
it existed, when occurring on the chest and
abdomen. In the chronic form of the disease
the symptoms are more gradual than in the
acute; the interval between the paroxysms
vary from a longer to a shorter period.

Modes of Termination. It may terminate by
resolution; or it may prove fatal. When it
terminated by resolution, the case is generally
of a chronic nature, few acute cases ever recover.
Recovery takes place very gradually, and even
after the spasms have disappeared, it is a long
time before the muscles receive their proper
force, and power of action. There are several
cases mentioned in which the rigidity of the
muscles continued for several months after
recovery. Death may occur from asphyxiation
or exhaustion. Some have died from spasm
on the chest.
Apoplexy: This may occur in two ways either from spasm of the glottis, thus causing almost-instantaneous death; or from spasm of the diaphragm and the muscles concerned in the depression and contraction of the chest. In this case death takes place slowly, from the lungs becoming congested, owing to the impedingment to the flow of blood through them from the compression exercised by the spasm of the chest, diaphragm, and the respiratory action becomes stopped.

Inhalation: When death takes place from apoplexy, the paroxysms accompanied with profuse perspiration, which may have lasted for several days, gradually becomes less acute; frequent, the pulse diminishes in frequency, and the patient gradually sinks. Death occurs from the heart forces being worn out from the continued paroxysms, but the patient's inability to take nursehood.

Diagnosis: The only disease with which it will all likely to be confounded is hysteria, and we have hardly any difficulty in distinguishing it from this. If you have any doubts, you may soon satisfy yourself, by inquiring into her history "for the disease is most common among females" by noticing her appearance, whether the hair
At its commencement it may be most true for Hydropobia but the history of the case will at once decide.
pale weak appearance; by ascertaining whether the patient fevers are deranged which is generally found to be the ease. And whether the symptoms are capricious, as are generally seen in these cases that the patient are particularly fond of eating wherors, very careless with the breath. If you find these symptoms to exist you may be certain it is hysteria. Supposing during the paroxysm, you have no distortion of contenance generally at such an alarming procession. Although sometimes after the paroxysm is over, the patient will remain still, with her eyes fixed, her countenance, exhibiting an aspect of fear. Usually also there is a great quantity of pale, limpid urine poured. These signs will serve to distinguish the disease.

The effects arising from an over dose of Mercuria, or Thyocnia, resemble Tetancs. If either of them have been given in moderate doses, the spasms produced, although at first strong gradually appear and at last cease, as the effects of the poison grow off. If they have been given in large doses, the Tetanic spasms are assisted, that it is quickly fatal, much sooner than ordinary Tetancs. Dr. Watson gives two cases where Tetanic spasms arose from the Worcester of Thyocnia, and where in a few hours the spasms ceased.
The only remedy given being bracing and water.

Pathology. To pursue the pathology of the disease in bruce, our knowledge of its cause being uncertain. There is no doubt that the disease consists of an injected or hypergelled state of the reflex spinal system, as shown by the dilated mesencephalic contraction which accompanies the disease. Various morbid appearances presented themselves, but not such as threw new light on its cause.

The special blood. On examining the very frequent "according to having always" fluid the reflexes congestive, and more or less lymphoid fluid, between the membranes. The apparent congestive state of the reflexes appears to be greatly affected by the position, in which the body is placed after death; thus if placed on its face, those reflexes in the foot of the cord will be congested, whilst if turned it will be vice versa. It has also been observed that the quantity of fluids is influenced by position. Selye observed that in the live he always found the reflexes congested and some or less of serious effusion together with congestion of the cord itself. As reflections of the placed on these appearances, it they are seen continually in persons who are, when
Affections of these parts was not indicated during life. Deposits of a brown nature have been frequently found in the membranes. Turner states that he found them in five cases out of six, that these may act as exciting causes of the disease is possible, although not certain, as we often find brown opacities in the pars opaca producing epilepsy.

Brain. The sinuses of the brain are usually observed to be filled with blood, also there is more or less of serous effusion between the membranes, and in the ventricles of the brain the substance is usually congested. Latter no importance can be attached to these appearances. In some sixty cases of persons who died of various diseases, not cerebral, where serous effusion was found in the brain, together with other abnormalities Dr. Lundy states a case where a large quantity of serous effusion was found between the membranes of the brain of a man who had fracture of the ribs, and whose death seems to have been from an excessively huge state. When the tubercles are fatal, first laid, the blood appears of a darker colour, and the veins and sinuses are generally more congested than in other cases. During the fever disease
The functions of the brain generally remain perfect. The increased vascularity of the end, and pia matter is an effect of the general irritation of the disease.

Scleritis appears not to be an inflammatory disease, which is corroborated by the state of the pulse, blood, and various secretions. It also by the post-mortem appearances. There are cases attended with inflammation, but these must be looked upon rather as the exceptions than the rule. When you have inflamed scleritis, you can easily diagnose it during life. Dr. Nees relates a case of a boy who received a quantity of shot in his back from the discharge of a gun, and which was followed by total paralysis of the parts below the injury. The day after he was shot, and the phthisic papilla arose deep afterwards, symptoms of scleritis made their appearance. A mixture of balsam of Peru given every hour, and balsam of Peru applied along the spine, the patient had that form of the disease called Paralysata. Four days after the application of the balsam of Peru, he then fell into a sleep which lasted for two hours, and during which the fleshy portions were gone. The pectoral and the bladder and lower limbs
remained. This must be regarded as a case of Tetaeas entering from the application of direct violence, to the Medulla Oblongata. In some few instances blood has been found extravasated within the spinal sheath. In examining the nerves implicated in the injury, you sometimes find that they are inflamed, but almost as frequently no change is observed, more than can be accounted for by their passing in the local irritations and inflammation of the part. Some authors as P. Pollenc believe that all cases of Tetanie are connected with inflammation, extending from the meninges of the nerve at the injured part, to the membranes next to the substance of the Medulla Oblongata itself. In support of this he quotes several cases, where inflammatory appearances were found after death. He mentions the case of a man who experienced fracture of the left hemi-lungs, from which Tetanie was produced, and on inspection after death, the meningeal of the muscular, spinal, and cerebral vessels, were found inflamed, also the membranes of the brain and spinal marrow; and it was remarkable that these appearances were confined to the sides of the membranes corresponding to the injured limb. He also relates another where a man died
from tenesmus after the opening of a carbuncle, situated on the inner side of the left thigh, and where after death, the membranes of the space were found to be unusually vascular, and its substance from the fourth cervical to the fifth dorsal vertebra, soft and red. The branch of the sciatic nerve, distributed to the site of the surgery, was surrounded by a vascular network. Many quoted the case of a man who was affected with tenesmus after amputation, but where on inspection it was found the sciatic nerve had been included in the ligature. Butailing mentioned the case of a boy, who died of the disease, after a stroke of both legs; and where on examination after death, the cutaneous branches of the nerve, both legs, especially the communicating tibialis, and the communicating branch of the femoral, with the posterior tibiales, were found inflamed, at the seat of injury; leaving these upwards above the point, they were found perfectly normal, except that portion of the femoral which turns over the head of the foot, where it was again observed to be vascular, thus having a portion free from the appearance of inflammation. Ivan thinks that the ganglia of the sympathetic are the important parts of the nervous system to which the irritation tends, from which it proceeds the rest of
mucous system, and to the membranes of the brain, and cord; and according to the mildness or severity of the disease so is it confined to these and the cerebral special nerves, for a greater or less length of time. He also thinks that where a state existing tendering on inflammation and therefore avoids bloodletting, and burrs to be applied along the spine, to relieve compression of the cord. In the桌面, and terraced imagine. That where the dynamoic force of the disease occurs, it is the result of the presence of worms in the intestinal canal. If the nerves supplying a limb be divided, the sense of sense will cease in it at once, thus showing that the motor action arises in the nervous cord and not in the muscular system. The disease generally affects the voluntary muscles only, from this we may conclude that the motor action is confined to that part of the cord from which they derive their power, namely, the anterior motor column. Prof. Forb. Comment found that in deviating the medulla oblongata, best performing artificial respiration, universal action would be produced by the application of the false tong within back to the spine, thus showing that the disease may be excited independently of the brain. The result of this motor action
however produced, is to replete the vessels of the voluntary muscle. This is what I have mentioned a case, where the vesicles were confined to one side of the body, so that it would appear that the diseased action may be confined to one side of the distal tract. The nearest face with which the disease affects different individuals, depends either on the congenital probability of the nervous system, or the developed tendency of the time.

That the disease is at times frequently by large than small wounds is false, for several cases have been related, where it was ejected by a mere stretch or abrasion of the skin. In particular gives three cases of the acute form of the disease deriving from such slight wounds as scarce to attract notice; neither does the state of the wound appear to increase any confidence over the disease, as it is found to occur when the wound is in a healthy as well as an unhealed state of condition, also after it has been healed for some short time. In this state it is an affected after certain special systems, and that the functions of the brain and senses are never primarily affected. Muscular lesions are often observed, which may readily be accounted for, by the immense straining to which they are subjected during
the spasms. Despots relates a case where this \textit{high}

\textit{spasms} were noticed by the expansive action of the \textit{spasms}, having a momentary relaxation of the \textit{spasms}. It is observed that the \textit{contracted}

state of the \textit{spasms} persists longer, \textit{is greater in extent}, than when \textit{spasms}. This is owing to the instability remaining in the \textit{spasms}, after all the \textit{spasms} phenomena of \textit{spasms} have ceased; which \textit{existed} in the \textit{spasms} process advances. \textit{Lesions} are often observed in the \textit{spasms}, after death from this \textit{spasms}

\textit{spasms}, and \textit{inflammation} of the \textit{spasms} have been observed. \textit{Lesions} have also been noticed in the \textit{intestines}. \textit{Lesions} of the \textit{spasms}, and \textit{glands}, together with \textit{inflammation} of the \textit{spasms} \textit{membrane}, and \textit{enlarged papillose at the root of the tongue} have frequently been seen. In those who died of \textit{spasms}, the\textit{lesions were formed} across \textit{spasms}. \textit{Lesions} were caused by the \textit{spasms} will account for most of these \textit{appearances}.

\textbf{Treatment.} Various \textit{medicines} have been \textit{resorted to for the cure of this \textit{disease}, but as \textit{medicines} are very un\textit{different} except \textit{medicines} to present \textit{medicines} of the \textit{medicines} generally \textit{resolved to see the course of the \textit{disease}, it is difficult to decide.
which are the most efficacious, but I propose to mention a few of those that have been found the most useful.

Blood letting has been employed in the disease, and frequently with marked benefit, but it is only advisable in those cases, where decided inflammation exists. Heparin injection seems to be of more benefit than a small one. According to the experiments of Dr. Lee, the opium is causing more frequently after the loss of serious phæno arterial blood, since such is the case we should bleed from an artery.

Mercury. This has been tried, but with so little success, that we can place no reliance upon it. In cases where the disease is attended with inflammation especially of the membranes of the cord, while taken with opium, it has proved beneficial, but it appears that under no other circumstances can we expect benefit from its use.

Conjunctivitis. This has been frequently noticed in order to arrest the disease. However, each a mode of treatment is only advisable in cases where an eyes is necessary to preserve the conjunctivae, which if themselves will not do it. Where this is required it should be done as soon as
proper after the receipt of the injury, before
the Tetanus spasms, have taken; if we expect
good results to arise from it. I have related
some cases in which he pursued this practice,
with success, but in all of these it was done
before the Tetanus spasms became fully mani-
fest. Dr. Cooper tried it but he always found
it fail. Dr. Negate relates the case of a boy
who had received a severe burn, on the arm from
home, and where in the following day Tetanus
appeared, temperature was expected to put the
symptoms thus gradually abate, and in less
than a month the patient was cured.

Free incision of the wounded or infected part
will sometimes relieve the symptoms by
removing the tension, and allowing the
escape of pus or other medicated matter that may
have formed.

Division of the nerves has been resorted to
sometimes the result of relieving the symptoms.

Narcey mentions the case of an officer who
was wounded in the forearm by a bullet,
cutting across the Radial, the Median, and
the Ulnar nerves, upon which Tetanus spasms
were severe, and where disappearance of the symptoms
followed a free incision, which was made
down to the bottom of the wound dividing
come upon extensive and nervous fibres, but the facial nerve and paralysis. He also mentions another case, where a man received a wound from a lance, on the right side of the forehead, causing one of the muscles to be paralyzed, and the disease supervened. A few days after, a few days after, a few days after, he was taken to a hospital, and no indication it was found that a lumina of the maxillary nerve of the skull had been detached and the ganglionous plexus restored in the anterior lobes of the brain. In both of these cases the beneficial results which followed the operation were due to the relieving of tension, and consequently leaping the local irritation.

Opium. This drug has been resort to in the treatment of tetanus, although, in my view, it is not used with much success on account of the disease. Some authors are inclined to believe it is totally useless in the acute forms of the disease. It is astonishing, the immense stores of oil that are given during the disease, and yet without producing its physiological effects this is supposed to have from the suspension of the functions of the stomach...

...otherwise it relates a case where he passed thirty
A medicine of it, in the stomach of a man who had taken it largely for the disease. It will be known that in a person who has taken a large dose of opium, vomiting cannot be produced by the strongest poison; this arises from the diminished sensibility of the nervous centres. Opium may be made to produce its effects far more readily by introducing it into the intestines in the form of its essence, although here it sometimes fails. It has been stated as a reason for this that the intestines are a reservoir for the residue of digestion, and they absorb and do not reject, whereas in the stomach, the actions of medicines are liable to be impeded by the digestive processes of that organ. We should therefore administer it gradually and not in too large doses at first, so that we may not Science the powers of the digestive organs, and the fact of its remaining in the stomach, excited or should always be recollected in else when the disease effects its aim may be produced. The patient's distress in the climate is generally relieved by opium after the bowels have been freely moved. As a recollected must be called upon, more except because its action is notverse has been used in its place but with
much better succeeds.

Tobacco. This is a very powerful sedative, and one which requires to be used with great caution.

It is a fact that in the form of an injection in doses of two to fifteen grains, larger doses than these have been known to prove fatal, from depression of the heart.

It seems to be a remedy which has acted with great power in allaying the symptoms of asthenia. The degree of depression and listlessness, which is produced by it, is often so great that patients have been known to prefer the pain arising from the disease to its alleviation.

Tobacco contains two active principles, an

Euphorbital oil, and nicotine. According to Dr.

Brodie, the former produces its effects on the

brain, without directly acting on the circulation;

the latter influences the heart, through the

nervous system of the heart muscles. It is inexcusable to the breath stimulants of the blood.

Cold immersion. This treatment has been

frequently followed in the disease, sometimes with apparent success. It acts

first by depression of the nervous system; secondly by the heart's action; it may even produce fatal

The water should be at a temperature
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a little above the freezing point, and it is found best to pour it in a continuous stream from a height on the patient, some prefer local immersion. The shock produced by it has often occasioned death. Application of Noodles of ice, along the spine has also been used. Its beneficial effect is very most in the disappears form of the disease. Dr. Weight records two cases, cured by it. The K. B. has also reported to have found it

remedy most useful.

Vapor Bath. This has been sometimes used, but with no very good results, whilst better remedies are known it is more rarely used.

Chloroform. This has been often used in the disease, and apparently with very good success. Dr. Duesch of Mannheim quite as eage in which connection, clipping, tosset, vermilion, were used but without benefit, and when at last he used chloroform with the effect that the spasms gradually ceased and the patient made a good recovery. In seven other cases, in which it was used the success was complete. The mode of using it is to allow the patient to inhale it from time to time, sometimes if the spasms are very bad, keeping its effects for hours together; but you may apply it externally in the form of a balsam.

Phenol签订油. This is in the hands of some.
proved very successful. In warm climates it is found to greatly alleviate the symptoms, thus to assist towards the cure of the disease. In cold ones, hot spices, like red pepper, a strong decoction of the Indian quince, every hour, for two hours, is a
productive and keep up mania
tivation. This mode of treatment has been sometimes followed, but only as an
"counter" to the other remedies used. It is in
the inflammatory form of the disease only that
that it is of benefit. In such cases heating
have been applied along the spine, to try and
lay the irritation. The actual centre has
also been used, but such a mode of treatment
is not admirable. Aque ammoniac, has also been
used as a counter irritant, by applying it along
the spine. Actons have also been tried, but not
with much success.

Purgatives. These are of great importance
in the treatment of the disease, as we generally
find a very diarrhoea state of the alimentary
tracts, which it is necessary to correct, in order to
ensure the favourable action of the other remedies
which may be administered. Various ones have
been tried, but those should be chosen which
act quickly and powerfully. The best perhaps is
act quickly and powerfully. The best perhaps is

Bute's Oil, as a few drops of it will often be found
sufficient; which is of importance on account of the
difficulty of neglecting which the patients often
experience. Frequently this will be found to fail
on account of the spasms affecting the sphincter,
and levator ani muscles; in such cases a stra-
enoma will generally be found rectal. During
the whole progress of the disease great attention
should be paid to the bowels, in order to prevent the escape
of any irritating matter. Strychnine or ipecacuanha
are especially useful in those cases where we
have reason to expect the existence of worms.