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On

Diptheria

By George Whyte

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Nemo me impune lacessit
Introductory. In choosing diptheria for the subject of my essay, I feel a degree of discomfort at the magnitude of the task before me. Did I do anything like justice to it; but as this can only be done by one who has had ample opportunity of studying the disease as it occurs epidemically, it will not be expected that a student, whose time necessarily much taken up with other studies can have sufficient leisure to enable him to pay that amount of attention which a subject like the present demands, unless indeed he be placed in circumstances more favourable for the prosecution of his observations than I am. Much has been written and much more yet will have to be written. All we can say is that this disease is under the control of an art, and for this end as before said, it must be studied as it occurs in an epidemic form. Special attention and observation being directed towards the etiology, for until the Cause or Causes be better
understood our treatment must necessarily be
so far defective, and as I do not enter into the
causation of the disease, I may as well say at
once that little or nothing is known regarding
it although many high in the profession have
directed their attention to it, but as yet in vain.

Mr. Rousseau says that "in the towns and
hamlets in the departments of the Seine, which
are remarkable for their salubrity and excellent
geographical position, he saw dysentery" taking
with excessive violence while some villages
of Bologne situated in the midst of marshes
remained exempt from the scourge; and on
the other hand some towns and hamlets situ-
ated on the banks of Jands were depopulated
by the epidemic while others enjoyed a
perfect immunity which was thought to be
attributable to the ordinary salubrity of the
place". It seems to occur in all seasons of
the year, in the high and dry as well as the
low and marshy plains, attacks the rich
and poor, the strong and weak the feeble
And deliberated all the way.

Now I do not entertain the most remote idea of being able to add anything to what we already know in the subject. For I have as yet only seen isolated cases; but besides, the examinations are approaching in all their terrors and an elaborate thesis will be a bad excuse when we come face to face with the examiners.
Diphtheria: This disease is generally regarded as an inflammatory affection of the throat. I am rather inclined to view it in a different light, and to look upon it as a blood disease manifesting itself locally in the form of an inflammation of the mucous membrane of the pharynx, although by no means always entirely limited to this. In our treatment and investigations we are very apt to be led away by the no doubt sometimes truly alarming state of the throat, to the utter neglect of the system generally. Yet in my humble opinion this is not the true disease, neither is it the cause thereof, but a mere local manifestation—a mere symptom; and although this at times assumes very formidable characters, it does not necessarily do so. For in truth the disease is often most malignant and fatal while the throat is little affected. A great deal no doubt will depend on the constitution of the patient and his previous habits of life. A parasitic fungus the Albicans bidum has been blamed for causing
While another person, not suffering from the disease, may have even a larger abrasion, which will contract and cicatrize although occupying the same room and consequently the same atmosphere. Now, were the former appearances due tofavinitio organzsm, would not the latter have presented like characters?

Other inflammatory affections of the throat are diphtheritic may be grouped. In the same room as true diphtheria. Here again the atmosphere is common to both and the favinitio if present.

The disease is more or less decidedly established before it shows itself externally. That is, the throat affection is always preceded by antecedent dyspeptic. These may be mild in character and indeed often are so for the disease is at first very insidious, but they are never absent if looked for. There is always for some days previous a feeling of weakness and debility, pale and anxious countenance, weak pulse and feeble circulation, more or less fever and sometimes through not always...
the whole mischief, and even although our own able professor of Practice of Medicine, for whose talents I have the highest admiration holds this opinion, still I am doubtful and for the following reasons.

1st. The albicans bidium although often sought after by competent observers, has very seldom been found, and in those cases in which it has been found it may fairly be attributed to accident.

2nd. In Throat, a disease occurring in infancy, the albicans bidium and Septothrty buccalis are developed in large quantities, yet there is no such terrible and fatal disease produced as diphtheria.

3rd. In those suffering from diphtheria any abraded portion of skin, the result of wounds of any kind, instead of healing kindly, becomes swollen, painful, Changes in colour, discharge of a thin ill conditioned matter and becomes covered with a false membrane in all respects similar to that in the buccal mucous membrane.
Slight swelling of the submaxillary glands.

6th. False membranes are liable to be produced in many other diseases which are undoubtedly due to some materials morti in the blood such as small pox, scarlatina &c, and indeed these appear to me to be true analogies between those in these diseases. They have all a latent period during which time a symptomatic process seems to be going on in the blood, and in the worst forms they have many symptoms in common.

7th. When we take into consideration the comparatively few deaths that result from the throat affection alone, and compare them with the many from true phthisis, I think it is strong presumptive evidence that the disease is essentially a fever, and that the false membrane is a consequence and not a cause of it, and is liable to be produced not only in the faucial mucoas membrane but also in any part of the body from which the cuticle has been removed.

This view will naturally have a great
Important bearing in reference to the treatment, no matter how it will teach us to pay more attention to the state of the system generally, to keep up the strength of our patient by every means in our power so that he may be able to rally from the state of extreme prostration in which the disease has left him and have strength enough to come through a long and fluctuating convalescence, at the same time attending to head the threats and other symptoms, but above all to avoid an antiphlogistic plan of treatment as positively dangerous.

Pathology

One of the consequences and at the same time one of the most characteristic features in epistaxis, consists in the deposition of a false membrane upon the surfaces and adjacent parts. This I will endeavor to describe as concisely as I can, and for convenience I will do so under three heads: 1st. The progress to words complete formation. 2nd. When completely...
formed, 3rd. There are various and the appearances of the subjacent mucous membrane. I will next examine it microscopically, only a few words relating to the conditions of its development, and then pass on to the consideration of the other times.

1st Its progress towards complete formation. It usually shows itself in the form of spots or circumscribed patches of an ash or slate color and of a creamy consistence, in the neighborhood of one or other tonsils, so thin as looking into the pharynx at an early period of the disease it will appear mottled, soon however, these patches by increasing circumference and by uniting with others, form larger ones and at length they all coalesce as to form a more or less continuous layer covering the mucous membrane of the tonsils, posterior part of the tongue, and pharynx, sometimes extending into the larynx, buccal and nasal orifices, less frequently into the esophagus, as the spots spread they increase in thickness and density. The
colour changes from a light to a much darker hue. The consistence varies from a soft pulpy mass to a friable or diffusible pulp. These changes usually take place in from two to three days from the first appearance of the exudate. It is at first loosely adherent to the subjacent mucous membrane, but ultimately becomes more firmly attached.

2nd. When completely formed: The membrane is now of a dark opaque colour presenting numerous cracks and fissures on its surface, indicating the lines of junction of the primary patches, and through these fissures the subjacent mucous membrane appears of a thin red or rather clear hue. If we now try to forcibly separate any part of the pellicle, it will be found firmly adherent, and only capable of being detached with difficulty, and small slender filaments will be seen to pass from the pellicle to the subjacent surface and to enter the mucous follicles. On effecting separation numerous little bleeding points will show them-
from erosion of the superficial vessels. At an earlier period it may be separated without much difficulty, and without rupture of vessels owing to its connections being as yet soft. For a time it appears to remain stationary previous to its spontaneous detachment, this is to allow a healing process to go on.

2nd Stage. — The healing process begins now steadily advances from the circumference towards the centre, and as it progresses the edges curl up. The pellicle becomes dry and comes away in Easts more or less complete, leaving the mucous surface beneath of a bright red or slightly livid tint, but perfectly healed and in general no bleeding points appearing. When thus left to itself to separate there is seldom any reproduction. At other times though seldom the process of healing from some cause or other does not take place and the false membrane comes away in a more or less imperfect or raw state, leaving the mucous membrane raw, tender and much congested. When left in this state
Reproduction is almost certain. How from this it appears to me is that we should not be over-
cautious in endeavoring to anticipate nature by
removing the false membrane, for in so doing
we evidently thwart a most beneficial process,
without doubt by means of Caustics or we can
in some cases detach and take away the mem-
brane; but at what cost? We leave an ugly
wound behind quite incapable of standing ex-
posure and almost to a certainty a fresh
inflammation will be lighted up, and this oc-
curring not only in a part but in a system of
diminished vital power will not unlikely
lead to ulceration and even sloughing and
fusphere.

Microscopic characters. The membrane
appears to consist essentially of a net work of exap-
related fibres mixed more or less with the friable
epithelium of the part, and with imperfectly formed
or breaking down cells and granular matter.
It is non-vascular and does not materially dif-
fer in constitution from that occurring in inflamed
Precious membranes in general. As the eruption forms, it first exudes beneath the epithelial structures entangling them in its meshes, and that subsequently thrown out accumulating beneath it, renders the deeper layers more and more free from cell formation; so that in the fully formed membrane, the attached surface appears to consist of coagulated fibrine alone, the superficial a certain amount of fibrine mixed with the epithelium of the part and any accidental matter that may have become entangled therein. It has no specific characters to distinguish it from that occurring in crops, unless it be that it is often much thicker and stronger, or that in cases of erysipelas or scarlatina situated in the same part.

Its production. The false membrane of diphtheria results from the same cause as that produced in other parts of the body. The crusts in crops, bronchitis, nephritis, &c., are all the result of inflammation and so also in diphtheria. But this word inflammation has a very vague
and be defined meaning, ranging from the slightest quickening of the circulation to flushing and faintness. Now what I mean by an inflammation is, an exudation of the serum plasma and this exudated, if it stops short of an exudation I would not call it inflammation but simply congestion and when once the serum plasma of the blood has become extravasated then we have true inflammation and not otherwise. This exudation when once extravasated can never be absorbed without undergoing changes either supportive or retrograde. Now one of these changes is the production of false membranes. Well then an inflammation attacks the mucous membrane of a person suffering from diphtheria, the exuded serum plasma extravasates becomes transformed into this adventitious structure called a false membrane and this is the whole affair. In ordinary case this does not take place owing being likely to the healthy state of the individual. But in diseases where there is great asthenia...
its production seems much favoured, were it due to the constant action of a parasitic fungus the disease would be more general and would in all likelihood attack the poor and feeble in preference to the well bed and robust, but it may be urged that the parasite has not formed a proper nidus, well then here I take it the whole matter is conceded, for if a suitable nidus be required, may this not be some low form of fever? and undoubtedly diptheria is one, this is confirmed by the fact that inoculation with the matter of diptheria will produce a pseudine in the same manner as inoculation by small pox virus, this seems to show that the blood is someway poisoned, and these parasites reside in the blood, they would from their known constant nature cause intense inflammation in the brain and other parts of the body, but this does not take place for the mind is inclouded to the last.

The cervical and submaxillary glands will always be found more or less enlarged.
and there can be little doubt that there is an inflammation of the submaxillary tissues generally, but often very severe or deep seated; but in bad cases it, and may even involve the substance of the tonsils and other glands causing them to slough. Sometimes the whole of the tissues from the jaw to the sternum is found hard, oedematous and intensely congested. It follows therefore that while the buccal inflammation is in general superficial and the false membrane limited to the throat, the former may penetrate to any depth and be followed by any of the recognized results of inflammation. The latter may extend to any or all of the mucous prolongations, either of which circumstances will materially modify the symptoms and affect the issue of the case.

Lungs: These generally present a healthy appearance, yet sometimes morbid states worthy of notice show themselves. The false membrane may extend into the air passages, the bronchial tubes may be loaded with
In certain, and in extreme cases both lungs may become more heaving and solid than natural. In consequence of extensive hepatization, at first occurring in patches of small size thickly and uniformly scattered throughout the lung and separated from one another by still exsudative tissue. These solid patches are sometimes transudative, sometimes presenting the characters of red hepatization at other times bloody extravasations or haemorrhagic infiltration, and much resembling a bilateral Pneumonia.

The Blood appears normal but during convalescence the patient is always very anaemic and sometimes shortly before death purpurous spots appear as if nature was making a last effort to throw off some Materiae morbi. Extravasations of blood is often seen in many of the internal organs, but this may result from imperfect nutrition of the Capillaries rendering them soft and easily torn. These extravasations occur especially in the kidney between the
Capsule and entamed tuft.

Having now briefly looked at the pathology of diptheria, it seems like small pox, scarlet fever and other such diseases that it may vary from a very mild to a very malignant form attended with rapid sinking and by other symptoms characteristic of such types of disease this apparently depending upon the state of the constitution of the person at the time of his taking the disease, not as regards strength of body but rather some diastatic state for we often find the strong succumbing more rapidly than the weak.
Symptoms. These owing to their mildness and the insidious manner in which they set in are very apt to be overlooked until the characteristic exudation manifests itself. The disease is generally ushered in by a feeling of languor for some days previous, with general muscular debility and an undefined sense of illness, nausea and drowsiness. These may be accompanied by slight diarrhoea and the whole preceded by rigors. Our attention is first attracted to the throat by the patient complaining of a sense of stiffness and slight pain, although this latter symptom may be absent for some time. The voice becomes husky, the pharyngeal mucous membrane will still be seen to be of a livid red hue, the tonsils more or less swollen, as also the submaxillary glands. There is usually great difficulty in deglutition, a difficulty rather than actual pain, although in some cases pain is well marked and as in tonsillitis becomes长达 towards the ear, probably from the Eustachian tube becoming affected. In consequence of this state of the—
Throat combined with the general illness the
patient refuses solid food from an early period
of the disease, although fluids are readily enough
taken and swallowed. About the second day
the characteristic feature of the disease slowly
manifests itself. The mucous membrane of the
pharynx and adjacent parts appears inflamed
but the inflammatory blush is more of a livid
blue than ordinary. Here and there scattered
over the surface are little red coloured spots
giving it a mottled appearance. These spots
are first seen in the vicinity of one or other
tongue, but very soon affect over the whole faucial
lining and by uniting with one another con-
dense to form a continuous layer which may
extend into the general mucous prolongations,
when into the trachea it gives rise to dyspnea
and impending suffocation; when it reaches
the stomach, to nausea and vomiting.

The breath is fetid owing to the composition
of the inflammatory products in the throat.
One abraded portion of skin, the vaginal
Mucous membrane and anal orifice are all liable to be covered by a similar exudation, and soon rise to morbid appearances very likely to be misinterpreted unless the possibility of their occurrence be remembered. About the third or fourth day the cervical as well as the submaxillary glands begin to enlarge and often to such an extent as to render it a matter of extreme difficulty to medicate the throat, or what is of more importance, to keep down the requisite amount of nourishment for the support of the patient. The tissues of the neck are to some extent swollen and congested and in some cases feel hard and drawn down even to the sternum.

Constitutional symptoms. These are at first slight but increase in a ratio proportionate to the duration of the disease, the main feature of which is early and extreme prostration. The fever in general is of short, but fast the skin is hot and harsh. The pulse at first firm becomes quick and irregular.
The patient is very restless, moving about from side to side, anxious, depressed in every feature, the tongue at first pale, white and glistening becomes as the disease advances, dry, hard and brown, the tonsils become more swollen, deglutition more difficult, anxiety more expressed, the skin becomes clammy, the voice previously husky is now nearly lost, the patient speaking only in a whisper. There is seldom any cough but rather a harsh abortive effort to clear the throat, yet sometimes there is a quavering metallic cough much resembling that of croup. An acrid discharge often escapes from the nostrils or running the lips. In severe cases there are frequent attacks of hemorrhage from nose and throat sometimes purpurous spots appear shortly before death and in a few instances there is albuminuria with fibrinous casts in the urine. notwithstanding all these symptoms there is no sensorial disturbance, neither coma nor delirium, but rather the patient seems to
be the subject of very real asphyxia as evidenced by the cyanosis, the feeble pulse and plural appearance throughout the disease and during convalescence.

The greatest danger during the first week of the disease is to be apprehended from the extension to the air passages and consequent asphyxia - sudden deaths during this week being probably due to the same cause from spasmodic closure of the glottis.

In the second week death from asphyxia is only equal to that from general prostration of the vital powers.

In the third and fourth weeks the latter is most to be dreaded - sudden deaths at this stage being probably due to apoplexy.
Diphtheritic Paralysis. This is one of the sequela of diphtheria and it is the only one I have noticed and ever it but shortly.

It seems to run a definite course, in general very slight at other times extreme, yet I do not recollect of ever reading a fatal case. It invariably begins on the soft palate, manifesting itself at first by a nasal and produced voice but never the con- 

This incident is well established. If the throat be 
examined, it will appear blue and dry, and 
if touched, or pinched with a pin, it will be found 
to have lost its sensibility more or less. The next 
thing perceived is in the patient's walk, which is 
uncertain, but this does not depend on the limbs 
but in an automatic condition of the eyes, these 
have an unconscious staring look. The move- 
ments of the iris are sluggish and the pupils 
more or less dilated according to the progress 
of the paralysis, vision is impaireed. Sometimes 
being indistinct at other times double.

Drowsiness is the next symptom noticed 
then the extremities become affected. 

The
Lower first and subsequently the upper, next follows the muscular coat of the intestinal canal giving rise to marked constipation, then follow in succession the urinary bladder shown by incontinence of urine, the respiratory muscles and less frequently the muscular fibres of the heart.

The paralysis may be confined to loss of motion, but frequently also sensibility is more or less impaired. In most cases the soft palate is alone affected and always the first in order, the others coming in gradually as above mentioned. And in almost every case all traces of the primary disorder has left. The patient acts, sleeps and digests well, although there is enunciation, marked pallor and perhaps irritability of temper. This state may last for one two or even three weeks when the patient first experiences a difficulty in pronouncing the labial consonants, the voice then becomes nasal and feeble, the sense of taste modified or partly lost. There is
Regurgitation of fluids through the nostrils.

Muscular paralysis of the palate is recognised by its relaxed condition and irregular outline, the palate being drawn to one or the other side according to which side is the more affected. In a few days these symptoms may decline, and the disease extend no farther or, advance is made. The eyes become affected and vision altered as regards distinctness or distance, with partial and different varieties of tremors from impotence of the muscles of the fists. Any disturbance of the organ of hearing is rare, although slight deafness and ringing in the ears do sometimes occur. This always follows the amanuensis and precede the affection of the legs. The patient’s attention is first drawn to his legs on getting up, when, to his astonishment he finds one or both feebly and uncertain in their movements so that he staggers and experiences especial difficulty in going up a stair or walking on uneven ground.
There is in general a feeling as if insects were creeping over the limbs, succeeded by numbness which may go on to total paralysis; but in the majority of cases the paralysis is incomplete. When the muscles of the upper extremities are affected, those of one limb are usually more so than the other.

The paralysis in many cases is gradually progressive, and may involve the muscles of the neck so that the patient is unable to hold his head upright. When the facial muscles are involved, the expression is quite altered, the lips being flabby, the saliva escapes at the angles of the mouth, and as one set of muscles predominates over the other, the expression is often hideous. Obstructed constipation is the first symptom of paralysis of the muscular coat of the alimentary canal, there is no desire to go to stool and the feces of the lower bowel may be passed involuntarily. Incontinence of urine indicates paralysis of the bladder. As regards the
Respiratory muscles and muscular fibres of the heart I will say little as they occur so seldom, except that when the latter is affected, it is shown by a feeble and weak pulse, palpitations, tremulous fluttering contractions of the organ, cold extremities, cool skin, and abnormal bruits are heard in the arteries especially of the neck, and the lower limbs may be oedematous.

Sensibility or motion may both be either modified or lost, most generally combined in the palate and tongue, by neither pain or tumour nor movement being produced on stretching the facies. Sensibility in the limbs is generally unimpaired, yet sometimes it is slightly altered, occasionally there is anaesthesia in one limb while there is hyperesthesia in the other, but this seldom takes place unless in very severe cases and then along the spinal column there is also hyperesthesia. When in the limbs, sensibility is entirely lost but motor power unimpaired the patient...
walks as if in the air not feeling his feet touch the ground.

The mind is rarely affected, and when it is, it is indicated by a sluggish working of the brain, impaired memory, none or little impression being made by passing events.

Diagnosis: Paralysis resulting from diphtheria will be easily recognized by the period of its invasion and the regular progressive order of its symptoms.

Diagnosis: This is seldom, but favourable yet death may take place from means of food entering and lodging up the larynx or by syncope from paralysis of the muscular fibres of the heart. This however seldom takes place and in general, we can say there is no danger.

Cause: BretTimaeus thought that the paralysis following diphtheria was due to the extension of the false membrane into the nasal fossae, and the change of the primary acute into a chronic form of the disease,
but this explanation is quite untenable
for there are many cases in which the local
symptoms are very mild. Allminimund has
been assigned as the cause, but this is often
present and no paralysis and absent and
paralysis. It was by others thought to be
the result of constricting the throat; but facts
disprove it. M. Rousseau formerly thought
that as the palate and pharynx were usually
more affected than other parts, it was due
to inflammation of the coats of the nerves sup-
plying those parts, and an infiltration pro-
ducing pressure on the motor muscles; but
he now believes it to be the direct consequence
of the diphtheritic poison acting generally on
the tissues. My own impression is, that
diphtheritic paralysis depends on faulty
nutrition from the impoverished condition
in which the blood is left from the effects
of the disease, although perhaps helped
in the throat by the inflammation lowering
vital power in both nerves and tissues.
Generally, and by pressure from effusion, this view is borne out by the fact that good food will affect a cure.

(Differential diagnosis.)—The diseases for which diphtheria may be mistaken are:

1st. Yearly Fever. There seems to be some relation between these two diseases not yet determined. They often go hand in hand and select victims from the same household. Pre-disposing symptoms not unlike each other.

Since say they are nearly allied while others go so far as to say they are identical but this is sufficiently disproved by the following facts: 1st. An attack of scarletina while it confers an immunity to a second attack does not afford any protection against diphtheria. 2nd. A person may suffer from diphtheria more than once, the last illness being as violent as the first while moreover relapses are not uncommon. 3rd. The larynx is often affected in diphtheria seldom or never in scarlatina. 4th. There is a marked
differences in the sequels of the two affections.
The chief distinguishing marks between the
two are the following. We have seen that dip-
theria is insidious in its onset. Cattle in
the other hand is ushered in with well
marked symptoms, generally preceded by
distinct rigor, nausea, &c., and instead of the
extreme prostration of diphtheria there is well
marked fever. The tongue with its enlarged
and projecting fungiform papillae and the
cutaneous eruption the second or third day with
subsequent desquamation, will usually settle
all doubts. Yet it is well to bear in mind
that in some of the most malignant Occidental
epidemics, where the course of the disease
appears abrupt on the throat, the eruption may
be absent, the characteristic appearance of
the tongue scarcely marked, the febrile
symptoms may be replaced by extreme
prostration and if in such cases as in dub-
ted. Sometimes does happen, a false mem-
brane be deposited on the throat our best
diagnostic signs will be its epidemic form.

2. Cyphosome. - Diphtheria resembles Croup inasmuch as it leads to the production of a false membrane upon a moist surface, but differs in the place of deposition. In Croup the trachea is secondarily affected; in Croup it is the proper seat of the disease, but the larynx is often enured in the severer forms. In Croup there is difficulty of inspiration, loud inspiration, hoarse voice, sharp metallic cough, harsh, dry swelling in the fauces and pharynx. In Croup the breathing is impaired but difficult in deposition, one of the most characteristic symptoms. Besides, the cervical and submaxillary glands are always more or less enlarged and there is the absence of the metallic cough. Croup is a disease peculiar to childhood. Diphtheria attacks adults as well.
3. Approach tonsillitis. This affection simulates diphtheria in so far as dysphagia is common to both, and the exudation from the tonsillic crypts may at first simulate the false membrane; but simple tonsillitis, however severe in its characters, will generally be sufficiently recognized by the presence of the high inflammatory fever so characteristic of diphtheria. A marked precociousness of temper is very characteristic of tonsillitis.

4. Dyspharyngeal. This may easily be known by the following symptoms: respiration labored with inspiration contracted and wheezing, great anxiety, the patient pointing to the prominent uvuli as the seat of pain, the face is flushed often livid, skin hot and dry, pulse full and bounding in short high inflammatory fever. It resembles diphtheria in that dysphagia is common to both; but it will be seen at
once that there is a marked difference in
the respiratory system, and this alone is quite
sufficient to distinguish the one from the
other.
Treatment: Up to the present time the fatality of this disease has been very great, nothing as yet seems capable of arresting its progress. Many so called specific have been vaunted and many tried, but all with one result—failure. And this I attribute to the attention of the practitioners being wholly taken up with one of the symptoms I mean the throat affection to the utter neglect of the strength of the patient so that in the end the poor sufferer slips through his fingers from pure exhaustion and want of strength. Now I do not intend to enter into specialties but merely to point out the main indications of treatment which to my mind seems most consistent with the true pathology of the disease.

Three very opposite modes of treatment have been proposed and practised namely 1st an antiphlogistic 2nd an antiphlogistic and stimulant combined and 3rd a purely stimulant.

The first or antiphlogistic plan has for its—
object the cutting short of the disease which is generally done at the expense of the patient's life. I do not believe the disease can be cut short and if the patient by strength of constitution does come through blood letting, mercury, and the whole array of antiphlogistic remedies he does so in spite of the D.E., but in the greater number of cases where such a system is adopted, the patient sinks. Few now a days think of cutting short a typhus and I think that if the same rule were attended to as far as the treatment of the typhus the fatalities would be fewer.

The second plan of treatment is a curious mixture quite paradysical in my opinion for the D.E. takes away the patient's strength and vainly strives to again restore it. In fact he seems afraid or rather juggle in his own mind what sort of treatment is the best and so strikes a line between the two extremes thinking thereby to avoid error. I confess that this system is not so bad as the purely antiphlogistic
but still sufficiently so as passed experience proves. I have no hesitation in saying that a lowering treatment in any form is decidedly wrong and dangerous to the life of the patient and as such should be avoided. I further believe that in case of true diptheria can be cut short but that it will run its course in spite of all the drugs and potions in the Materia Medica. And further, that the proper treatment consists in watching attentively the progress of the disease guiding the patient through its various stages, guarding him from any accidental circumstances and in the event of such deferring him repairing them to the best of our knowledge.

The main danger in the most complicated cases evidently arises from prostration and debility; hence it has been very properly insisted that stimulants should be only given, but as these are only temporary in their action they are not sufficient and can only
be subordinate to the exhibition of more substantial nourishment, the effects of which are more permanent and in proportion as we keep up the strength of our patient so will be our success. As a general rule the nourishment should be given in small and repeated doses at short and regular intervals, if rejected by the stomach it may be given in the form of enemata. If fever were high and instanless doses of sulphate of barm should be given till it abates which it will be found to do in a very short time and then some slight diaphoretic may be taken such as the following.

Re Ammonia desqu carbonatii gr iii
Spiritus etherei Chlorici Mx
Vini Colchici Mx
Liquoris Ammonii acetatii Zii
Mixtura Acaciae ad Zii Misse
et fiat haustus, tertia quiæque hora sump- nus

This is merely to keep the skin and kidneys
In working order. Emetics are very much employed by some in the ordinary routine of practice without taking into consideration whether they were really wanted or not, and I myself have been ordered an emetic of sulphate of copper every half in every hour as a regular part of the treatment and without the slightest occasion for it. And for what good I could not make out, but one thing I did notice and that was that the patient got weaker and weaker and at last died not from plugging up the air passages but from extreme prostration. I do not think that emetics should form an essential in the treatment of diphtheria but rather for the relief of symptoms of which the good effects of the practitioner will enable him to judge. The sulphate of copper is as good as any in four doses dissolved in water. Chlorate of potash is said to have a great power in many blood diseases especially where there is an imperfect supply of
The patient should be kept in an equalable temperature and even greater care in this respect during convalescence. In nine cases out of ten very great remedy in the end will be found to consist in "support."

* * *

Dr. Potter's Chlorate gr. x
Fracture Ferri Muriati Mx
Acidi Hydrochlorici diluti Mx
Infusii Calomelae 3i- Misce, fist

The chlorate of soda may be substituted for the chlorate of potash but I think it is of any thing inferior in point of activity. The bowels should be kept moderately open especially as the urine in the last mixture is apt to cause headache unless this be attended to.
An important question is that in reference to the mode of treating the local affection, some advocate strong caustics such as by an chonic acid to detach the false membrane, others again prefer mild detergents liquids and among the latter I beg to be enrolled for the following reasons.

1st: That the throat affection is only a local manifestation of a constitutional disorder which is unlikely to be arrested in its progress by any treatment directed to this only.

2nd: That the throat affection rarely proves fatal except by involving organs such as the trachea and the deeper tissues of the neck which are beyond the region of the possible influence of such agents.

3rd: That even though the theoretical correctness of such treatment be admitted, the application of remedies to the surface of a thick false membrane with the hope that they may affect the adjacent mucous surface is not only chimerical but as regards the object intended, practically...
Useless, and that the prior possible removal of the membrane from the entire surface in order to their efficient employment is un-justifiable in the early stage, even if possible and is likely only to be followed by increased inflammation. The reproduction of the lacerations is in fact by far more real mischief than the benefits presumably to be derived can possibly compensate.

4. That the application of such gels to the around the cleared track is at all times difficult and often impossible, and even if possible and accomplished, the spread of the local inflammation will be accelerated owing to the injury done to the sound part.

Of course if suppuration supervene we must use disinfecting lotions but if the case be seen from the commencement this will scarcely occur. The following lotion will answer:

R Liguris Bore Chlorinitas fr. 

Acqua fr. xij. Misce, juxta fungarionum

to be used as a lotion to correct securum.
The following paste is very good for common use:

Pt Yode Bismaphihi

Glycerini Z\i\i

Aqua Rose \i\i Misee.

If there be much pain in opiate paste may be used as follows:

Pt Spiritus Opiae Z\i\i

Spiritus Belladonna Z\i\i

Spiritus Pulsatillae \i\i Misee.

A warm poultice applied externally to the throat will oft sooth where other means fail.

The above is merely a short sketch of the treatment that it should be imperfect in the necessary result of my inexperience, and I have now only to say a few words about tracheotomy. And these are, that good health must be the guide to its performance, and we may hope for more success here than in Europe, as far as the air presages above are concerned.
The treatment of diphtheritic paralysis can be summed up in a few words. In fact the disease will set well of itself with proper and good nourishment. Combined with fresh air, sea bathing. Tonics such as Ferric and Vin will hasten the cure.

Re Prima Sulphatics

Ferrii Sulphatis 52 griz

Extract Hyoscianae 52 friz. Prat Flibida, ter die mundule vex

Re Secunda Sulphatics griz

Ferrii Sulphatis 52 griz

Magnesia Sulphatis 52-33 griz

Acidi Sulphurici diluti Mxx

Froth Hyoscyami Mxx

Infusii Pruni ad Ziz 3 griz

Froth Stautus, bi die mundule vex. This is a very good tonic-sufficent. Strypchnia has also been recommended, it may be given in 52 griz made into a Juzl with conserve of roses twice a day.

Currents of electricity applied along the spine and over the paralysed limbs.
have given much satisfaction and it is as
good a stimulant as any other when it can
be had, but in the whole good food, fresh
air, moderate exercise with simple tonic in
the milder cases will generally be found suf
ficient; and in the more severe cases typh-
othria pressed in as to develop its physis-
tical action slightly will be found bene-

I now conclude these remarks on diptheria
that they should be short and imperfect is
the necessary result of the small amount of
time at my disposal and my inexperience.