University of Maryland Theses

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HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1821-1851; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

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A Thesis

On Primary & Secondary Syphilis

Respectfully Submitted to the

Provost, Regents & Faculty of
Physic of the University of Maryland

for the Degree of Doctor of
Medicine

by

Thomas R. Brown

of

Baltimore, Maryland

Session - 1866

# Syphilis

The History and the origin of Syphilis are involved in the deepest mystery & fraught with the greatest uncertainty; and it is hardly to be expected, in the compass of this thesis that I will reduce to a certainty that which seems to have baffled the efforts of the most diligent investigators of the subject for the past four or five centuries — I will therefore quote such accounts as seems to emanate from the most plausible source —

According to the most reliable authors, Syphilis (characterized most frequently by a small chancre, with

with a hard & cartilaginous base, of a cup-shaped depression which is seldom succeeded by a suppurating bubo in the groin, almost inevitable followed by secondary & tertiary symptoms at some time in life) was first known to the people of Europe in the year 1494, a short time after Charles VIII King of France, entered Italy, at the head of a large army, for the purpose of taking possession of the kingdom of Naples, to which he held himself entitled by inheritance; and recognized among them by the names of the "Mal de Naples", the "Malum Francicum", or the "French disease." — Chabalier relates

relates a very interesting incident that befell the noted German Physician Joseph Grimbeck, about two years after the first appearance, & during the prevalence of this fearful malady among the Germans —

It appears that one pleasant day while walking in the fields, he found himself attacked with this disease; Sad & dejected he returned home, undecided whether he should make known his condition or not; but the change in his countenance, his silence & despondency made them suspect that some misfortune had occurred to him, & he was obliged at last to confess that

that he was attacked by the "French dis-
-ease", & to exhibit the evidence of it
at once in his own person — His
dearest friends turned their backs
upon him, & fled as if they had
seen the enemy's sword suspended
over their heads — Grunbeck's sadness
increased, & settling into solitude,
he gave himself up to gloomy thoughts
upon the vanity of earthly things, & the
ingratitude & perfidy of men —
Meanwhile his disease extended, &
"a thousand ulcers appeared on his
penis, & testicles, vomiting forth bloody
matter" — after suffering in this way
for four months he was treated by a
celebrated quack, who healed his

sores by the application of a powder which gave him much pain — The disease soon disappeared from the penis but soon returned upon the skin, where it assumed the form of tubercles — The skill of the best physicians was unable to dissipate these new symptoms — Temporary relief was obtained by friction with an ointment containing mercury, which was recommended by this quack; but several relapses occurring, he finally died —

Messrs Bassereau & Chabalier have adduced evidence to prove that there is no record in history of the existence of Syphilis prior to 1494 — Also the majority of sentiment seems to be

in favor of crediting "Italy" with this disease; while again the Italians trace the origin of this disease to the "French"; from the fact, I imagine, that, whilst not denying that Italy was the place whence it originated, it so happened that that country was invaded by the "French Soldiers", when this plague appeared among them, & consequently from the lewd habits so characteristic of a large army during a long encampment, it was almost impossible for the natives escape the disease —

Dr Burnstead in his noted work on Venereal Diseases seems to think that that opinion has met

met with the most favor, which ascribes its origin to America, while he himself is of a decidedly different opinion;—

Causes, Gen'l Remarks.— How Syphilis was first produced, there seems to be no positive knowledge but all agree that filth, impure air from sleeping in crowded apartments, bad diet, so common to the miserable hovels in the alleys, back streets of most large cities, are decided stokagaters, if not generators of this complaint.—

It is, properly speaking, an infectious disease; its power of transmission being attributable to the presence of a morbid poison or virus which conveys the disease from one person to another

Much dispute has been raised as to the identity of the syphilitic virus & the gonorrhoal, it seems to be established at the present time, beyond a doubt, that the two poisons are entirely & totally distinct — Hunter it is said, believed that the two poisons were identical, and in order to substantiate his opinion, he cites an instance in which he produced a chancre by inoculation with gonorrhoal matter which was followed in three months by sore throat & secondary symptoms —

Ricord on the other hand, held that although the pus of a syphilitic ulcer, like any other morbid,

id. Secretion may irritate a mucous membrane, & produce Gonorrhoea. Still that gonorrhoal matter will not produce primary syphilis; that gonorrhoea will not be followed by secondary syphilis, unless there is a chancre or syphilitic sore in the urethra; which was most probably the case with the patient from whom "Hunter" took the gonorrhoal matter — It seems also to be generally conceded that the cases of syphilis met with in the last few years are of a much milder type, & yield more readily to treatment, than those spoken of about the time of its introduction — Seldom do we see such painful & shocking subjects to this malady

ndy, as that which I have just mentioned in the case of Dr. Grunbeck, whom, Chabalier quoted evidently as a co-sufferer with the most of his fellow-countrymen, who had fallen prey to its dreadful influence. We are rarely called upon to treat such cases as those spoken of by "Peter Martyr, Governor of Castile", who says: "They have in this island (Hayti) a peculiar disease, characterized by large pustules, occupying the body, eating into the epiromitia, because they are too much addicted to luxury — This disease is contracted by coition with men women who are already infected —

This retrospect tends to encourage our belief that the virus of this disease

is slowly losing its intensity, & like the vaccine virus of the cow becomes weaker & weaker after many successive removals from the primary source —

Symptoms. Syphilis presents three classes of symptoms; viz, primary, secondary, & tertiary —

Under the head of primary syphilis are included ulceration of the parts to which the morbid poison is applied, and inflammation of the neighbouring lymphatics

Under the head of secondary symptoms are included the various eruptions of the skin, ulcerations of the throat, & inflammations of the eyes —

Tertiary symptoms consist of rheumatic pains, falling off of the

hair, deafness ulceration of mucous mem-
brane, & caries of the bones & joints —
The latter stage I have merely mentioned
in order to show that all the complaints
of a syphilitic origin or taint are carefully
& systematically arranged; my object
being, only, to treat the disease in its
Primary & secondary forms —
1st Primary symptoms are, beyond a
doubt, contagious, & capable of being
transmitted to any surface, whether entire or
wounded, by inoculation — The following
interesting table, showing the seat of 470
chancres, I have deemed proper to mention
from an eminent venereal surgeon's
observations — Chancres on the glans,
& prepuce 314, on the skin of the penis 10,

on various parts of the penis 11, involving the meatus 32, within the urethra (not visible on forcible separation of the lips of the meatus, but recognised by inflammation of the lymphatics, etc) 17, on the scrotum, & fino-scrotal angle 11, on the anus 6, on the lips 12 on the tongue 3, on the nose 4, on the pituitary membrane 1, on the fingers 1. —

By this table it is seen that, by far, the greatest number of chancres is situated, either upon the glans, the prepuce, and the skin of the penis, which of course does not argue any peculiar susceptibility of those parts to the virus; but is accounted for by their being the most exposed to its effects — This disease, like other infectious diseases, possesses a

period of incubation. There are many instances related in which the poison has remained latent in the system, and the chancre failed to develop, for they two weeks, indeed a case is mentioned in which 33 days elapsed after impure intercourse before the chancre made its appearance. A chancre is most common, superficial, assimilating at first a simple abrasion. Its favorite seat, as just stated, are the parts most exposed. It has generally a circular outline, with its floor slightly excavated, often elevated above the surrounding integument by the encircling induration. The secretion of a chancre is a clear serous fluid. Chancre, unlike chancroids,

side is rarely met with in groups of more than two upon the same subject — It leaves no cicatrix to mark its existence but the induration at its base can be felt for some time after the disappearance of the chancre. This induration has often been used as a point of differential diagnosis between the pre-existence of chancre and chancroid. — But still this may disappear before the healing of the chancre, the part occupied by it (the chancre) present as soft a base as a chancroid, rendering it extremely difficult to diagnose between the two. This hardness of tissues remains from 20 days to 3 months after the healing of the chancre — — — — — — — — —

Treatment of chancre — The treatment which was recommended by the medical men of a few years back was, what is styled, "the abortive treatment of the chancre", — or its destruction by cauterization — The plausibility of this treatment was founded on the opinion, held by the major portion of the profession, that it prevented the occurrence of secondary & tertiary symptoms — From this it will be seen clearly, that a chancre was believed to be a mere local affection at first, and that the poison did not permeate the system for a considerable time after the clearance of the ulcer — But the efficacy of this treatment

that seems to be losing its reputation rapidly, because the foundation for such an opinion is subverted by the period of incubation which a chancre is known to possess — The longest time after the contagion that this treatment was allowed to be effectual was the fourth day — And, still there are at the present time, very many strong advocates of this measure, together with mercury on the same principle that is either of warding off entirely, or palliating greatly the succeeding stages. Mercury is given in the form of "Mass Hydrarg" in the doses of from grij to gr v. ter die. the bowels kept open by the administration of saline aperients — I should have

Stated that mercury is given until slight ptyalism is produced; also a plenty of good nutritious diet; and avoid violent exercising. Some Surgeons on the other hand strongly denounce the administration of mercury in primary Syphilis, on the grounds just quoted, contending that instead of palliating the secondary & tertiary symptoms it greatly aggravates them when they appear. Those of the anti-mercury School prescribe local washes, boiled disinfectants as Sol: Sod: Chlorinat: ℥j. Aquæ ℥xl. to be applied with rags kept constantly wet with it, or Sol: Pot: Permangan. with the same proportions; & giving internally tonics, either ferruginous or the mineral

al or vegetable acids, and enjoin strict attention to general cleanliness, & especially of the Genital organs — The only difference between these two kinds of practitioners is, that one administers mercury freely in this stage, & the other does not — The other treatment is very similar —

Induration — The second and last of the primary symptoms — induration is an inflammation of the glands in the groin, or very adjacent to it & almost instantly attendant upon the appearance of the chancre — N. B. Inflammation seldom goes on to suppuration; generally resulting in resolution, or becoming chronic, remains the same for a long time — The iron —

Suppuration of the bubos is considered a distinctive mark between chancre and a chancroid. — Treatment — Bubos seldom require to suppurate, yield readily to any local or general treatment. The local treatment usually recommended is the painting of the bubo with "Ung. Ventum Hydrargyri", or "Turner's Cerate", and exerting pressure by means of "Mikin's bandage". — The "General treatment" is, if the patient is not too much enervated by the influence of the poison on his system, the administration of mercury, if he is, — Rot: Iodid: Gr v to gr 10. ter die, and a pill containing of Opium, Camphor, & Pulv. Opium. is very good at night if the patient is restless

Secondary Symptoms — These as I have before stated, include a number of skin eruptions ulcerations of the throat and inflammation of the eyes — These symptoms show themselves in from two weeks to two months after the appearance of the primary symptoms as a general thing, but we frequently hear of cases in which years have elapse before they occur, & even sometimes they do not present themselves at all, and in such cases the virus may remain in the blood, capable of being transmitted from father to child, sometimes with perfect impunity to the mother after a sexual congress,

, & numerous instances of abortion are related by eminent accoucheurs, caused by undeveloped Syphilis in its secondary form — Secondary Syphilis is generally ushered in by a violent "Sore throat" which generally results in ulceration. This is generally treated by gargles of Pot: Chlor: ℥ss. to ℥i. in Aq. ℥iv. to ℥v. or Arg. Nit. gr v. to gr x in Aq. ℥i. or if the ulcerations present an indolent character, touch them with the solid stick of Silver three or four times a day — Skin Eruptions — These are almost innumerable, & I will mention the most common & important — They consist of "Psoriasis Syphilitique", in which, the skin is raised in copper colored blotches & eventually desquamates, or papulæ, an

eruption varying from the size of a pin's head to that of a pea, scattered over the arms, & breast principally, but may attack any part of the body; or Rupia (a Vesicular Eruption) — very rare — consisting of large flattened bullae, filled with Serum, which commonly become purulent, & afterwards desquamate under which the skin is ulcerated — Or Roseola or what it is generally called, Syphilitic Erythema, an eruption consisting of irregular spots of rose color, or blotches, which fades upon pressure, and may be isolated or in patches — Secondary symptoms rarely fail to follow a chancre, & it is well always to make

a careful inspection of the part exposed to the virus, so that when secondary appears we will not assert its generation de novo, or from gonorrhoea — The contagiousness of this stage, notwithstanding Ricord's denial, seems to be as generally admitted, as the fact that this disease pursues precisely the same course, whether derived from a primary or secondary symptom; in the latter as in the former case, the first indication of the presence of venereal, is a chancre at the point where the virus entered — This has been proved by the experience of such men as Huss, Lanigelet, & Rollet — Dr Viennois has

reported a number of cases in which syphilis was transmitted by vaccinating a person with a lancet used on a syphilized person ——

Treatment of Eruptions of Skin — There is no medicine which is so fully entitled to the credence and reputation it enjoys or exerts the powerful and almost magic influence over Secondary Syphilitic lesions as the judicious and careful administration of Mercury — This drug is not to be given, of course, indiscriminately; for instance if a very delicate person becomes poisoned by Syphilis, or if an individual's health becomes seriously impaired by the action of this material morbi on the system, or, accept the defibrinating

proper of this article it would be, in those cases strongly contraindicated — or together with mercury, we find in this enervating, body consuming malady, the necessity for enjoining strict attention to hygiene, as the most careful administration of specifics will fail, if we do not restrict the sufferer to a regularity of habits; such as, the kind & quantity of food, regular in exercising, total abstinence from stimulants, and tobacco, eschewing dissipations, & to watching the condition of all the secretory & excretory organs, & so forth — Mercury was first introduced in the treatment of this disease about fifty years after its first appearance in Italy — How it

acts, nothing satisfactorily can be said. But, unlike in the treatment of primary symptoms, there seems to be in general unanimity of sentiment as to the good it does in that part of secondary syphilis under consideration, viz. skin diseases. In all of these affections nothing is so effective as mercury, both locally, & generally. The most common mode in which it is administered is the Hydrarg. Bichloride, which does not salivate so readily, and on the same grounds, mercurial fumigation and inunction are preferred. The dose of the bi-chloride is from one sixth to one twelfth of a grain 3 times or 4 times a day. The following prescription is very generally followed with good results. ℞. Hydrarg. Bichlorid: gr ij. Pulv.

Sum. Spir gtt ij Ex. Gent. ℥j. M. et ft pill. xii – S.
One every two or four hours during the day –
Inst: Hydrarg – is considerably indulged. Io-
dine, & its compounds are given in combination
with this article; for example the subjoined
prescription is greatly lauded. ℞. Hydrargyri
biniodidi grij – Potassii iodidi ℥j – lviij Spiritus
Vini ℥j. Syrupi Zingiberis ℥ij – Aqua. ℥iiss –
M – S. Twenty to thirty drops 3 times a-
day in a teacupfull of some vegetable decoction –
A noted practitioner of this city often orders
a grain of bichloride of mercury at noon
& ten grains of the Iodide of potassium –
morning & night – As soon as the slightest
ptyalism is produced the discontinuance of
this drug should be ordered, & Iodide of Potassium
substituted – Decoctions of Vegetables – A Var-

ich, of Vegetable decoctions are given. Such as, decoction of Sarsparilla, Saponaria, water-dock, Stillingia, & many others with very great & good results — Nitric Acid was used a great deal at one time, but it is used principally now by home-quacks — Inflammations of the Eyes — Almost the entire globe of the Eye, may be attacked by the poison — The most common seats of disease are, the iris, the retina, the conjunctiva, the choroid membrane, & its appendages — Syphilitic iritis is hardly distinguishable in its appearances from iritis proceeding from any other cause, & I may say that in all of these eye diseases the honest candor of the patient must, in a great degree, govern

The treatment — Treatment — "Surmoled" Iris in acute forms of iritis it may be well to keep the following objects in view — 1. To bring the system under the influence of mercurials as speedily as possible, without injury to the general health, without inducing salivation — 2 — In a depressed state of the system, to combine tonics with mercurials, or to employ the former in connection with iodide of potassium instead of the latter — 3 — To keep the pupil constantly well dilated by means of atropine, & thus prevent adhesions between the iris and the capsule of the lens — 4 To relieve pain, & regulate the general hygienic management of the case —

In the subsidence of the rage inflammation we must have recourse to mercury in liberal doses until the system is acted on by the medicine and as soon as this is palpable very seldom do excellent results fail to follow almost instantaneously. — — — — — —

Prognosis of Syphilis — About the time that this loathsome malady was first introduced to the serious notice & consideration of practitioners, the prognosis was that the patient would go on to suffer its many phases & at last his system unable to resist the many attacks upon the natural economy, death would almost inevitably come to his relief, and the tomb would shadow its reflections over &

the body of the one of the many victims to self-indulgence, self abandonment, the one of the many that have disdained the pleasures & blessings of the Almighty to an any how frail humanity staken sway within the halls of debauchery & folly — But this prognosis is now seldom pronounced; and the disease, which upon its first appearance resisted all manner of treatment, & finally caused death, has been lately enumerated among the diseases which tend towards self-limitation, & although health greatly impaired, still by proper means may be restored to its former condition.

AN

# Inaugural Dissertation

ON

# Anterior Splint

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

## Doctor of Medicine,

by

[illegible] P. [illegible]

of

Baltimore, Maryland

Session [illegible] 1886.

In thinking on the differ-
ent branches of the great science
in which I have engaged—for the
purpose of rendering a subject to
my discourse I find there is
nothing which leaves a stronger
conviction of its great superiority
and usefulness than does the
Anterior Sphenoid.

I well remember the
first time I had the pleasure
of seeing it performed to good
work, I say pleasure, because it
was a pleasure to see we had
something so simple yet complete,

[illegible] of [illegible] [illegible]
low [illegible], [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
perfect rest, without so much dis-
comfort to the patient.

It was in one of the
[illegible] hospitals of this city that
I first saw this useful instrument.
I was passing through one of the
wards when my attention was
attracted to a young man, who
proved to be wounded, but was
sitting perfectly in bed and
reading. I found his leg was
suspended in some kind of an
apparatus, and on examination of
his limb I found to my surprise

[illegible] fracture
of the [illegible]
[illegible].

He was able
to walk, suffering no pain
or inconvenience worth naming.

Above his limb was a
basin of cold water, and by means
of a syphon the water was
conducted slowly over the wound,
which seemed to be doing nicely,
though the weather was warm.

[illegible] of the time [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible], for it was [illegible]
[illegible] [illegible] [illegible], but [illegible]
[illegible] [illegible] [illegible] [illegible]

[illegible]
[illegible] that [illegible] not be [illegible]
adapted to the treatment of
fractures of the lower extremities.
[illegible] with
and some of the older works on
treatment of fractures of the lower
extremities [illegible] the [illegible] and
kinds of apparatus, which have
been used, and still continue to
be, by a great many, and particularly our Philadelphia
brethren, who still cling to the
[illegible] box.

I cannot help feeling that
Dr. [illegible] by his [illegible]
[illegible] the [illegible]

[illegible]

[illegible]

[illegible]

[illegible]; but I do not believe it is from want of the condition, that it is [illegible] to any thing which has been invented as yet; it is because they are not willing to admit we have in this City, ingenuity enough to get up any thing superior to that invented by them. That convinced the time is not far off, when they will be compelled to acknowledge the merits of the Patent, or be said to be behind the time, by the rest of the world.

[illegible] its praise,
which [illegible] the city.

In Philadelphia they have
not used it in some instances, I
have heard, because of not being
able to apply it.

Now it seems to
me "the way is so plain, that the
wayfaring man though a fool can not
err therein" There is no apparatus
that is used, or required, that
is more easy of application.

You need but one assistant, and
in case of necessity you could get
along without any.

[illegible] of its advantages.
There are several things requisite
in the treatment of fractures of the
extremities, which the author pro-
fesses both the [illegible] and
this within my knowledge.

In the first place after
we have reduced the fracture a
bone, and placed the limb in the
position we desire, we must have
something in the way of splints
that will keep it there, but a
little imagination is requisite to
the future; which is accomplished
and forgotten by the Author Spiral.

The limb can be kept
at any angle, that will be found

[illegible]

[illegible] kept in that position

[illegible] by [illegible]ding the splint.

[illegible] the treatment of fractures

of the [illegible] extremities we find frequently, the [illegible] traction being kept up, [illegible] shortening to a great extent. And there is no other appliance which does this so perfectly and with as little trouble as does the anterior splint.

[illegible] traction

is to be [illegible], or [illegible]

the [illegible] is to be [illegible], [illegible]

[illegible] the [illegible] of the [illegible] [illegible], which [illegible] the

obliquity to the end. We should want to make the obliquity a little greater, or less, we can generally do it by moving the bed.

If the patient seem inclined to slide to the foot, [illegible] we can remedy that by putting something under the feet of the bed that will elevate it a few inches.

Now another great advantage of the [illegible] spirit level over the [illegible] of water, is this: [illegible] the [illegible] [illegible] the spirit [illegible] [illegible] [illegible] movement of the body [illegible] [illegible]

will never rise with it, and the backbone
bone will not be disturbed;
because an apparatus which
rests on the bed, must of necessity,
in any movements of the body, cause
the bones of the [illegible], and
as soon as it is [illegible] to lift
the patient by [illegible] this [illegible]
[illegible] would drag
him down to the bed, which would
be painful to a [illegible], and
to bring to some [illegible], if the
[illegible] pressure which is not
to [illegible] in another part.

[illegible] the patient should [illegible]
looked to. It might be said

which the [illegible] is the thing to remedy, [illegible] be the first consideration, but at the same time if we can get an apparatus that will effect a perfect cure, and at the same time with comfort to the patient, so much the better.

I am satisfied I have been successful in fractures, treated with the extension splint with a better result, than could have been obtained by any other instrument, and I may almost say without any inconvenience to the patient.

During the winter of 1864 I saw two cases of compound fracture,

and to some extent comminuted) which were crushed around of the femur. They were treated by the learned Prof. of Surgery of the University of Maryland, and with the apparatus of his own invention.

They remained in the apparatus about six weeks, if I mistake, when the exfoliation of what bone the fragment was left, and healing in bone was left of the injury except the cicatrix.

Now according to the report of the board in surgery, the limbs of both the patients of which I have been speaking should have been amputated.

Thanking the inventor to
a combined machine with the
[illegible], I beg to
mind the first case which was
treated in that instrument, which
was detailed to me by my friend
and preceptor Dr. Van Gibber.

It [illegible] a man
who had fracture of both bones
of the leg; it was a compound
fracture, and he [illegible] suffered
from it [illegible] instead of
[illegible]. Notwithstanding he was later
to the Clinic for treatment,
and after he had been under
treatment for some time it was
decided that it was [illegible]

and he was according to breath in and placed on the table, but he begged so for them to send him home to die, saying he was if he could but be case on [illegible] he would get well. My dear [illegible] took him in hand, and put him in the [illegible] spirit, the best [illegible] he had ever applied.

He this case was one which [illegible] related to lost the utility of the operation, for it was afterwards he injured in the first place, and that it had refused so long to write that the attending surgeon and the Commissioners had decided to amputate.

Feb. 1. on outlook there, the fever had burned great sinuses up the limb, and taking every thing into consideration the prognosis would be very unfavorable; but notwithstanding there was so much to contend with which was calculated to defeat the successful terminating, the man recovered and I believe he is still living.

As I have said much of the manner of applying the bandage, I will say a few words, and will therefore my discourse.

It will not take long to describe the mode of applying a

[illegible]

[illegible] of the
femur, we will want a splint
to [illegible] the [illegible] of the
to embrace the pelvis.

If the leg is not [illegible] upon
the right, the [illegible]
[illegible] and, we place the splint
over the fractured limb, and if
we wish to place the number,
all we have to do is to find out
where we want the angle made,
and then let the splint rest on
it over the seat of a chair or any
[illegible] thing, then let it fit
[illegible]

[illegible] it, second is [illegible] fair [illegible] of the cord we can at once the apparatus, and then we have the [illegible] fragments in their [illegible] position, we may have an assistant hold it there while we apply the bandage.

Now this can be done in two ways; we can begin at the foot and bandage up as far as we desire the bandage to go, or if the fracture be a compound one, we can begin at the foot and bandage up as far as the wound, and then begin again above, and apply

[illegible]

so we can get [illegible]

without disturbing the bandages.

[illegible] a part we apply

[illegible] bandage which

can be taken off at any time

we wish to dress the wound.

AN

# Inaugural Dissertation

ON

# Diphtheria

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

James C. Leamy

of

Baltimore, Md.

Session 1865 & 66

Diphtheria: A name given by Mr. Bretonneau to a class of diseases which are characterized by a tendency to the formation of false membranes; and affect the dermoid tissues, - as the mucous membranes, and even the skin. Dunglison.

I propose, in this dissertation, to confine my remarks almost exclusively, to that form of the disease which has prevailed so extensively, for some years past, in this country, under the names of epidemic croup, pseudo-membranous or diphtheritic inflammation of the throat, and malignant sore throat; and in which it is the mucous

membrane of the throat, especially of the tonsils and immediately adjacent parts, is the seat of the principal phenomena.

The most conspicuous character of this disease, is the early creation of a thin pseudo-membranous pellicle, in patches or continuous, and closely adherent to the surface of the inflamed mucous membrane, which is the seat of the disease. This inflammation of the throat makes its appearance, often, with symptoms of so mild a character, as to attract but little notice, until the local disease has made considerable progress. The deglutition is but little impeded, a

slight soreness, or a sense of roughness in the fauces, is complained of, while little or no fever is present. If the fauces be examined at this time they will be found of a deep red colour, coated, more or less extensively, with transparent mucus. In severe cases there is, from the commencement of the attack, great feeling of languor and general discomfort, a cold feeling alternating with flushes of heat, thirst, pain in the head, back, burning in the throat, stiff neck and pain on the slightest motion, as in the act of swallowing. The skin is hot and dry, the eyes watery, and the face flushed or pale

and expressive of sadness sometimes accompanied by nausea and tenderness of the epigastrium. At first the bowels are usually constipated; later, diarrhœa usually occurs, and is sometimes the most difficult and troublsome of the symptoms. When there is any fever, the exacerbation generally takes place night and morning. From the commencement of the attack, the mucous membrane of the fauces and tonsils is of a deep red, or claret colour, and soon becomes covered with a layer of tenaceous mucus. As the disease advances, the exudation rapidly increases, until a firm pellicle of a

dirty yellow, or grey colour, is formed. At first it appears in patches, more or less circumscribed, slightly elevated in the centre, and thin and flocculent at the edges.

These patches soon increase in extent, until the whole posterior fauces becomes covered with them. They are at first thin, but soon increase in thickness, by repeated depositions, and sometimes acquire so much firmness, as to come away entire from the mucous membrane, to which they are attached. Their detachment causes more or less bleeding from the denuded surface, which presents a dark red

colour, variegated with spots of a deeper hue.

In the beginning of the disease, the tongue is swollen, red at the edges, and covered with a white mucus through which the high coloured papillae protrude. In a short time, the tongue and mouth become dry, and of a dark colour, and the teeth covered with a dirty white sordes. There is also an increased secretion of saliva, dark coloured, from the admixture of blood from the mucous membrane; as portions of the false membrane are detached, and of an exceedingly offensive odour. Sometimes the submaxillary

glands are indued becoming swollen and painful, and the surrounding cellular tissue infiltrated with serum, also more or less tumefaction of the tonsils, and soft palate, and occasionally the tongue, takes place to such an extent as to seriously embarass respiration. The fever generally continues, with little change, until the close of the disease is near at hand. The heat of the surface, however, abates; the skin presenting a dusky appearance, and puffy feel; the secretions generally, become vitiated, and either increased or diminished in quantity; the prostration of strength is great, and state of torpor soon follows.

When the inflammation extends to the œsophagus, it produces a sense of heat and soreness, accompanied with increased difficulty of swallowing. When the disease extends through the posterior nares, to the mucous membrane of the nose, the distress of the patient is aggravated by his inability to respire through the nostrils, increased greatly by the discharge of a yellowish and flocculent or bloody sanies, often of a very fœtid odour, and which produces more or less inflammation, and excoriation of the external openings and adjacent parts. The Eustachian tube may become involved in

this disease, if so, pain is felt in the ear with defect of hearing: sometimes complete deafness which, if the obliteration of the tube be complete, is occasionally permanent.

The inflammation is liable to extend into the larynx, and trachea. Whenever such extension of the disease takes place, the symptoms of croup, hoarseness, shrill cough, great difficulty of breathing, more or less aphonia immediately make their appearance. These complications are generally of the most unfavourable character. Besides the extension of the diphtheritic inflammation to the larynx and trachea, giving rise

to the symptoms of croup, it is said to produce, in some cases, a species of pneumonia, insidious in its commencement, and marked in part by the symptoms characteristic of the disease of the throat. The cough in this complication is unlike that of croup, and is not attended with aphonia; the expectoration is often of a rust colour; and auscultation and percussion give the indications of catarrhal engorgement of the lungs.

Pseudo-membranous inflammation may occur upon remote parts of the body, in situations covered by a mucous membrane, or from which the cuticle has been removed by a blister, or by ulceration. It is often

observed on the lips, the ala nasi, external meatus of the ear, and the parts behind the external ear, upon the nipples, in the folds of the groin, within the vulva, in the vagina; and Dr. Simpson relates a case of diphtheritic inflammation of the mucous membrane of the uterus, which presented, on post mortem examination, a number of diphtheritic patches. In favourable cases of this disease, the exudation becomes detached from the mucous membrane; its place is soon supplied by a new formation, which in turn is detached, each coating being wider and thinner than the preceding one. Sometimes the exudation, instead of being separated in fragments, becomes

softened to a pulpy consistence, and is discharged from the mouth, mixed with bloody mucus. This separation and removal of the deposit continues for several days, at the end of which time it ceases to appear generally, leaving the mucous membrane to which it has been attached sound throughout its whole extent, of a light red uniform colour, covered usually, with a thick yellow mucus.

As the disease in the throat diminishes, the glands of the neck approach their normal size, and are no longer painful to the touch. The difficulty in swallowing disappears; the tongue loses its pointed appearance, and the face assumed a more animated and

cheerful expression: while the stomach and bowels resume the regular performance of their functions, and the general strength of the patient is slowly reinstated.

In severe cases, the disease is prolonged: all the symptoms are greatly aggravated: the mouth, tongue, and throat are dry, and of a dark colour, the diarrhoea increases, and the strength of the patient more and more exhausted, until death finally takes place, preceded often by coma or delirium.

Great diversity of opinion prevails as to the pathological character of this disease. Some look upon it as a specific inflammation; others maintain

that the affection of the throat is secondary to inflammation of the digestive organs: others again, refer the disease to a hemorrhagic inflammation, in which the colourless fibrine is exuded upon the surface of the mucous membrane: and some German pathologists suppose it to result from a separation and exudation of the albuminous portion of the blood, in consequence of a change produced in it, by an epidemic influence. Andral believes the disease to consist in an acute hyperæmia of the mucous membrane of the fauces, with exudation of coagulable lymph.

The causes of this disease are as yet but little understood;-it has been thought that a damp atmosphere, or a low marshy

situation is necessary to its production; but that has not always been found to be the case: for in some epidemics it has been noticed, that the marshy districts were more free from it than more elevated situations.

It usually prevails as an epidemic, although sporadic cases often occur, but are in general of a much milder form and more susceptible of treatment.

It is said to appear simultaneously among several individuals exposed to the same influences, while others, similarly exposed, have escaped, and other persons having intercourse with them have not been affected. Yet notwithstanding these statements, I believe it possesses contagious properties. Those who have had abundent opportunities of remarking

its nature and progress, strongly maintain its contagious character. It is not in a large city that the question of contagion can be satisfactorily examined. It is impossible to follow in its transmission, the most evidently contagious disease, where so many persons are congregated. But it is in villages, where the inhabitants are not so numerous, and better acquainted, that we can follow the propagation of a disease. This disease, in the language of Dr. Watson, "is not without suspicion of contagious properties"; and until it is acquitted of the charge we should not forget this ancient precept. "That wherever there is uncertainty in regard to contagion, it is the physician's duty to proceed as if it were proved."

In the treatment of this disease, there has been great diversity of opinion, attributable in a great measure to the different appearances the disease has assumed in the various epidemics; but at the present time, I believe it is generally admitted, that a supporting plan of treatment and the avoidance of blood-letting and other antiphlogistic measures is the one best calculated to combat the disease and bring it to a favorable termination. It is a well observed fact, that persons suffering from diseases of an epidemic character, seldom bear depletion, but on the contrary almost always require stimulants, and this is especially the case in diphtheria. No specific remedy

was yet been discovered, (although I believe the tincture of the chloride of iron is more to it than any other,) as quinine in ague or sulphur in scabies; it is then evident that each case requires to be studied, and the treatment regulated to suit its own peculiar features.

External stimulating applications are undoubtedly useful to produce a revulsion to the surface. Any of the ordinary rubefacient liniments may be used for this purpose. I have seen good results obtained from the employment of hot chamomile poultices, or cloths wrung out in hot chamomile tea and applied around the neck, as hot as the patient could bear them, and changed frequently. Blisters should never

be enveloped, from the great tendency of the abraded surface assuming a diphtheritic character. A tepid bath at the commencement of the disease will be found useful; and the sponging of the body with tepid vinegar and water is refreshing to the patient, and assists greatly in quieting the action of the cutaneous follicles. Local applications to the throat, internally has been almost universally adopted in the treatment of diphtheria, generally with good results. In the early stage of the disease, when the throat is inflamed, and before the exudation has extended far, I think the painting of the diseased surface with the tincture of the chloride of iron, or with muriatic or nitric acid, will do much

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towards arresting the disease. Nitrate of silver in solution, has been used, and it is said to serve to produce a more healthy action in the inflamed mucous membrane of the throat. Whilst the severer applications should be cautiously employed, great benefit will be derived from the use of milder remedies. Gargles of chlorate of potassa, borax, or alum, dissolved in water, sweetened with honey, or acidulated with muriatic acid, bring away the loose pieces of exudation and offensive secretions and in this way, by cleansing them, the and partly removing the obstruction about the fauces adds to the comfort of the patient and facilitates the administration of medicines and food. In those cases

in which there is no disease of the gastro-intestinal mucous membrane to contra-indicate its use, an emetic of ipecacuanha, or sulphate of zinc, given in the commencement of the attack will be found beneficial.

In all cases the patient should be liberally supplied with diluent drinks, such as lemonade, barley water, soda or seltzer water. The tincture of the chloride of iron small or large doses according to each particular case, should be administered at frequent and regular intervals; and whenever albuminuria manifests itself it should be given in full doses, and persevered in until albumen can no longer be detected in the urine. When the fetor of the breath is intolerable, as it frequently is, a solution of the permanganate of

potassa, of the strength of two grains to the ounce of pure water, will be found to be the most efficacious remedy.

When the disease extends to the larynx and trachea if the depression be not too great, it is best treated by administering a mild emetic, as soon as the croupy symptoms appear, followed by small, but frequent doses of calomel. At the same time, beef tea and alcoholic stimulants, if necessary, should be given, so as to save the patient's strength.

To allay febrile action, the ordinary effervescing mixtures may be employed; especially when there exists much gastric irritation. When there is gastric inflammation, crushed ice is much craved by the patient, and will perhaps be the very best remedy he can take.

When the disease is attended with an exhausting diarrhœa, the officinal chalk mixture, with the addition of the tincture of kino, will frequently check it; or what is perhaps better in such case — a combination of tannic acid, camphor and ipecacuanha; or the acetate of lead in solution.

Time, change of air and scene, good nourishment, and tonic medicines, are the most important agents towards recovery from the several nervous affections which so often follow diphtheria.

Paralysis is frequently a sequela of this disease, and is best treated by tonics; — a combination of

quinine, strychnia and the tinc-
ture of the chloride of iron will
frequently be useful in these cases.
It is important in this disease, that
the remedies should be administered at reg-
ular intervals, and that the sustenance
be given, with equal regularity, between the
doses of medicine.

The best nutriment that can
be given during this disease, consists
of properly prepared beef-tea, raca-
hout, arrowroot, cream, milk, punch,
and eggs beaten up, with sherry wine
or brandy. As soon as convales-
cence becomes established, cod liver
oil should be given and in full
doses, as soon as the stomach will

beef tea, together with solid food, such as fish, chicken and roast beef.

It is of the utmost importance to husband the patient's strength; to guard against any depressing influence, and especially, to caution him against the least muscular exertion, for any imprudence in this respect may be the cause of death, on account of the extreme anaemia attending this disease.

In order to insure this, the patient should be placed in bed at the very beginning of the attack, and remain there until convalescence be confirmed.

Nothing should be used in common with a person suffering from diphtheria, towels, spoons and other articles of this kind must be carefully kept apart from similar articles in use by other members of the family.

It is of the greatest importance to keep the apartments occupied by patients labouring under this disease, perfectly clean, and of a moderate, equable temperature, and freely ventilated.

AN

# Inaugural Dissertation

ON

## Digestion

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

# PHYSIC,

of the

# UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

## Doctor of Medicine,

by

[illegible]

of

Maryland.

Session 1865 & 66

Digestion

The science of Medicine is so preg-
nant with subjects of interest to the Med-
ical student, that it becomes a Mat-
ter of some difficulty, for him to se-
lect a subject for his inaugural
dissertation.— But while there is so
much that is interesting, in this
great science, there is equally
as much, that is difficult to a
definite, and strong comprehen-
sion. Let the student attempt to an-
alyze almost any one subject, connect-
ed with that part of the science from
which I have selected my Thesis,—
and he will meet continually with—
barriers, that will preclude a per-
fect comprehension of the same:

nor is he greatly aided, by reading after Authors; for he might find one advocating a theory with the greatest enthusiasm; such as would warrant you to think, he had at heart not only, the advancement of his science, and his own reputation, but that he had really arrived at some definite, and truthful conclusion, which he might hope would enlighten, and benefit, his fellow man. Another he might find not less zealous in advocating a theory entirely different from the former, on the same subject and still others advocating different theories, from the last: each contending that he is right. This multiplicity of opinion only tends

to confuse, and embarrass, the Student: for while either theory might seem plausible & satisfactory, when read separately, when together complicated, mystified, and unsatisfactory. It can then scarcely be expected of one so young & inexperienced as myself, to put forth but a feeble effort at speculation or theory: in fact I can do but little or nothing more, than call to mind the wisest men of the profession, such conclusions, as in my opinion are correct, and worthy to be accepted. But if in reading this, you find that I have failed to arrive at truthful conclusions or to appreciate properly what I have heard & read during the Session of 1864-65-& 66 I feel assured that

my efforts will be looked upon, with great leniency by my most respected & honored teachers "The Faculty of the University of Maryland".

I propose first to enter into an account of some of the most prominent sources of demand for aliment in the body, and then to enter more directly into the subject of "Digestion", proper. It must be evident to every medical man, that every action of the muscular & nervous system, involves the death and decay, of a certain amount of the living tissue; as is made evident in the excretion of the fæces, the urine the perspiration &c. This constitutes one source of waste, which must be renewed by a certain amount of

of food, to supply the loss thus sustained. This demand is greatly proportioned to the activity or inactivity of the individual, or animal. The indolent man who sculks about too lazy to earn his daily bread, it must be evident requires a less amount of food to sustain life than the active individual, who leads a life of continual exertion: as all motion induces a certain amount of decay so also must a corresponding amount of aliment be furnish to supply the loss thus sustained.

We see the same rule to hold good with animals, as with man. Those of the most active habits, we find

possessed with ravenous appetites, and requiring a much greater amount of food, than those which live an indolent, and inactive life. Those animals which lie as it were during the cold winter months in a cadaverous state, require no nutriment as there is no loss of tissue involved during this state. The waste and decay alluded to, do not effect the muscular, and nervous tissue alone - but the whole system is involved. The different classes of cells which go to make up the body, are constantly undergoing death and renewal; and this too with a rapidity proportioned to the energy of their function; consequently a

supply of aliment is necessary to supply material for their growth. As the leaves furnish material for the sap which is to nourish the shoot, and carry the fruit to maturity, so do the absorbing, and assimilating cells furnish material to the blood which goes to repair the waste of bone, nerve, muscle and cartilage. I must now hasten to the consideration of the demand of aliment to keep up animal heat. A degree of heat equal to 98° or 100° Fh. is necessary to sustain the life of an individual, and unless this heat be maintained by a certain amount of food the individual must cease to live. This source

demand, there we see not to be less in Ireland than the others. Hence the demand for food in warm-blooded animals, for this purpose alone, is great. The amount of demand for this purpose is greatly proportioned to the external temperature. We see this evidenced in our own climate during summer and the winter months. During the cold months of winter when a continual supply of cold atmosphere, is brought in contact with the body, heat is continually being given off; consequently a large amount of carbon & hydrogen must be furnished to the system by food to supply the waste, thus sustained; but during the warm months of summer when

the external temperature approaches that of the body, little carbon is necessary to keep up the required heat of the animal, still more evident when we consider an individual living in the Torrid Zone, and one living in the Frigid Zone. The former we find constantly seeking for aliment, regardless of those articles of diet, which contain least carbon, but the latter we find seeking carbonaceous food, such as the fats. They drink large draughts of oil at a time in order to compensate for the carbon given off, by the continual contact of cold air with the surface.

I will now commence the subject of digestion itself. Digestion has been

described by Prof. Dalton "To be that process, in which food is reduced to a form in which it can be absorbed from the intestinal canal". This is one of the most important functions in the whole system & it is the duty of the physician to understand this function properly in order to know what articles of diet are most easily digested, and to select them for his patients when necessary; for if the stomach is overloaded with indigestible food, the consequences must be not only unpleasant, but detrimental to health. Our scientific Prof. of Anatomy remarked in the course of his lectures, that "The nervous system, the digestive system, & the reproductive system, form the great triangle of life".

As the nervous system predominates over the rest, in securing to us motion, sensation, thought &c. so do the others with equal regularity, and beauty, act their part in building up, and making perfect the great system. For every thought of the brain we exercise, for every effort at motion we put forth, every breath we inhale, for all sensation &c. we are indebted to the nervous system: so for the propagation & continuance of the species we are indebted to the reproductive system — But the digestive system we are indebted for the materials which are to supply the waste occasioned by the functions of the two former systems. This system forms the great prop & stay

to life, when it ceases to act the individual, the animal or what not must shortly cease to exist. All animals from the most insignificant up to man, are furnished with a digestive apparatus, and though somewhat different in structure, some being vastly more complicated than others; all alike are destined for the same purpose, i.e. the reduction of food to that state in which it can be ~~taken~~ absorbed from the intestinal canal, & taken up by the blood vessels. Since the food consists of different substances, differing in their physical & chemical properties, the digestive fluids must also differ from each other; & each one

exercising a particular action, on a particular kind of food. One fluid we find acting physically in softening & pulping, trying the food preparing it for a condition to be swallowed, and at the same time, perhaps acting somewhat chemically on it; another as the gastric juice acting on the albuminous portion of the food, digesting it, and preparing it for a state to be absorbed. Further down in the alimentary canal are other fluids, or juices, which are destined to act on those parts of the food, which have not suffered digestion from the gastric juice. These juices which are the bilious, the pancreatic and the intestinal, are destined to act on

the saccharine, the albuminous & the oleaginous portions of the food, converting each to that state necessary for its absorption. In the different species of animals, differing in their habits, in the constitution of their bones, in the character of their teeth we find the analogy of their digestive apparatuses differing also. As a general rule the digestive apparatuses of herbivorous animals, are more complicated than those of carnivora; the nature of their food being such, as to require a greater degree of physical & chemical action, in order to separate the nutritious elements, from the superfluous portions. In some of

of the vegetable substances, the nutritious elements, bear but a small proportion to the whole amount taken in, therefore a large quantity is necessary to furnish the required amount of nutriment to the animal; therefore it becomes necessary that the alimentary canal should be more complicated, in order that the different processes of digestion, transformation & solution be properly carried on. In the common domestic fowl, whose food we know to consist of grains & insects, we find provided with not less than four stomachs or cavities, all of which act their part in digesting the food. The food first passes to the crop, where it re-

mains for a time, mingled with a watery secretion, in which the food is somewhat macerated, & softened. The food then passes down into the 2nd dilitation or the secreting stomach; the mucous membrane here, is thick and glandular, and is provided with numerous secreting follicles: the food is then subjected to further changes by the acid fluid here secreted. It next passes to the gizzard where it is subjected to a physical change, by the roughened inner faces of its walls; it is then prepared to pass into the intestinal canal to be acted on by the intestinal juices, which complete its solution. In the ox & sheep, and in fact, all animals which

browsers, are there found four stomachs. I will not give a description of these, but merely state them in order to show how complicated are the digestive apparatuses of such animals. In the carnivora on the other hand, the alimentary canal is shorter, and less complicated as their food is softer & less encumbered with superfluous matter. The digestive apparatus in man resembles more nearly that of the carnivora, as his food consists mostly of meats and cooked vegetables. As we are more particularly interested in this function in man, it becomes necessary to give a brief account of his digestive apparatus. At its commencement we find the cavity of the

mouth, communicating with the stomach through the pharynx and oesophagus: the stomach, a flask shaped dilatation, where the greatest amount of food is digested; then the small intestines, divided into three parts. 1st the duodenum, 2nd jejunum, 3rd the ileum. In the duodenum are the openings of the pancreatic & biliary ducts. Lastly are the large intestines; the caecum, the colon, & rectum. The caecum communicates with the ileum by the ileo-caecal valve & the rectum terminates in the anus. The alimentary canal is composed throughout its whole extent of a mucous membrane a muscular coat, and a sub-mucous areolar tissue. The mucous membrane pre-

sents a different structure and has different functions, in different parts of the alimentary canal. The muscular coat is composed of a double set of fibres one set being longitudinal and the other transverse. These are designed by their alternate contraction, or relaxation, to carry the food downward. The mucous membrane in the mouth & oesophagus is smooth & presents a hard & white appearance; in the stomach it is soft & covered with a transparent columnar epithelium. In the small intestines we find the valvulae conniventes, or this are large transverse folds of the mucous membrane in the large intestines we find irregu-

different. It here presents a smooth and shining appearance - free from velosities. To complete a trade I have to say of this, I will state the five juices, secreted by the alimentary canal, in their order. The first comes the saliva, then the gastric juice, next the biliary, the pancreatic and intestinal juices in their order; all of which act their part in digesting the food and preparing it for absorbtion. This brings us to what I have to say of Mastication. In the first division of the alimentary canal (the mouth) the food is subjected to two processes, mastication & insalivation. The process of mastication involves the complete

subdivision of the food into the minutest particles, so that it may be come completely insolivated, & swallowed with facility, and also that it may be acted on more easily by the intestinal juices. The process of being almost solely a chemical one, it becomes necessary for the food to be completely subdivided in order that it may be brought into contact with all parts of the mucous membrane of the stomach. Animals of different habits & depending upon different kinds of food for their sustenance, must necessarily be furnished with different kinds of teeth, in order to accommodate themselves to their particular species of food. Thus in carnivorous the molars are furnished

with sharp & curved teeth, which are intended to seize & retain their prey, not however being used for mastication at all. These animals swallow their food in the solid state after being completely enveloped in a slimy mucous. Other animals we see provided with a set of incisor teeth which are intended to seize & divide the food, and also with molars ~~which~~ to subdivide it more completely, so that it may be prepared for swallowing. But this class being of the carnivorous tribe, the mastication & grinding process is very limited. In herbivorous animals of the ruminating class, we find teeth intended to grind the food into the minutest particles. In this class we find the im

incisor teeth only in the lower jaw, with a few exceptions. The incisors in her Poirra are only intended to cut the food off as grosser, the process of mastication being carried on entirely by the molars. In man who combines the characters of the two classes just mentioned in this respect, we find incisors, canines, and molars. The incisors in man have sharp & cutting edges, running from side to side: they are intended, both to nip and cut the food, to some extent. The canines are situated immediately behind the incisors & are much less prominent than in some other animals, as the cat, the dog, & some other of the carnivora. The molars combine the characters of

of the herbivora & carnivora: they resemble the molars of the herbivora in being large and flat and resemble those of the carnivora in presenting sharp & conical eminences & are intended more for mangling & cutting the food than for grinding as in herbivora. Saliva — This naturally brings us to what we have to say of the saliva, the first of the digestive fluids. We find in the region of the mouth three salivary glands & a set of mucous follicles, in the mouth itself: these are destined to secrete fluids differing, it is said in their physical and chemical properties. Bidder & Schmidt have experimented on animals with the following results. By exposing

Steno's duct where it crosses the masseter muscle, they were enabled to insert a silver cannula and thus the saliva from the parotid gland was obtained in a pure state, unmixed with any other pieces of the mouth. It is said to present a clear limpid & watery appearance with a slightly alkaline reaction. In a similar manner the saliva was obtained from the submaxillary gland, by inserting the cannula into Wharton's duct. This differs from the former in its physical properties, being somewhat more viscid; it is also alkaline in its reaction. The saliva from the sublingual gland is still more viscid than that from the submaxillary. The secretion

from the mucous follicles has been obtained by tying the ducts leading from the glands just mentioned. It differs from the secretions of the glands just mentioned in being more viscid. Saliva has been obtained from the human subject in a similar manner and it was found to be similar to that of the dog. When all these fluids are mixed together in the mouth they present a somewhat different appearance; instead of being transparent as when free from mixture with one another, they become opalescent or turbid. In the greater part of the saliva is water. It varies from about 995. per cent. of the whole. Organic matter under the name of Ptyaline 1.34 per cent.

Ptyalin is said to be precipitable by adding alcohol. There is also present in the saliva the Phosphates of Soda, Magnesia, lime. Chlorides of Sodium & Potassium & sulphocyanide of Potassium. The average amount of saliva secreted daily is said to be about 3lbs avoir, but this must necessarily vary with the quantity & quality of food consumed by the individual. Hard & dry substances require a much greater amount of saliva to soften & prepare it for swallowing than soft & liquid substances. It is said when liquid substances are taken into the mouth little or no saliva is secreted. The time function

of the Saliva I dont think is definitely settled. It has been proven to possess an organic property capable of converting starch into sugar & it was the opinion of Physiologists not long since, that the true function of the Saliva was to convert starchy portions of the food into sugar. Recent Physiologists say they have proven this ~~&~~ not to be true. Prof. Dalton in experimenting on a dog with a gastric fistula fed him on meat & starch he afterwards took a portion of the food contents from the stomach through the fistula, he found starch to be present, by its reaction with iodine, converting it into a dark blue color, the iodide of starch. He waited until the

the starch disappeared but found no sugar present, it seems from this that the gastric juice, possesses the property of preventing ~~of preventing~~ the change of starch into sugar, Prof. Dalton has decided that the function of the Saliva is entirely physical - its only use being to soften & liquify the food so that it may be swallowed with more facility. But it seems to me its true function remains yet to be decided - for why is this organic matter present, which is capable of converting starch into sugar if it is to serve no purpose? there is nothing superfluous in the whole human economy; even crys. and secretion serves its purpose although it

it may not yet be known.

The Gastric Juice & Stomach Digestion

The mucous membrane of the Stomach appears to the eye to present a soft smooth velvety appearance, but by the aid of the lens the surface is said to present a peculiar honey-comb appearance, covered with small depressions or areolæ; at the bottom of these depressions are the gastric follicles, which are different in different parts of the stomach. It seems unnecessary to enter into a minute description of the mucous membrane of the stomach — it is enough to know that it is furnished with glandular follicles which are destined

to secrete a fluid which enters in to the digestion of the most important part of the whole process. It was thought at one time that the gastric juice digested or liquified the whole mass of food, but this has been proven to be otherwise, certain parts of the food as the saccharine, the starchy & the oily portions are not at all affected by it, but pass further down to be digested by other juices. It is only the albuminoid or organic substances which are digested by the gastric juice. Fatty matter is merely melted by the heat in the stomach & the starchy portion of the food is hydrated & gelatinized also by the warmth & moisture. The most imper-

ant element in the gastric juice has
been found to be a free acid, demonstrated by some to be lactic acid, by others muriatic acid, and to this the
acid reaction of the gastric juice on
litmus-paper is due. If the gastric juice
be neutralized by an alkali it is found
to exert little or no influence on the food.
The gastric juice possesses an important
organic property called pepsin which has
the important property of fermenting
the food: this element may be precipitated from the gastric juice by means
of alcohol or some of the metallic salts
it may also be detected by boiling the
juice, the pepsin will be precipitated.
It possesses also other qualities, such

the greater portion of which is water; it contains the Chlorides of Sodium Potassium & Calcium also the Phosphates of Lime Magnesia & Iron. It requires the secretion of a large amount of this gastric juice to act as a solvent on the albuminous portions of the food. It has been estimated that 14 lbs avoir) are secreted daily by a man of medium size & height: it has also been seen that a dog consuming a pound of meat daily secretes about 14 pints a day. This large quantities can only be reconciled by the fact that as soon as this juice acts as a solvent on the food it is absorbed together with the albuminous; so that what the blood loses by one process

it gains by mastication. The amount of gastric juice secreted, like the salivas must depend to a great extent on the quantity and quality of food taken into the stomach; for there is no secretion when there is no food in the stomach. The stomach must be irritated by some foreign substance in order that this juice may be secreted. Another important process connected with the digestion of the food in the stomach besides the secretion of the gastric juice is the peristaltic action of that organ caused by the constant contraction & relaxation of the longitudinal & circular fibres of the its muscular coat. A certain amount of motion is necessary to keep the food constantly moving, so that it may

be brought in contact with every part of the mucous membrane of the stomach. If a certain amount of meat be put in a test tube with gastric juice & suspended to remain quiet, liquifaction is found to be comparatively slow — but as soon as motion is given to it, so that the fluid is completely mixed with the meat its liquefaction is greatly increased, though it is not so perfect as in stomach digestion. The time required for digestion depends to a great extent on the food ingested. This becomes a matter of some interest to the individual as he should always select such food as is easiest and soonest digested. Especially does it become a matter of interest to those who

are plagued with dyspepsia or in other words indigestion, I will give a short statement of the time required to digest some of the different kinds of food. Pig's feet require 1 hour, Tripe Trout & Venison each 1 hour, Milk, Roasted Turkey, ad 1 hour, Beef Mutton Veal ad 3 h. Roasted pork 5 hours.

Intestinal Juices and the Digestion of Sugar and Starch. These portions of food which have not suffered digestion in the stomach pass into the small intestine, to be acted on by the biliary, the pancreatic, & intestinal juices. It has been shown that only the albuminoid portions of the food are digested in the stomach the saccharine & the starchy and the oily.

~~portion~~, are yet to be accounted for. Sugar or the saccharine portion of the food pass into the small intestine where it is acted on by the intestinal juices and converted into glucose and absorbed as such into the blood vessels. That the intestinal juices has the property of converting starch into sugar has been recently taking the juices directly from the duodenum of a dog & mixing them with starch in a test tube at the temperature of 100° Fah.; the starch was almost immediately changed into sugar. Animals fed on starch have been killed soon after eating & the contents of the stomach and small intestines examined; starch but no

sugar was found in the stomach, while on the other hand sugar but no starch was found in the small intestines. This seems to render it conclusive that the mixed intestinal juices only have the property of changing starch into sugar. The pancreatic juice exerts the greatest power in this process — Bile in the pure state exerts no digestive power whatever on Sugar. The true intestinal juice is secreted by two sets of glands, the follicles of Lieberkuhn and the glands of Brunner. The follicles of Lieberkuhn are found throughout the whole extent of the small & large intestine — but the glands of Brunner are found only in the upper part

of the duodenum. The intestinal juice has been studied with less success than the rest of the secretions as experimenters have always experienced more difficulty in obtaining it in a pure state than the rest. It is however said to be colorless & glassy in its appearance viscid & mucous in consistency, with an alkaline reaction. It contains the property also of converting starch into sugar. (Pancreatic juice and its Digestion of Fat.) There now only remains to be considered the oily portion of the food. I have stated before that the gastric juice exerts no digestive power on the oil; it is only melted by the heat in the stomach

bile also has the property of separating the oil from the food in which it is contained by acts, as a solvent on the food. After it has become separated from the food & melted, it is carried down into the small intestine where it is converted into a white opaque emulsion under the name of Chyle and absorbed as such. A controversy still exists as to which acts as the most active agent in emulsionizing the oil, the pancreatic or the biliary secretion: but the most weighty authority seems to favor the pancreatic secretion, as it has been proven by direct experiment that the pancreatic juice when brought in contact with oily matter possesses

the property of disintegrating them and and reducing them to a complete emulsion with the characteristic elements of chyle viz a white opaque creamy looking fluid. The most important ingredient in the pancreatic juice, is its organic matter, under the name of pancreatine. It is coagulable by heat; it is precipitated by nitric acid, alcohol, and Sulphate of Magnesia. It may be distinguished from Albumen by forming a precipitate with Sulphate of Magnesia which has no effect on albumen.

The pancreatic juice is a clear, colorless, somewhat viscid fluid, with a distinct alkaline reaction. The flow of the pancreatic juice is quite

abundant, but may be said to be scanty when compared to the secretion of the gastric juice. The daily secretion of the pancreatic juice is said to be about 2 lbs, while that of the gastric juice is 14 lbs. Digestion of food is not a simple operation, but it requires several physical & chemical changes before it is accomplished. It is first masticated & insalivated in the mouth, so as to be fitted for swallowing; it is next acted on by the gastric juice in the stomach, which digests the albuminous portions of the food, and separates the fatty matter from the food. In the small intestine the intestinal juices convert the starchy ingredients into sugar & emulsionize the fatty

matters so that they may be converted into chyle. — "Thus we have seen the several changes necessary for the food to undergo, in order that it may be prepared for absorption, by the vessels of the mucous membrane of the ~~stomach~~ alimentary canal and thus taken into the circulation to perform its office

"The Large Intestine and its Contents

In the small intestine the secretions are intended to digest the food & prepare it for absorption but in the large intestine the case is quite different but little or no absorption takes place. It is found to contain the feces which are composed of the undigested remains of the food, and animal substan

are secreted by the mucous membrane.
But little is known of these secretions — those most thoroughly investigated are Excretin & Stercorine. The latter contains a certain amount of fat and fatty acids "the office of the large intestine is mainly to separate & discharge the superfluous portion of the food."
Hoping that this feeble effort may meet with your approval, I have the honor to sign myself most respectfully, Yours &c

Charles Cockey

AN

# Inaugural Dissertation

ON

## The Circulation of the Blood.

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

**UNIVERSITY OF MARYLAND,**

FOR THE DEGREE OF

*Doctor of Medicine,*

by

Francis M. Noonan

of

Frederick City, Maryland

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# The Circulation.

In writing a treatise on the circulation, it would be proper, initially, to consider the properties of the complex fluid which is propelled through the system; but the space allotted will not permit me to enter into the physiology of the blood, and I only propose to consider the mechanical part of the propulsion itself. It is difficult to comprehend how it escaped observation for so long a time, that the blood circulates through the system, and circulates in one direction. Physiologists were not insensible of the importance of the blood to the general nutrition of the body, they knew it was a vital fluid, but how it came into relation with the

elements of the various tissues they were wholly unacquainted. The discovery of the circulation does not belong to one man, nor to one generation, but was discovered slowly — little by little, extending over a period of 1500 centuries. Before the time of Galen, who lived in the second century, the veins were supposed to be the only vessels that contained blood — to him belongs the honor of discovering that the arteries contained blood also, which before were supposed to contain air. In the year 1553 Michael Servetus discovered the pulmonary circulation. In 1574 the veins were discovered to have valves by Fabritius. Finally, in 1616

Harvey, then a professor in a college in London, first taught the theory of the circulation. By a careful study of the anatomy of the heart and its valves, and of the veins and their valves, and the relation they bear to one another, he discovered the immortal Harvey to the inevitable inference that the fluid contained in these vessels and in the heart not only moved, but also moved in a certain direction. The circulation, or that function by which the blood, driven from the left ventricle of the heart, is distributed to every part of the body by means of the arteries and capillaries and is returned again to the heart through the veins, has for its object the conveyance to every

part of the organism, the materials for its growth and renovation, and also to afford to every part the means of absorbing oxygen from the atmosphere and of giving up to this the carbonic acid which it is continually generating. The extent, therefore, to which an apparatus for this purpose is developed in the animal kingdom, is, partly dependent upon the degree in which the function of nutritive absorption is limited to one part of the body, and partly upon the degree of limitation of the respiratory apparatus. Where the digestive cavity itself extends through the whole system, as in the infusoria, polypi, &c, sponge and the like, so that every part can absorb at once from its

invertebrates, and where the whole internal surface is adapted by its softness and permeability to expose the fluids of the body to the aerating medium around, there is no necessity for any transmission of fluid from one part to another, and accordingly in the lowest animals which we have formed no true circulation exists. But it is the circulation in man with which we have to do. In him, as in the other vertebrated animals, there is a higher degree of organism — a more complex structure of the body, necessitating a machinery, as it were, for aerating the blood. Consequently, there is a regular and continuous movement through the vascular system, and

upon the maintenance of this, the activity of all parts of the body is dependent.

The agents of the circulation, or the circulating apparatus, consists of a heart and bloodvessels viz. arteries, veins and capillaries. The heart is a hollow forcing pump, in free communication with the arteries and veins, which receives the blood at one orifice, and drives it out in successive impulses at another, and which by its unceasing action keeps the blood in continual motion. The arteries are the vessels which convey the blood from the heart to the different tissues and organs of the body. The capillaries are so called from the minuteness of their size, and are a network of anastomosing tubules,

which are intermixed with the substance of the tissues, and are the vessels which bring the blood into intimate contact with the cells and fibres of the tissues of the body. The veins are the vessels which convey the blood back from the tissues to the heart. The part which each of these four sections of the circulatory apparatus plays in maintaining the circulation of the blood is different, & will, therefore, require to be studied in each of them separately. The function of the heart differs greatly in different classes of animals, owing to the different arrangement of the respiratory organs. The respiratory apparatus being one of the most important in the body, and the one most closely connected by anatomical relations

with an organ of the circulation, the latter are necessarily modified in structure to correspond with the former. In the lower orders of animals, in some insects, for instance, the heart consists of a single muscular tube.

In fish, it consists of two principal cavities, an auricle into which the blood is received, and a ventricle into which the blood is driven by the contraction of the auricle. From the ventricle, which is generally larger than the auricle in such animals, the blood is driven into the main artery supplying the gills, and there becomes oxygenated. In reptiles the heart is composed of two auricles and one ventricle, the ventricle being the common organ of propulsion, both for the lungs, and

and for the general circulation. In the lower animal kingdom, the arrangement of the blood vessels is of a consequence relatively efficient but nevertheless inefficient because in many of them, such as the frogs and water lizards, the integument itself, which is moist, smooth and naked, takes an important share in the aeration of the blood.

The human heart in the adult subject occupies an oblique position in the thorax. Its apex is directed downwards, forwards and to the left side; and in the present state corresponds to the interval between the fifth and sixth ribs. Its base corresponds to the interval between the third or fourth, and the eighth dorsal vertebra, from which it is separated by the lungs

retained in the posterior mediastinum.
In fact the base corresponds to the sternum
at about the end of the cartilage of the third rib.

## Weight and dimensions.

The size and dimensions of the heart have been
made the subject of extensive observation, more
especially with a view to determine some standard
dimension with which to compare the deviations
occurring in disease. It was Laennec,
Skoda, who stated as the result of his
experience, that the heart in its normal
condition is about equal in size to the
closed hand of the individual. This,
however, is considered an imperfect com-
parison. Linear measurement of a
fluctuating organ like the heart is not
of much consequence. Its weight

on an average, can be more accurately ascertained than its size, from the fact that the weight of the heart in the living subject and that of the cadaver are the same. There have been many estimates as to the relative weight of the heart in the two sexes; but one best accredited authority, and the one generally accepted at the present day is that of Dr Peter Reid who places the average weight in the male at 11 oz. and in the female at 9 oz. giving a difference of 2 oz between the sexes.

The heart is divided internally into four cavities, two place at its base and named auricles and two occupying the body and apex named ventricles.

The auricles are destined to receive the returning blood from the great veins, and to deliver it into the ventricles; whilst it is the office of the latter to propel the blood through the body. The ventricles have, therefore, much thicker and stronger walls than the auricles. Each auricle opens into the ventricle of the same side, but the right auricle and ventricle are entirely shut off from those of the left side by an impervious partition placed lengthwise in the heart. The blood passes out from the left ventricle by the great artery of the body, called the aorta; thence through its numerous branches to the different parts of the system, and is returned again, by the veins, to the right auricle. In passing from the

arteries to the veins, the blood changes in colour from red to dark and is otherwise altered in quality, and in this condition it is unfit to be again immediately circulated through the body. On returning, therefore, to the right side of the heart, the blood, now dark and venous, must reacquire the florid hue and other though less obvious qualities of arterial blood, before it is permitted to resume its course.

For this purpose, being discharged by the right auricle into the right ventricle, it is driven by the contraction of that ventricle, along the pulmonary artery and its branches to the lungs, where passing through the capillary vessels of these organs it is exposed to the influence of

chemic and undergoes the requisite changes, and having now become fluid again it enters the commencing branches of the pulmonary veins, which ending by four trunks in the left auricle, convey it into that cavity, whence it is immediately discharged into the left ventricle, to be again sent along the aorta and through the system as before. Its course from the left ventricle along the aorta, through the system and back by the venae cavae to the right ventricle, is named the greater or systemic circulation, and its passage through the lungs by the pulmonary arteries and veins from the right to the left side of the heart, is termed the lesser or pulmonary circulation;

but the blood must go through the lesser and greater circulations in order to perform a complete circuit or to return to the point from which it started. The passage of the blood through the heart is not a continuous and steady flow, but by alternate contractions and relaxations of the muscular parietes of the heart, the blood is propelled in successive impulses. Each one of these successive actions is called a beat or pulsation of the heart. The sounds of the heart are two in number, and they can be distinctly heard over the cardiac region, where they are found to be quite different in position, in tone and in duration. The first sound is heard with the greatest intensity over the anterior surface

of the heart and more particularly over the 5th rib and the 5th intercostal space. It is long, dull and smothered in tone and occupies one half the entire duration of the single beat and is caused by the closure of the auricular-ventricular valves. A combination of causes has been attributed to the production of this sound. It is unnecessary for me to give them here, the one I give is now the accredited belief and has been proven by experiment. The second sound follows immediately upon the first so close indeed that it is difficult to distinguish them. It can be heard most distinctly over the aortic & pulmonary valves, that is over the sternum at

the level of the 3rd costal cartilage. It occupies one quarter of the whole beat, and is followed by an interval of silence occupying about one quarter of the whole. So the pulsation of the heart may be said to be made up of four parts, of which two are occupied by the first sound, one by the second, and one by an interval of silence. The cause of the second sound, as can be proven by experiment, is caused by the sudden closure and tension of the semilunar valves.

## Arteries.

The vessels were so named (ἀρτηρίαι) by the ancients, from the notion that they contained air, this error which had long prevailed in

the schools of medicine was upheld by Galen who showed that the vessels called arteries, though for the most part found empty after death, really contained blood in the living animal. In their mode of distribution they generally occupy protected situations, for instance, after coming out of the great visceral cavity they run down the inner side of the leg, instead of the outer and anterior part where they would be more exposed.

The arteries are cylindrical tubes which proceeding from the aorta ramify throughout the whole organism, distributing the blood to all the vascular parts. They are composed of three different textures; 1st the external

tunic, composed of areolar tissue & commonly called the cellular coat, 2d the middle coat or fibrous tunic, and 3d the epithelial tunic. It is unnecessary to enter into the microscopic anatomy of each of these tunics — their physical & vital properties &c. other than to state that their elastic reaction is evidently resident in the middle fibrous coat, and in the same tunic, the contractile power of the artery resides, as has been proven by John Hunter. The movements of the blood through the arteries cannot be better described than by Dalton, and is caused primarily by the contraction of the heart, but is at the same time regulated and modified by the

elasticity of the vessels. The mode in which it takes place is as follows. The arterial system is a vast and connected ramification of tubular canals, which may be regarded as a great vascular cavity divided from within outward by the successive branching of its vessels, but communicating freely with the heart at one extremity and with the capillary plexus at the other, and this vascular system is filled everywhere with the circulating fluid. At the time of the heart contraction, the muscular walls of the ventricles act powerfully upon its fluid contents. The auriculo-ventricular valve at the same time shutting back and preventing the blood from regurgitating into the ventricles, it is forced

out through the aortic orifice. A charge of blood is therefore driven into the arterial ramifications, distending their walls by the additional quantity of fluid forced into their cavities. When the ventricle immediately afterwards relaxes, the active distending force is removed, and the elastic arterial walls, reacting upon their contents, would force the blood back again into the heart, were it not for the semilunar valves which shut together and close the aortic orifice. The blood is therefore urged onward under pressure of the arterial elasticity into the capillary system. When the arteries have thus again, actually or, tend themselves and returned to their original dimensions, they are again distended

by each contraction of the heart. In this manner a succession of impulses or distensions is produced, which alternates with the reaction or subsidence of the vessels, and which can be felt throughout the body wherever an arterial ramification penetrates. This phenomenon is known by the name of the arterial pulse.

The rapidity of the circulation through the arteries is very great. It is greatest in the immediate neighborhood of the heart and diminishes somewhat as it recedes from the centre of the circulation. In the carotid it moves at the rate of twelve inches a second.

## Capillaries.

That the blood passed from the arteries into the veins was of course a necessary part of the doctrine of the circulation as demonstrated by Harvey; but the mode in which the passage took place was not ascertained until sometime after the date of his great discovery.

The discovery of the capillary vessels and of the course of the blood through them was declared to be one of the first fruits of the use of the microscope in anatomy and physiology, and was secured for Malpighi in 1661. It is one of those rare instances in which these sciences have been so greatly indebted for their advancement.

The existence of the capillaries and

It is during the capillary circulation that the blood serves for the nutrition of the vascular organs. The force by which the blood circulates through the capillaries is maintained by a vis a tergo, which is the propulsive force of the heart, but is regulated and modified by the capillaries themselves. Their calibre is pretty nearly of uniform diameter. The rapidity of the circulation is much less in the capillaries than in the arteries or veins. The result obtained by different observers, show that the rate of movement of the blood through them is less than one thirtieth of an inch per second, or not quite two inches per minute.

## Veins

The veins ramify throughout the system like the arteries, and like them are composed of three coats, an inner, middle and an outer; though in structure they differ from the arteries in having much thinner walls, so that when cut across or emptied they collapse, whereas a cut artery presents an open orifice.

Notwithstanding their comparative thinness, however, the veins possess considerable strength, more even, according to some authorities, than arteries of the same calibre, as has been proven by experimenting with the aorta and vena cava of a sheep.

The artery supported a pressure of

158 pounds, while the vein resisted 176 pounds. Most of the veins are provided with valves, a mechanical contrivance beautifully adapted to prevent the reflux of blood. The circulation of the blood in the veins is not as rapid as in the arteries, and yet much more so than in the capillaries. According to Dalton it is dependent on three different forces, 1st the respiration, by opening a vacuum as it were and sucking the blood in; 2d by the contraction of the voluntary muscles, and lastly, the vis a tergo or the capillary circulation. It is maintained, then, chiefly by the same force through

which it is driven through the arteries and capillaries, aided by a sort of suction in the centripetal direction, which is caused by inspiration and by the diastole of the auricles, and promoted likewise by the contraction of the various muscles, among or through which the veins pass, and by the position and mechanism of the valves. With regard to the rapidity of the venous circulation no definite rules can be laid down. It is less than the arteries and considerably greater than the capillaries. I think I have seen it somewhere stated at eight inches per second.

with the venous ends my description of the circulation, for as it is nevertheless, and space permits, I would give the foetal and portal circulations, which I have already far transcended my limits.

AN

# Inaugural Dissertation

ON

[illegible]

SUBMITTED TO THE EXAMINATION

of the

## Provost, Regents and Faculty

of

# PHYSIC,

of the

## UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

## Doctor of Medicine,

by

[illegible]

of

[illegible]

Session 1865-66

[illegible]

attacks [illegible] the [illegible]

bones of the large intestine [illegible]

[illegible] and [illegible]

[illegible] pain in the [illegible]

and [illegible] to stool.

Symptoms:—

The disease may be ushered in by a sense of dullness, impaired appetite, a general lassitude, [illegible] dry skin, depressed pulse, slight chills, dull and constant pain along the intestinal tract [illegible] usually [illegible]

[illegible] the [illegible]

[illegible] are [illegible] in [illegible]

[illegible] on and [illegible] the pa-

tient, ~~without [illegible]~~

the will experience no extraor-

dinary pains in the abdomen,

[illegible] tenesmus, and evacuations

of bloody mucous; and this

will be the case most fre-

[illegible] of [illegible]

[illegible] that [illegible] in [illegible]

[illegible] the [illegible] of the

intestines. In the majority of ca-

ses the fever is developed befo[illegible]

the characteristic [illegible]

[illegible]

been recorded that [illegible]
which prevailed [illegible]
Spain, the [illegible]
forded a never [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] slight diarrhoea, which soon terminates in resolution under [illegible]ious management and a fe[illegible] [illegible] [illegible]lation.

Causes.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] attendant in this disease. That poison is probably lying dormant in the system, in am-

[illegible]
[illegible] the steps of the middle
[illegible], marching with portentous
[illegible] the [illegible] of the
triangle of life. It is seen
in [illegible]
[illegible]
[illegible] the application of
[illegible]
latent or debilitating cause, a
formidable malady is [illegible]
[illegible] Miasmata can partly be
[illegible] a predisposition, and a most
prodigious one, and if in this state,
"sudden reduction in the temp

[illegible]

[illegible] of [illegible] a [illegible]

[illegible] its [illegible] for its [illegible]

[illegible] quantities; indigesti-

[illegible] unwholesome food;

[illegible] of mental aber-

[illegible] "drinks," such as malt li-

quors, cider, weak wines &c.; la-

[illegible], violent purges, [illegible]

[illegible] medications; and irritati-

[illegible] of all kinds taken into

[illegible] the bowels. It

[illegible] to be a contagious disease. The proposition admit that
So much is ordinary form.
[illegible]
ned situations, more manifest
[illegible]
critical, without due attention to
[illegible] and ventilation. The
disease appears to be common
[illegible] to [illegible] more [illegible]
[illegible] spread; but the result is probably owing to the influence
[illegible] of foulness exhalations, not
[illegible] acknowledged to be capable of producing epidemicity, or
[illegible] any malignancy [illegible]
[illegible] "Opinion [illegible] says, "the result

[illegible]

[illegible]

[illegible]

[illegible]

fever, now generally admitted
to be [illegible]
it is this disease which is ac-
[illegible]

Neuralgias are much more
[illegible]
autumn than in winter, and
[illegible]
chronalis. In miasmatic dis-
eases [illegible] are much
more apt to suffer from
[illegible]
diseases recorded together are [illegible]
[illegible] to be attended

[illegible]

[illegible]

[illegible]

Prognosis

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

ious character, the prognosis

[illegible]

[illegible]

[illegible]

[illegible]

tive and fetid stools, are indic-
ative of disastrous results.

Anatomical Characters:—

Many theories have

been adopted and different
views entertained in regard to
pathology of [illegible] Hoffman
also, [illegible] and attributed
it the seat of the disease to the
large intestines [illegible]
to consist in relaxation of the
intestines generally, leading the
Germans ~~[illegible]~~ adopted the [illegible]
ions, and [illegible] sufficiently
strongly, the [illegible] part
of the intestinal canal which
was [illegible] other. Though
[illegible] and Hilsch [illegible]
the large intestines path. th[illegible]
were the first to observe that the
[illegible] were
[illegible] affected. The professional

[illegible]

mucous membrane of the [illegible]
and rectum shows signs of
[illegible]
much thickened, and frequently
ulcerated. Occasionally, vari-
[illegible] are found;
in some instances, evidences of
[illegible]
into the small intestines, and it
is said, even to the stomach. The
liver is invariably involved, and its
structure [illegible] disorganized.
Probably in these cases where re-
[illegible]
in that viscera were not-

[illegible]

[illegible]

[illegible]

As Dr. Coxe said

[illegible]

[illegible]

"There are four morbid conditions

[illegible]

and the general indications to be

pursued in his remediate man-

agement; namely, 1. inflamma-

tion of a greater or less extent of the

mucous membrane of the intesti-

nal canal; 2. general irritated

vascular excitement; 3. torpor

of the cutaneous exhalants; 4. dis-

ordered function of the liver."

[illegible]

1. moderate the circulation, relieve [illegible]
2. [illegible] the [illegible]
[illegible] to [illegible] of [illegible]
3. combat local inflammation.
Now in the first place how stat[illegible]
[illegible] the [illegible]
[illegible] this [illegible] blood-letting has
been for years resorted to, and the
[illegible] of which [illegible]
[illegible] I [illegible] [illegible]
I believe we are living [illegible]
thenic age, and diseases par-
take of that character now
more frequently than [illegible]
[illegible] [illegible] of plethoric [illegible]
it. When there is much tenderness
of the abdomen, with a full and

[illegible]

[illegible]

[illegible]

early stages of the complaint, and under no circumstances to be practiced indiscriminately. Out of six cases which came under my notice last summer in the country, there was only one I considered, demanded blood letting, it occurred in a man [illegible] robust and vigorous habits, with a tense and frequent pulse, though to [illegible] without resorting to the remedy. I sincerely believe, had it been practiced, the recovery would have been more speedy and the

[illegible] inflammed his eye, been awake
lips and leeches over the abdome
are of great benefit, and ~~[illegible]~~ are
[illegible] for [illegible] [illegible]
[illegible] [illegible] abstraction of blood
Emetics have been [illegible]
and often with good results, they
should be employed at the com
[illegible] [illegible]ncement of the disease, [illegible]
[illegible]
[illegible]
[illegible]d, and there are frequent and
ineffectual efforts to vomit,
without the signs of inflammation
[illegible] of that organ — of this cases
[illegible]
the most efficacious, and

should receive the preference—[illegible]
[illegible] than its smoke effects may
be, one dose, it is said to produce
an increased secretion of mu-
cus, and in fact thought to be
exercise a decided and ben-
eficial influence over the
disease—the administration of
of it in large doses in Bronchi-
tis regions would not in my
opinion [illegible] [illegible] prac-
tice, because in those localities
there is generally a constitutional pre-
possession to bronchitis, and it would not
only add greatly to the distress
of the patient, but would [illegible]
[illegible] of the [illegible]

tiness by mistake. I do not
so say it should not be employed, for in small doses combined with other remedies,
great value in restoring the de
[illegible] to
its healthy state. Cathartics
usefully used are among o
[illegible]
[illegible] of the disease. By [illegible]
the bowels of these acrid
secretions behind them, and
diminish congestion of the portal vessels. There are other
indications they fulfill which
require consideration, and
will be spoken of under the
head of Special Remedies.

[illegible]

[illegible]

[illegible]

we can find a remedy to
relieve the suspended func-
tions of the liver, and pro-
[illegible]
time which is going on,
as a consequence of an as-
[illegible] life in the intestina
[illegible]
[illegible]
[illegible]
meets our demands, and
[illegible]
[illegible]
[illegible]

[illegible] should
[illegible]
in about [illegible] hours
[illegible]
[illegible]
[illegible]
added with great benefit=
The union of anodyne and laxative remedies is particularly beneficial in cases attended with much pain and soreness of the abdomen.
In instances of this kind, the irritability of the bowels is often so great, that even the mildest laxatives frequently occasion much griping and spasmodic contrac-

tion of the [illegible], the reappearance of [illegible] stools or a feculent discharge are procured by these operations." Opium in thus removing an obstacle to the action of cathartics adds to its effects by relaxing the spasm of the intestines and allaying the irritation. In the congestive stage of Dysentery the Sulphate of Magnesia is a [illegible] very valuable agent, especially when given after the administration of [illegible], it aids the operation of the medicines, and relieves the engorged vessels of the mu-

tation by mercury is [illegible] [illegible] [illegible] [illegible] may be promoted [illegible] [illegible] [illegible] to [illegible] a copious secretion of bile by small doses of calomel combined with opium and ipecacuanha; the opium allaying pain and restlessness, while the ipecacuanha stimulates the cutaneous exhalents. In these circumstances the following formula is valuable

℞.

Hydrarg: Chlorid: Mit: gr. i
Pulv: Opii
Pulv: Ipecac. āā gr. ß

M. ft. pil.

To be taken every [illegible] [illegible]

[illegible] Quinine must be included in our list of valuable remedies and should be given in full doses [illegible] of [illegible] conditions the intermittent or remittent character of the fever and [illegible] the [illegible] persons. All [illegible] with the [illegible] [illegible] [illegible] mode of administration [illegible] Cases of bad [illegible] [illegible] [illegible] need in this disease, and not restricted to any particular stage. It is not in my opinion an appropriate remedy in the early stage, but when necessary [illegible] sufficiently [illegible], and [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] attending cases
case it is valuable, and in fact
we have no more effectual means
of obtaining them than by the
employment of this agent. The
following combination I have
found useful in the advanced
stages.

℞.

Sodhal. Plumbi gr. xxiij

[illegible]

Pulv. Ipecac. ō-ā gr. v

M. ft. pil.

[illegible]

six, three or four hours. If the
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] the restlessness at [illegible]

[illegible] answer our purposes as well as c-
[illegible] of [illegible] to
[illegible]. In the whole course
of the disease [illegible]
the [illegible] [illegible]
ind, and when the inflamma-
tion has arrived at an advanced
[illegible] [illegible] we must [illegible] the
[illegible]
wine and brandy. Calomel, Opium,

Ipecacuanha, Quinine, Acetate of lead, and Blisters are the remedies on which our reliance must be placed and "so important" is the remedy in the hands of a skillful physician that without it his hands are, as it were tied, and his powers of doing good in Dysentery greatly diminished."

AN

# Inaugural Dissertation

ON

Diagnosis & Treatment

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

A. Wood Burton

of

Maryland.

Session 1866.

By Diagnosis we distinguish one disease from another. In an admirable work written by Dr. Ellidson, he remarks that a comparative stranger may know the location of the streets, lanes and houses of a city, but to know what is going on within those houses etc. requires a familiar acquaintance — So it is in disease of the human body, it requires a close acquaintance with its anatomy to recognise the changes that take place in disease. Since the days of Laennec the diagnosis of obscure diseases has been reduced to rules of greater accuracy, and the practitioner can-

now make his diagnosis with Comparative clearness and precision.

Laennec merits still greater credit from having deprived Empirics of a fertile field of profit and deception, by pretending to cure Phthisis, when the disease in reality was only Bronchitis, Emphysema or other like diseases.

Physicians often meet with obscure cases in which there are no leading symptoms or but slightly marked except by a general cachetic debility of system, connected with evident depravity of the blood, which afford a wide scope for the employment of various alteratives and stimulants which are known to exert a salutary influence

by their kind of specific relation which they bear to syphilitic and scrofulous taints. The first step in the above cases is to ascertain whether there exist periodicity or paroxysms in the attacks. If such be not perceived we might should turn our attention to the auscultation and percussion of the heart, lungs, liver and spleen and if neither functional nor organic lesions be discovered and nothing can be elicited from the history of the case, then by the use of Mercury, Iodide of Potash, Arsenic, Iron etc. endeavor to break the morbid chain of disease or supplant it by substitution.

A diseased condition of the system may depend on a general debility, and while tonics should be freely administered, we should not neglect to address remedies to the deep derangements of the system.
If we are undecided whether a patient has asthma or asthmic disease, or if it shifts its form so as to become involved in obscurity, and at the same time if the patient be harassed by night sweats, we then have an almost infallible sign of debility and hence the plan of treatment is readily associated as the use of Carbonate of Ammonia, Quinine, Brandy, Opium Etc.

A judicious practitioner guided by his diagnosis will know when to rely on a remedy, when to use it as an adjuvant and when it will do harm and is contra-indicated.

A few examples where a false diagnosis may be made, we think, will not be out of place, as they not unfrequently lead to the discredit of the practitioner and detriment of the patient. We have been informed of a celebrated surgeon who died of chagrin, because having operated for calculus without the preliminary symptom of sounding — he cut, found no stone and died from grief. We are also cautioned not

mistake
pain in the left shoulder for the
malady but inspect closely with the
suspicion of lung disease and the
truth will become evident. It is an
egregious mistake to diagnose in-
tussusception or inflammation of
the bowels for constipation, and
consequently give cathartics which
would only aggravate the danger.
In morbus coxalgia the true dis-
ease is often masked by pain in
the knee, as is also the case in
sciatica. Never should a disease
be treated from its name, but
according to its symptoms and
intensity; neither should one rely
blindly on the experience of others

as many of the cases we find recorded were of metastasis intensity and may have got well spontaneously as well as many other circumstances often tend to make recorded cases fallacious. The great Celsus in his error concerning mucus membranes eminently illustrates this; so firmly was he persuaded that mucus membranes never healed that he strenuously advocated this doctrine, and succeeded in spreading his dogma over the whole earth, and defeated the advance of surgery for many centuries. Every one now sees the error of blindly following that man's opinion. In fact the human mind seems to be-

ism warped by the unremitting pursuit of one aim or the cultivation of a certain train of ideas to the exclusion of others. We know that the total neglect of certain faculties and excessive education of others is a fruitful source of a species of insanity.

If we diagnosticate a disease to be a desperate one, it does not necessarily follow that something desperate must be done, as, in many cases it might only be adding to the danger, for after remedies cease to do good they generally do harm, hence the impropriety of killing a patient because "he is going to die any how."

We may here cite various forms of—

anaemia, in which there is a frequent pulse, palpitation of the heart, nervous agitation, many murmurs and symptoms in which a casual observation would incline us to use depletory measures, by mistaking them for plethora, over excitement, cardiac disease etc. when, in fact, they require tonic, wine, wholesome food, exercise etc. Anaemia may usually be detected by paleness of the probabia, blanched countenance and we arrive to a determination of the disease by the presence of a murmur in the jugular veins. Were it not for hereditary diseases, and if the laws of hygeine were strictly observed

many diseases of a grave character might be banished from the face of the earth. Examples of this fact may be seen in many valetudinarians who are aware of the nature of their malady and are accordingly prudent in all things which pertain to their health, and, in consequence of which, outlive their more fortunate neighbors who have long boasted of their Excellent health. In fact after there is no hope of a person ever being entirely well, yet he may enjoy a fair degree of health for years; neither does it necessarily follow that because some organic lesion exists that the patient's

life must be shortened as is the popular belief: for a person suffering from a structural lesion may live years in this condition, but will usually be much harassed from dyspnoea, anasarca etc. Watson relates the case of Dr. Ferguson who was stricken down by apoplexy at the age of sixty, but by the cautious observance of the laws of hygiene lived to the ripe old age of ninety years.
A few inherit disease, whilst many invite it by extremes of living and excessive indulgence and exposure of all kinds, for it is notorious that wilfulness, necessity or ignorance cause many diseases and prema-

tion decay. In the present age no man can afford sufficient reasons for abusing the laws of health; good food, air and clothes are within the reach of all classes, and are not the perquisites of a favored few. There are few individuals who cannot date the accession of their ills to excesses of some kind or another. Von Linsohe said the health of the whole body is tempered in the stomach: this seems to be almost true as most of our ills seem to take place from this fertile source. The whole world is given to excessive indulgence of the "pleasures of the table", saying nothing of the alcohol-

ic stimulants taken on various occasions. It is a singular fact that the popular mind has never been disabused of the erroneous belief that alcoholic liquors increase the heat of the body and its power to withstand cold.

Dr. Kane, in his Explorations in the artic regions, noticed that those who drank spirits were for the most part overcome and died of cold, while those, who, were more abstemious, outlived the severity of the climes to which they were exposed. Napoleon's retreat from Moscow furnishes another sad proof of this error. A division of his troops were obliged to sleep in the snow. One-

regiments of Eight hundred men were supplied with liquors and all except seventeen were overwhelmed and perished from cold: while among the other troops exposed to the same hardships no such fatality was observed. Many diseases of hereditary origin seem to lie dormant in the system, only awaiting some exciting cause to light them into full vigor. We have this instanced in patients who are often heard to say that they contracted Phthisis by a heavy cold or Exposure to wet, when, in fact, the diathesis was already present and only required the cold for its full development.

A person born with a scrofulous diathesis may be blessed with plenty of good food, pure air, exercise etc. and may pass a long life without the disease ever becoming developed, whilst, on the other hand, a brother placed under less favorable circumstances may have it developed at an early period of life and consequently have his existence greatly curtailed: this is eminently true of all diseases of a scrofulous nature. Deficiency of fresh air is also a fruitful source of disease, as is shown by Cholera Infantum which annually sweeps off thousands of the poorer classes of our cities who

live in crowded rooms, breathing air saturated with Sulphuretted hydrogen and deprived of the vivifying powers of free ventilation.

The effects of bad air is well illustrated by the history of the black hole of Calcutta, in which one hundred and forty six British soldiers were confined all night with only a small window for ventilation — but when the morn came dim and sad, but twenty three were left to tell the tale.

Pure air, in a word, is the great prolonger of life, while foul air is its destroyer. We now turn to a class of diseases which are hard to-

baffle with successfully, as they naturally have a fatal tendency;- cases in which the rule is death, the exception cure. As is said there are exceptions to all rules, so by extraordinary diligence should we endeavor to make every case which falls under our observation an exception of this kind:- and although a disease may seem to march steadily on to a fatal termination, still let us be vigilant, and use every means in human power to change the fatality of its course. The rule laid down by Cullen is to obviate the tendency to death by giving the disease a different course.

Phthisis ranks prominent among the foregoing class. In forming our diagnosis of Phthisis, ascertain carefully whether Pneumonia or Pleurisy has ever existed, as chronic Pneumonia so nearly simulates Phthisis as to be mistaken for tubercular deposit, and the solidified lung, attended with emaciation, languor, pain in the chest, cough etc. may add materially to the deception. We should bear in mind that Phthisis is apt to invade the upper lobes of the lung, while Pneumonia and Pleurisy the lower lobes. Hæmoptysis and hectic fever may corroborate

the face of the evidence of Phthisis. In all structural disease we should measure the amount of departure that has taken place and extends from the healthy standard in consequence of perverted action. In Phthisis digestion seems most at fault, hence the importance of improving digestion and promoting the appetite. But when the appetite continues to fail, and the presence of weight and oppression exists in the epigastrium, it becomes a source of grave solicitude for the future restoration of the patient. Digestion, and good assimilation seem to be the sheet anchor in Phthisis: this

is equally true in all diseases of a lingering type. In such cases nothing acts so well as Nitro-Muriatic-acid in small doses; it seems to act like magic. It might be expected that general treatment of this disease must be good diet, Exercise in warm, dry air, diversion of mind, and gentle tonics — among which Cod liver oil ranks preeminent, as it supplies the place of both food and medicine; — in conjunction with which the patient should enjoin a rigid observance of the laws of hygeine. There is still another form of disease which will bear a passing notice. I allude to the mania-

of certain persons per medicine. We occasionally meet with persons possessed of imaginary ills, and who firmly believe, unless they are under a physician's hands, their health is suffering and their imaginary ills increase. 'Tis often almost impossible to disabuse their minds of their hallucinations, lest their fancied diseases may become real from sympathy of the body with the mind. Hysteria may be called queen of this class of affections. Its ills are partly real and partly imaginary, and even at times appear to be epidemic. If the patient is attacked with a hysterical fit, an emetic

will often restore the patient - followed by tonics, Hoffman's anodyne, exercise, division etc. to make the cure permanent. Many are afflicted with this strange kind of disease, because they have no employment and take up all their time in thinking of their own ills and infirmities, and the most persistent efforts will often fail to dissuade them of their erroneous notions. In cases of doubtful diagnosis trust to nature as much as is consistent with the safety of the patient and proceed cautiously to meet the complications as they arise. Look to the state of the pulse,

tongue, apetite, bowels etc. If the disease has imposed the stomach in a loaded condition and there exist no manifest contra-indications, an emetic or cathartic may be administered to clear out the primia via, and in the mean time read the best authors on that class of diseases, and generally we will be able to make a diagnosis without much delay. If a patient complains of deafness, and informs us that it is aggravated in damp weather, the evidence is pretty clear that his suffering is caused by a preternatural quantity of cerumen,

and in general all that is requisite is to syringe the ear with a tepid solution of water and castile soap: proceed cautiously and down introduce the syringe into the meatus leaving be down to the tympanum. Foreign substances may often be removed in this way, after numerous efforts to grapple them with instruments have failed. If insects, scabies, maggots, worms etc. are lodged in the Ear and cannot be removed otherwise, - by remembering they breathe by spiracles we can easily destroy them by introducing animal oil into the ear, taking care not to use the vegetable oils as their concretion -

would be objectionable. As a general rule, in obscure cases, when alteratives dont seem to be contraindicated, they may be tried cautiously with the hope of success. Mercury for instance may be tried in hope that it may supplant the disease by setting up an action of its own and thus cutting off the morbid supply by removing its roots. If this fails, try others of the same class, as Iodide of Potash, Fowler's Solution, Iron etc. It is often exceedingly difficult to obtain the history and symptoms of a case, on account of patients being terror stricken and other exciting causes

which make it difficult to determine how many symptoms are due to fright, and how many to the diseased condition. If unable to make out the nature of a case, strip it of its mysteries by comparing it to known diseases, and deciding what it is not, so as finally to detect its true character.

And now as to fevers— one writer very aptly remarks— a pilot may be unable to quell a storm, yet, by his skill may guide a ship safely through it. So in fevers;— if we cannot cure a fever we may by judicious guidance bear the patient through its perils to recovery. When called upon to see

a fever, first ascertain whether the disease is primary or secondary, whether the patient has been exposed to malaria or has any knowledge of being exposed to contagious fevers, as the diagnosis may be formed more promptly. Certain diseases seem fitted to submit to certain remedies, as Syphilis to Mercury, intermittent fever to Quinine Etc. The latter remedy can be prescribed with a great deal of certainty in periodical fevers, if administered properly. All eruptive fevers, may be treated on the expectant plan, except for complications or obvious indications demanding more active treatment.

It is well to remember the critical period following soon after the fever reaches its acme. We should be careful not to mistake hectic fever for intermittent, as the former springs from an ever present cause. Hectic fever is often paroxysmal, hence its liability to deceive and much mischief might be caused by the treatment which should be administered in intermittent. The sequels of fevers should be warded off by the timely use of preventatives and avoidance of exposures, over indulgence etc. An excellent rule in all cases of fever is to direct the patient to wear a wide flannel bandage bound tightly around the loins,

from the time of commencing convalescence until complete recovery takes place. This simple precaution will save much suffering;- use blisters cautiously in collapse and cold stage of fever as well as in persons of an asthenic temperament lest when reaction takes place they may act with unexpected force and produce sloughing and gangrene.

We will now say a few words as regards organic diseases. Formerly their pathology was obscure, but fortunately we are now possessed of a few simple tests, by which, one who has not the advantages of microscopic or far fetched chemical analyses, may ascertain the condition of-

the various organs and of the excrementitious substances, with all the certainty which is required for the treatment of disease. In serious practice the tests for the sugars, albumen, urates, chlorides etc. are now so well known that it is hardly necessary to describe them, and which enable us to tell whether disease is structural or functional. Physiology teaches us that the glands are agents of secretion and excretion, which in health seem dovetailed into one another and are equalized, and as this equilibrium varies from its normal standard the health is proportionately disturbed and waste

emens, either from the lack of assimilation or by the too rapid excretion.

Percussion and auscultation have become of late years a valuable means of determining the existence and extent of disease. One learned practitioner has declared, that were he deprived of the plessimeter, stethoscope, litmus paper, heat, acids and opium he would cease the practice of medicine, that he might not lose the credit he has already gained. The arcus senilis or the old man's bow is a fatty degeneration of the base of the cornea, and if occurring in a patient of suspected fatty degeneration of the heart, brain,

Apoplexy &c. It may be regarded as confirmatory symptom and goes far to settle the correctness of our diagnosis. The physician is liable to be called on at any time in cases of drowning, hanging, choking &c:- in these cases our object must be to supply oxygenized air by artificial means, until the medulla oblongata regains its co-ordinating power and again responds to the urgent call which the blood is making for regeneration. Halle's ready method will be found invaluable in these cases. Cases of frost bite will also demand great attention on the part of the practitioner if seen at an early date.

It is a well known fact that fish in our northern lakes are often cut out in the blocks of ice during the cold season, and in this condition are transported for hundreds of miles, and months afterwards the ice melted and the water gradually allowed to attain a moderate temperature. Contrary to what might be expected the fish soon regains all his vivacity and sports about the water as if nothing had happened; but, if heated too suddenly, it dies without scarcely showing any signs of life. Now this may afford us a valuable hint to the resuscitation of a frozen limb, and with

the precaution of gradually elevating the temperature of the limb, it may be restored without any serious injury. Medical men are often called upon to diagnose the sanity or insanity of a criminal; or in cases where large sums of money may be invested in their decision, it will often require the closest observations to settle this point rightly, but by patience and close scrutiny we may shield the maniac, detect the malignin and secure justice to the malignin-ers at law. It is worthy of remembrance that an insane man persists that he is sane and endeavors to convince you of the same by gestures,

arguments &c. while a sane man pretending insanity carries his deception too far. Remember the Eye is the true index in such cases which the lunatic cannot control and which the malignier cannot govern to suit his other actions. Again the lunatic raves as much at night as in daytime while the feigner of insanity is quiet and sleeps soundly when all others are at rest. Another species of insanity is found in the disease known as Delirium Tremens. This is of two kinds and produced by opposite causes. One produced by the too sudden cessation of strong drink; the other by a too sudden surcharge of

ardens spirits. The treatment of the two kinds is manifest and widely different. Treat the former by supporting measures, Heyham's Tincture of Cask and like tonics; the latter by eliminating poisonous germs by emetics, cold douches, purgatives and sleep. And here ends all I have to say on diagnosis and treatment of diseases, with the three following Rules. – First – Never treat a disease from its name, but its symptoms. Second. – Never strike in the dark by giving a remedy without an object. Third – That a correct diagnosis is a guide to successful treatment and the foundation of all successful practice.

Jan. 10th. 1866. – James H. Burton

AN

# Inaugural Dissertation

ON

Varicella or Small Pox

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

# PHYSIC,

of the

# UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

## Doctor of Medicine,

by

B. Frank Spaulding

of

Washington City D.C.

Session 1866.

# Varola or Small Pox.

This is an acute exanthematous contagious disease, belonging to and possessing all the distinctive properties of the proper exanthems, and is one of the most contagious operations with which we have to contend.

Its characteristics are an initiatory fever of from three to five days duration, which is succeeded by an eruption, and its passes through the papular, vesicular, and pustular stages, and is completed in about eight days at which time the febrile action is again established, and is known as the secondary fever. The origin of this extremely revolting, and much dreaded malady

is very obscure indeed; in fact it remains to such an extent in the dark that it is almost entirely useless to attempt to delineate it from the source from which it originated.

Dr. Moore's history of small pox tells us that it prevailed in China and Hindostan more than nine thousand years before the birth of Christ. It is also said to have been first noticed in Arabia about the eighth century, and was greatly spread by the Mahometans which followed shortly after this period. According to the statements of all writers on Variola, it was entirely

unknown to the Europeans prior to the eighth century, at which time it was introduced into that part of the World by the Saracens. It soon spread rapidly, and succeeded upon this period to the fifteenth century, previous to which time it was commonly asserted, that this disease (for then it existed as such) was an entire stranger to the inhabitants of this Hemisphere. But in fifteen hundred and twenty it was introduced into Mexico by one of the Spanish Expeditions, and spread with great rapidity and destruction, so destructively

did it rage, and so fatal was its attack that it caused in a short time the death of at least [illegible] of people. It is needless to dwell longer upon or devote more space to this portion of our subject which has been so often and so thoroughly discussed by other writers, suffice it to say that it has existed from time immemorial, and still exists to a greater or less extent in some portions of the Earth.

Having shown briefly upon the ancient history of Smallpox we will now proceed to

describe the varieties which are recognized by all Physicians, and varies on this disease. The varieties with which we have power to deal is the distinct which is the most prevalent and great life dangerous than the other prominent varieties, known as the Confluent. The former is recognized by its pustules, which are separate, circumscribed, and distinctly, with an intervening space, which is well. The condition of Physiologick is generally healthy.

In the latter variety the eruption

tion is in a state of prodromic congestion, or semi-solid, fluid and after all the resistance to pressure the skin between the patches is pale and the pentadinate vision is in a state of Asthenia. Several other varieties are sometimes spoken of such as the Semi-confluent when the pustules are in clusters, and also the Varicella Corymbosa when the pustules are coryombiated, and further we have a form modified by vaccination and this is termed Varioloid

We will not dwell upon the three latter stages, the two former will suffice both for convenience and practical purposes.

All cases of this disease have been very satisfactorily, and conveniently divided into three stages. First — The incubating stage which lasts until the eruption appears.

Second — The progression and maturation of the eruption.

Third — The declining or convalescing stage.

Symptoms of Diseases of Small Pox.—

About three or four days before the eruption makes its appearance, the patient is troubled with a feeling of malaise, and at the same time there is a sensation of cold with [illegible] of the whole body, or rigors.—On opening and examining the patient today at this [illegible] [illegible] that he has an accelerated pulse, furred tongue, with an increased temperature of the skin, accompanied by [illegible] that is perverted. Appetite then may be anorexia, or the desire for food may be almost insatiable=

There is generally an uneasy sensation on the shoulders, and pressing down towards the back, and when the attitude is bad, the time muscular strength fails, and there is soon the feel of all the shoulders, both pain and weakness. Without any intractable cause, and enumerating hundreds, are the most distressing, and obstinate symptoms with which we have to contend. The above named symptoms are those which most frequently arise in most patients, but there are many others which accompany =

=ally induced a fever on the
brain, death has taken place
in a few hours after the [illegible]
-eidosian membrane, and
[illegible] of the eyes are
flushed, features distorted,
[illegible] delirium, [illegible]
[illegible] delirium, the patient
may be to some extent troubled
by hyperæsthesia, [illegible]
when the disease is attended
[illegible] convulsions [illegible]
children [illegible] the [illegible] of
this disease [illegible] generally
[illegible] the [illegible]
which [illegible] in [illegible]
[illegible] the [illegible] is [illegible]

remittent, and continues all the
while until the appearance of
the eruption, which is
on the 5th or 6th day of disease.
By inspecting the patient carefully you will perceive minute
slight red specks upon the face,
neck, and chest, upon which
parts they generally make their
appearance first. They are dispersed
upon the cheeks, and
lastly upon the trunk of the
body. In severe cases the
eruption is confluent, and
the patient has a stupid
appearance. In this occurs there is a cer-

ration of the fluid is determined
and what is its exchanging
[illegible] sometimes, and [illegible]
[illegible] the.

Second stage.

[illegible] change which
the [illegible] now undergoes
is [illegible] towards the [illegible]
with that of its [illegible]
[illegible] changing [illegible]
the capillaries of the vascular
[illegible], first [illegible] the [illegible]
[illegible] [illegible] of [illegible]
[illegible] the second [illegible] [illegible] they
of the [illegible] the [illegible] of
each [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] a

[illegible] fluid. The vesicles are perceptibly elevated above the surrounding skin. They are circular, distended and concave in the centre. [illegible] the touch they generally [illegible] and the fluid contained in them becomes opaque, [illegible] are now pustules, about the time of their maturation. They lose their concavity and become convex at their [illegible], which occurs about the [illegible] day of the disease. The [illegible] according to the situation, in

condition of the patient. The
deglution-pain is often severe
[illegible]
[illegible]
[illegible]
[illegible]
sometimes barely filled with
an adhesive secretion, which
gives much annoyance and
painfull deglutition is often
[illegible].

The cutaneous surface
[illegible]
[illegible] face causing
sometimes much [illegible]
[illegible]
[illegible] action is very

[illegible]

[illegible] as the

[illegible] at [illegible]

[illegible]

[illegible] and is

easily recognized by an ex-

[illegible]

[illegible] accompanied by [illegible]

about the [illegible] day of

the secondary stage is [illegible]

[illegible]

the third or [illegible] stage

The pustules lose their

yellowish [illegible] and be-

come dry and brownish.

the desiccating process [illegible]

[illegible] on [illegible] fifth

[illegible] due
to the vascularity of the part
and also its exposure to the
atmosphere it relieves the
tension which contains the
pus is relieved and the
substance contained therein
opens out becoming dry and
forming a scab or crust.

The scabs on the face and
neck begin to scale off
about the fourteenth day,
but those upon the ex-
tremities have firmly as
yet retained their integrity.
Then to fourteen of a first vac-
cinated month through that.

[illegible] stage the dwelling [illegible]

[illegible]

[illegible] from the due [illegible] by the interposition of a transparent fluid lens or lens bulbae instead of pus-tules, and these are partially situated upon the epithelium. The fluid which is contained in this pellicle is by the insertion [illegible] the outside epithelium.

Squamates without swelling pits, the surface of the body is covered with scales which the growth and consequently say, when the pustules [illegible]

considered side – this is pretty
[illegible] Comprehend we will note
[illegible] to describe

Gentlemen & Small Pox –

This is truly a formidable disease
[illegible]
[illegible] is
[illegible] all the complications
[illegible]
[illegible] and
surface is often completely
covered with a mass of [illegible]
[illegible] case in which the pustules
are in a state of inflammation
upon the face it is called
Confluent Small Pox –

The excoriating hands in

The vomit of the [illegible] the
[illegible] stomach are very
annoying and often unconquer-
able. We also have delirium, stupor,
and convulsions. The latter is an
unfavourable sign in adults but
not so in children. In connec-
tion with these we have also
hysteria, cough and a pain-
ful sensitiveness of the whole
body to the touch. In this variety
the eruption appears on the
second day usually, but sometim-
es not accompanied
by the rigor which attends
the first. At the Pox. Sometimes
a large effect of the effusion

is detached by a continuous layer of pus which burrows beneath, and stretches to a certain extent the soft palate.

Very frequently the eruption and inflammation extend to the fauces and the passages, causing hoarseness, difficulty to deglutate, and quite prohibited deglutition, the voice, speech, and respiration are always most dangerous, frequently causing death by suffocation. The skin and tissues are heavily enlarged, every feature is persistently obliterated and the patient presents a sad and

definite [illegible] to
this time the exhalations from
the body are extremely offensive
and [illegible] effluvia
in the sputum. [illegible]
patient has not been entirely
free from [illegible]. The
[illegible] state. The patient
in this stage is in an adynamic
typhoid condition. There is a
weak pulse. [illegible] they
hypostatic congestion,
tympanites, [illegible] tinnitus
aurium, subsultus tendinum
[illegible]. The
sphincter muscles may be relax-
-ed or paralyzed which is a

troublesome dyspepsia, bad
effects of Tea & Coffee must need
their sufferings at this period.
[illegible] complications
with this disease such as
Pneumonia, Pleurisy, Diarrhoea,
Cholera, Cholera, and Erysipelas.
Attacks of Ophthalmia often des-
troy the sight of one or both eyes.
When there is a predisposition to
boils or abscess it is apt to
be developed.

We often meet with cases of
Malignant Small-pox, which is
excessive prostration at the on-
set, and the symptoms
are extremely violent, such

cases are called Black Death
Et c. Typhus Fever.

= Anatomical Characters =

Hypostatic congestions are found upon the skin, mucous membrane, and in whole intestinal tract, the dura mater, membranes of the brain, & the inflammatory lesions, the internal parts of the bodies are frequently congested.

The blood when extracted during life contains an excess of fibrin and always has the buffy coat which indicates inflammation.

[illegible] Syphilitic Ulcers the [illegible] of Gilbert is diminished.

Cause

The cause of this disease undoubtedly depends upon a specific poison [illegible] is liable to be affected by its morbific influence, [illegible] the [illegible] of all ages, sex, and [illegible] in life, and [illegible] the fœtus in its maternal womb is not safe although the mother may not have the disease. Disease cannot [illegible] transmission in which the Mother

[illegible]
a few days, [illegible]
[illegible]
[illegible] explanation.
The poison may act through
the air as by opening the
prostate gland with the
instrument, either in the liquid
or solid form, or it may be
disseminated by means of
germs. A great deal of
discussion has taken place
in regard to the contagiousness of this disease, and at
what stage it is most safe to be contracted. We believe
it is more a settled opinion

that it can be taken at any time from the commencement of the initiatory fever until at least two or three days after death. The attack generally proves fatal the second day but some few cases are recorded in which patients were attacked a second, and even a third time, with a fatal result.

This disease generally occurs epidemically and when it makes its appearance in mid winter it is said to be more virulent than when it prevails in Summer.

= Diagnosis =

The initial stage with its accompanying symptoms present no difficulties in the way which this malady can be readily diagnosed particularly a very mild form, which may shortly remain its allotted time and quietly pass away without any perceptible eruption, or serious results arising therefrom.

The most skilled and experienced practitioners are liable to be deceived and often find it utterly impossible in the case of

this infection to distinguish it from other continued fevers.

If it is prevailing in the vicinity of the patient's place of abode, as it has been exposed directly or indirectly to the poison, the attending Physician can with a great degree of precision guess as to the exact nature of the complaint.

Well developed cases of typhoid fever have several peculiarities by which they are generally recognized. e.g. Severe lumbar pain, excess-

vive and intractable emesis.
The appearance of the eruption
about the third or fourth day
would not contain the des-
cribed of the attendants.
At which time there is a
subsidence of the febri-
lo-inflammatory. On is about
the 8th day of the disease
the growth of the vesicles
simples change to pustules
which are depressed in the
centre. At this stage of the
disease it would not require
to expect to distinguish it.
If the vesicle should take up a
contracted with the pustules.

But the fever of the latter is of short duration, and the eruption is not so prominent as the former.

Prognosis=

The result of distinct pox, is generally favorable, without the condition of the patient is bad, owing to an intemperate life, or if he has not been duly provided for following the rules of hygiene. The inflated mode of the mucous tissues of all cases demanded proper attention in every respect. It is a good sign to see the disease pursuing

its course without any serious inflammatory or malignant complications, but in all cases of confluent S. P. they should be looked upon and treated as dangerous.

The symptoms which particularly indicate an unfavourable result are the intolerable lumbar pains and a stubborn irritation of the stomach, accompanied by persistent vomiting, after the eruptive stage has passed; a rapid and simultaneous appearance of a great crop of boils about the second

day. In dangerous cases we also have delirium, stupor and in adults convulsions. A bad, a deadly sign of the fever, which shows a weakness of the circulatory system, is bulging red cheeks. Other symptoms are increased discharge of saliva. It is not unusual to have eczema. It attacks the face of the very young. When it is complicated with pleurisy, pneumonia, or other diseases of the respiratory organs the danger is increased. It is also unfavorable to the historic and anemic.

## Treatment

There is no particular course to follow in the treatment of this disease. It must vary to suit the constitution and condition of the patient and also the symptoms by which it is accompanied. It is very bad practice to treat a disease in a similar manner on account of its name, irrespective of the idiosyncrasies or condition of the individual affected with this or any other disease. We think the following five rules as laid down by Prof Hare are very important, and should be followed as

closely as circumstances will admit.

First — to moderate the amount of secretion without impairing the strength.

Second — to obviate in the stages the effects of inflammation.

Third — to suggest the system when required in the advanced stages.

The dietetic and hygienic rules should be in strency strict followed. Attention should also be paid to ventilation. Distinct smallpox the variety with which we have

generally to be found requires very little treatment; and if allowed to pursue its own course would terminate favorably in the majority of cases.

The patient when first seen if he has an overloaded stomach with a mixture of rich and stimulating food, the treatment may be advantageously commenced by an emetic, or Ipecacuanha or some other mild emetic which will not depress the system, and this is to be succeeded by a quick cathartic such as Rhubarb, sulphate of Magnesia or compound Cathartic

pill or if the will not answer
we may use Colocynth and Rhu-
-barb or compound extract of
colocynth. but if there is plen-
-tiful tension of the liver it
would be advisable to commence
with a mercurial, besides these
the effervescing draught or
the neutral mixture are highly
recommended if the liver
is sluggish effervescing saline bot-
-tles are very useful to the
patient, while the skin is hot
and dry — to the latter or these not
specific something be may use
Dilute Sulphuric, Prussic etc.
Black drop — Laudanum — Sweet-

Carbonic acid water, effervescing draught, with morphia.
To may also add to the opiate tinctures infusions; if these do not have the desired effect we may finally use an anodyne enema.

Bleeding should not be practised unless particularly called for by plethora, or inflammatory congestion of some vital organ. Blood may be withdrawn either by leeches, or cupping = the case of bronchitis, or where a vein should be opened, venesection, if without sensible relief may be obtained.

by the use of opiates, in form of Dover powder, or it may be combined with Calomel.

Of its Use and Abuse it is quite out of simulating to allay thirst and take powder be to Ipecacuanha as the most efficient. If the sudorific effect should it may be hastened by warm drinks, diaphoretics, as the warm bath. The treatment during the secondary fever corresponds with that of the inflammatory form. Quinia is highly spoken of as this period to combat with the inflammations, if not as tonic.

In the advanced stage when there is great prostration, and [illegible] it is necessary to use the stimulants, and [illegible] the best [illegible] are the sulphate of quinia, [illegible] acids, wine, [illegible] and the [illegible] infusion of [illegible] [illegible], [illegible] ammonia, ether, brandy and camphor are esteemed remedies. In malignant cases it is necessary to begin with the stimulating treatment.

The various complications which attend this disease must be treated on general principles. The patient should

[illegible] clean. The [illegible] powdered starch should be sprinkled over the body to absorb the pus which often oozes from the pustules.

Eclectic Treatment

To prevent deformity of the face by scars, and pits, various remedies have been tested to [illegible]. In this treatment our object is to prevent the atmospheric air coming in contact with the surface. The use of plaster is highly recommended, and is often combined with the adhesive, use bicarbonate of lime three parts, oxide of zinc one.

part combined with a sufficient quantity of the oil to form a proper consistence is an excellent application. The following plan is also commendable. Nitrate of silver one half drachm, water one ounce. Make a solution and insert a small portion of it into the pustules with a needle. Many others have been recommended such as the Ointment of Hydrargyri, Iodoform, and an [illegible] of [illegible] of [illegible]

Prophylactic.

The most and most the [illegible] preventive of Small Pox is Vaccination. It was discovered

[illegible]

The great importance of this subject (Vaccination) is so universally known, that any other remarks of ours are deemed superfluous.

[illegible]

[illegible] Trusting Public satisfaction has been given.

I am Respectfully

[illegible]

Yr Obt Servants

[illegible]

AN

# Inaugural Dissertation

ON

# Empiricism.

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Washington H. Bennett

of

Baltimore Maryland

Session 1865-66.

his judges than his friends; there's not a gent,
but will find something wanting in ill dress."

In discussing this subject, we intend to give an
[illegible] of the general history of [illegible]

The principles of [illegible] are established
on the early pages of the world's history.
[illegible] history of the science, in [illegible] not [illegible]
been confined to any particular class of
[illegible]; but at a later period we [illegible] with
[illegible] character and talents, we [illegible]
[illegible] from the records and [illegible] [illegible]
[illegible] medicine [illegible] science [illegible]
[illegible] was [illegible] and [illegible].
[illegible] general [illegible] of [illegible]
scientific point of view, and their [illegible]

edge was that founded upon observation and experience. The sick were exposed in the [illegible] places, that those who passed by, might give information of any remedy known to them to be possessed of healing properties. At the [illegible] Egyptians [illegible] [illegible], and the [illegible] this way were considered to be of the highest value. The Egyptian temples were selected as repositories for these records and to deposite the [illegible] [illegible].

Priests [illegible] [illegible] to be [illegible] with medicine, and when [illegible] of [illegible] [illegible] the blessings of the gods were invoked upon it. Religion was early connected with medicine, and many believed that disease was produced by [illegible] [illegible].

[illegible] was the first to deny this doctrine. He defined medicine from religion, and taught it a [illegible] science.

If we pass from Asia to Europe we have [illegible] Caused the downfall of the Roman empire, [illegible] time almost [illegible] [illegible] clergy, priests and monks took, [illegible] [illegible] science [illegible] almost [illegible]. The people had a [illegible] [illegible] [illegible] women as dressers of wounds and nurses, [illegible] [illegible].

In this period of desolation and decay, when

[illegible] but the clouds

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] though [illegible]

[illegible]

[illegible]

But later the mind of man began to assume its true dignity; education was advanced, and was displayed before the illuminating rays [illegible]

[illegible]

[illegible] Eleventh Century [illegible]

valuable facts to the science. Boerhaave, et al
[illegible] in the same century did sufficient
[illegible] down through the years of future generations. Later,
[illegible] and did much to influence the profession and
the public in favor of the study and [illegible]
the science being directed to the facts and [illegible]
[illegible] as practitioners. Now to the practitioner
[illegible] in observing [illegible]
of health and sickness, till now the present day
science to the [illegible] and [illegible]
[illegible] and hence for the relief of the relief of
suffering humanity.

As we stated before, the early practice of
medicine was principally directed by the [illegible]

[illegible] as follows: The empirics were a sect of [illegible]
[illegible] all theory. They were opposed to the dogmatists, and flourished till the time of Galen. [illegible]
[illegible] themselves with the theory, the performance of [illegible] cures, and in this way they [illegible]
[illegible] Yet they were [illegible] in theory of the sciences, and [illegible] to some extent all the present day, even among the most [illegible] and [illegible] theorizers. But to the most [illegible] in the practice, [illegible] from the [illegible] of [illegible]. But this was the time [illegible] being used in the same signification as [illegible] [illegible] signification, [illegible] perfect [illegible].

In discriminating between these [illegible] empirics, let us inquire what are the principles [illegible] correct practice of medicine and the [illegible]

[illegible] rule is drawn by him of remedies below. We [illegible] and understand what remedies to use in the treatment of disease.

[illegible] natural reasoning, we conclude that in all ages men have been engaged to believe [illegible] might be believed and disease removed; [illegible] accomplished this the most profitably, [illegible] the greatest amount of good, and received the greatest honors.

It has long been acknowledged that medicine is a demonstrative and positive science. It is [illegible] founded upon the immutable laws of [illegible] and all its curative processes and its [illegible] results must prove in perfect and beautiful harmony. The relations which between [illegible] and medicine [illegible] be [illegible].

[illegible] and promote [illegible] [illegible] on the other, must always have a natural relation between them. When [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] for its permanency; and it is upon these laws that all [illegible] [illegible] are founded; and the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] as they do to the Sun, Moon and Stars. That is by the Astronomer and philosopher. That [illegible], [illegible] [illegible] science ~~that~~ is based upon ~~these~~ [illegible] [illegible], and assists Nature to combat the "thousand ills of suffering humanity;" [illegible] [illegible] [illegible] [illegible] physicians [illegible] [illegible] [illegible], and [illegible] [illegible] [illegible] [illegible] [illegible] explanation.

It is [illegible] ~~that~~ this is an age of progress [illegible]. Admit that it is, but we must admit also

that [illegible] provinces as well as truth, and [illegible]

[illegible] to doubt the more proof, is as applicable at this time, as it has been at any other period [illegible]

[illegible]

[illegible] as it has been in the past. [illegible]

[illegible]

[illegible]

Doubtless a vast deal of malpractice at the [illegible] time, [illegible] owing to prejudice. How often do we see physicians [illegible]

[illegible] the amazing [illegible] nature in the case of [illegible]

[illegible] is the same disease in name and nature [illegible]
[illegible] same in nature or not but we'll [illegible]
[illegible]
[illegible] is that this class of routine practitioners have
[illegible] directed to the [illegible] of opti-
[illegible] system. Their [illegible] system [illegible] the
[illegible] of all [illegible] — the play of [illegible]
[illegible] for [illegible] they [illegible]
disease and of all diseases, and treat it in
the same way whenever and however they may
find it. It is strange [illegible] the [illegible]
[illegible] of their [illegible] they [illegible]
[illegible] the profession. They have
[illegible] and
[illegible] and fingers cannot see and hear and
feel. Their numerous cases add wonderfully

to their stock of experience in the treatment of the
particular disease just then in the ascendant in
[illegible] That they [illegible]
[illegible]
[illegible] physic [illegible]
[illegible]
or some complaints [illegible] applicable [illegible]
[illegible] to the same or similar disease. Routine
[illegible]
[illegible]
[illegible]
[illegible] receives the condemnation of having done
as much harm as he has done good, which
[illegible]
[illegible] the physician [illegible]
[illegible] does not intend to produce such dis-
[illegible] but is led by the promptings of a

[illegible] the diphtheritic film, and if so what then? He sees the patient, feels his pulse, examines his tongue, perhaps pronounces him dangerously ill. His condition of his case may or may not be so, but whether it is or is not, he proceeds to [illegible] — and that without reference to the condition of the patient — to [illegible] of Nature; in fact he scarcely considers anything but the [illegible] in his hand of the profession, and should be his guide and counselor. All being ready, with this he [illegible]. He [illegible] and [illegible] the tongue [illegible] [illegible] the patient till he [illegible] life fail and [illegible] [illegible], therefore gives Calomel, and why? Because he has learned to believe that Calomel and the Lancet

[illegible] "[illegible]," and he passes this into the digestive [illegible]

Perhaps his gums will bleed, and he [illegible] salivate and his teeth drop out, and [illegible] the [illegible]. But [illegible] he [illegible] the [illegible] introduce antimony because it is a [illegible] to his previous remedies. It is [illegible] a [illegible] [illegible] and [illegible] violent action of the heart and pulse which [illegible] [illegible], the pulse [illegible]

[illegible] nothing to eat [illegible]

of a crippled [illegible] kill time ere two [illegible].

[illegible]

[illegible]

[illegible] became the one plan of treatment to the

[illegible]

[illegible] sacrifices at the hands of such heroic med-

ical practice.

But on the other hand, [illegible]

[illegible]

[illegible]

[illegible] whether it is called for or not be-

[illegible]

[illegible]

[illegible]

[illegible] the case requires [illegible]

[illegible] the time and place, but is it always so?

[illegible] practice thus, seem to know but little of Nature

[illegible] their knowledge or skill. I hear such

[illegible] often do we see persons if they survive such cut

[illegible] disease is wrought to their members, we

[illegible]

"O, life! thou art a galling load,
A long, a rough, a weary road,
To wretches such as I."

[illegible] may Dr. Rush say that such medication

[illegible] disease, and increases its mortal-

[illegible] indiscriminate [illegible]

lectical, outrageous, monstrous jumble. "If it is not quackery, and that of the most innocent kind, then words have no meaning, and the English language fails to give it a name."

[illegible] the merits and demerits of the modes of treatment, there is much discussion at the present day. Those who adhere exclusively to either [illegible] opinions. On the [illegible] to be attained, and depending chiefly [illegible] the [illegible] of disease to be [illegible] and species stimulants [illegible] the [illegible] of the [illegible] is "incendiary treatment;" and if he [illegible] as a stimulant he says "it is probable that for [illegible] part, opium and its preparations have done seven times the injury that they have [illegible]

[illegible]

[illegible] is to see [illegible] "with [illegible] Devil," and that the mind of [illegible] [illegible] Double, loves more subjects by than [illegible]

[illegible]

[illegible] engaged in a professional warfare, each one [illegible] that his is [illegible] [illegible] that are wrong. Neither is correct at all times to the entire exclusion of the other.

[illegible]

[illegible] adopt exclusive views and theories. Otherwise [illegible] physician is "one idea man." The man with [illegible] mind drawn off by a particular set of [illegible]

[illegible]

[illegible] reading, and too often in his blind investigations [illegible] theme to color which is red. Our theories [illegible] strength is dependent "lens," and only those [illegible] thinness and so incorrect is his vision, that [illegible] "flickering shadows are real substances." The physician [illegible] "the type and matrix of error."

[illegible] source of hurt [illegible] in his practice of medicine.

Physicians are too apt to fall in with the chemical theory, however correct will apply [illegible] nor are all theories correct. We [illegible]

practitioners. This compliment seems to be due, but it
[illegible] to give any [illegible] to critical [illegible], and so-
[illegible]
[illegible] is true. The older physicians that [illegible] the
[illegible]
[illegible] it is at present day, [illegible]
[illegible] theorist, and only as much is he known to the
[illegible]
[illegible]
[illegible] correctness of his observations, and the success
[illegible] "
[illegible] which [illegible] provided. [illegible]
[illegible]
[illegible] than [illegible]
[illegible] Mayflower was still less [illegible]
[illegible]

[illegible] Brown was not

[illegible] nearly the same [illegible], as he mentioned

it to Sydenham. Brown is known only as a fine

[illegible], while Cullen never "allowed his speculations

to interfere with his observations in his accurate delineations of disease." It is said

that he, who is styled the father of phy-

[illegible]

[illegible] and the Dupes." He is said to be the

first who investigated medical science without

[illegible] prejudices depending upon

[illegible]; nor was it with him as was alleged, "that

an observation failed, reason turned traitor."

Yet it must be supposed that we are opposed

to theory altogether, for many times in advancing

[illegible] theory, errors in another have been exposed

[illegible]

[illegible] been acknowledged as being [illegible]
[illegible] in fine all the medical sciences are as well
[illegible] Dies must start upon the foundations of the
[illegible] science in [illegible].

Among the many theories in medicine,
[illegible]
[illegible]
his theory will stand among the other theories in
medicine, or even above them. But it is so far dis-
tant from all other theories advanced, even the
[illegible] principle of which has been [illegible]
[illegible] facts by our generalization of facts to medi-
[illegible] signs of "Hydrophobia" [illegible]
[illegible] is correct, then the records of past medi-
[illegible] observations are of no use except that facts
[illegible]
the doctrine of similia similibus curantur.

Other theorists, who "have received" have not
[illegible] all the lessons taught by others, but have so
[illegible] much to render their views and used them as
promulgating their theories. In other words they out
reconstructed them and with additional ones pro-
[illegible] [illegible] years. That the Homœopaths
[illegible] all the past experience of other [illegible]
Allopaths and Homœopaths [illegible]
ions." Nothing can be more conceited, nothing
[illegible] than the claims of this and
of "so-called" physicians. It is empirical; it is a
system of wholesale guessing.

In the first place [illegible]
and such [illegible] and [illegible]
only be productive of good when given in the infinite
[illegible] doses, [illegible]
that the smaller they are divided, in the same

[illegible] claims to be, indeed, the [illegible] theory, — that the pathology of most, if not all diseases [illegible] — [illegible] ies, are as absurd and ridiculous, as they are [illegible].

[illegible] Doctrine of [illegible] Curative [illegible] the [illegible] medicatrix naturæ, — the Conservative of nature and all other doctrines from the earliest history of medical Science down to the present time [illegible] be abandoned as chimerical and useless. The truth is, that while all other theories have added something more or less to the stock of medical Science, Homeopathy has added nothing. It is altogether irrelevant and erratic, and we have said before, that the sentimental adherence to [illegible]

[illegible]

[illegible] of the Homeopaths [illegible] being

[illegible]

[illegible] remarks upon this [illegible] our subject, we say that a knowledge of these doctrines in regard to the [illegible] is [illegible] specially [illegible] to [illegible] [illegible] [illegible].

[illegible]

[illegible] but we the ability to [illegible].

[illegible]

[illegible]

[illegible]

[illegible] by Known as Quack by thinking they advertisements in the

[illegible] of the day, and [illegible] [illegible]

[illegible] with the amount of money that they [illegible]

the science occupied in their returns, from the [illegible]

[illegible] of the practice of their art. They [illegible]

[illegible] of all the learned [illegible]

[illegible] of all the scientific and philosophic

[illegible] in Europe and America. They [illegible]

[illegible] of medicine [illegible] philosophy

[illegible] the [illegible] of Europe [illegible] the [illegible]

[illegible] of physics [illegible] physics. [illegible]

[illegible] physics [illegible] for the [illegible]

[illegible] physics [illegible]. [illegible]

[illegible] the [illegible], [illegible]

[illegible] the [illegible], [illegible]

[illegible] the [illegible], [illegible]

[illegible] the [illegible], [illegible]

[illegible] an inverted [illegible] milk to the raising of the dead.

[illegible]

[illegible] and the [illegible] seem to be as [illegible]

these [illegible] friendness. They submit to their [illegible]

incantations, allow them to [illegible] their [illegible]

[illegible]

[illegible] the Creator [illegible] the nature of,

[illegible]

[illegible]

[illegible]. How great is their faith! "If ye have

faith [illegible]

that mountain be ye removed" [illegible] and it is done.

"All things are possible to him that believeth."

[illegible]

faith becomes weak or falls there totally, and we

[illegible]

[illegible] the old [illegible] and [illegible] claim with [illegible]

[illegible]

[illegible] is due to [illegible] in any branch of the profession, but the people ought to know that because a man announces his intention [illegible] to the treatment of some special disease or disease, it is [illegible] that he will succeed successfully. But when they employ such [illegible], what can we say or do? All we can do is [illegible] the [illegible] people [illegible] etc.

The last we shall notice is patented goods. This seems to be the ruling element at the present day, and nowhere is it more fully so than in medicine. Many persons take medicine

because it's positively not true,

other. "This is an age of wonders." These, they

discovery cease to bless the world;

and now they are as innumerable, numerous as

the sand upon the sea shore." And so extra-

vagantly is the public mind carried away, with the

and; and swallowed down on the other, such

effects certified to in all the almanacs and

[illegible] in spreading patent [illegible]

[illegible] they are quacks, self and [illegible] by

physicians, and this is taken as well

[illegible]

[illegible] the "regular faculty."

[illegible]

[illegible] and recommend patent medicine for a [illegible]

[illegible]

[illegible] would [illegible] it under all conditions of the system. No medicine

[illegible]

[illegible]

hundred other remedies all different in their x-
ist and nature, and requiring different plans of
treatment. In many cases where these remedies
are so indiscriminately used, they must prove a
positive, lasting injury.

But what is worse still, these physicians use
[illegible]
to divulge to some members of the profession, but keep
them a secret from the public. Why [illegible]
[illegible] not [illegible] in the [illegible]
[illegible] [illegible] "Bah, [illegible]
[illegible] physicians, but cheats the quack half as the
public."

[illegible]
of medication should be practiced, whatever
popular opinion may be in its favor at times,
[illegible] called for by nature, & nature should

[illegible] the results and it would be [illegible] as it

[illegible] good results, and should the Deity [illegible]

[illegible] has a double work to perform, — to remove the disease

& the evil effects of the remedies. — It has [illegible]

[illegible] ? [illegible]

[illegible]

[illegible]

[illegible] our original condition to depurate and purify our vital energy," and not to administer medicines contrary to her demands, thereby creating terrible disorder in the system. We believe in the Hippocratean idea of "Natura duce." We are European dreamers when we say that Nature is our teacher; she is the great physician; she stands [illegible] the [illegible] physicians.

[illegible] the hands of the physician is a sacred one; it in-

[illegible]

[illegible] Careful we should be to preserve our dignity

[illegible]

[illegible] of office. We made us to bless each other;

[illegible] blessed by those who put their most sacred trust

[illegible] our hands. "And what shall be our reward? a

[illegible] conscience, heaven's earthly seal." So we have a

[illegible] sacred of having done our duty is a price

[illegible] gold and silver, or the honors of the world.

[illegible]

[illegible] and after our labors are ended to bless million

[illegible]

AN

# Inaugural Dissertation

ON

# Chloroform

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Benjamin G. Franklin

of

Carroll Co. Maryland

Session Fifty-ninth 1866

# Chloroformum

Chloroform $C_2HCl_3$

The great aim of medical Science, is the alleviation of human suffering, and that may be considered as a boon, which will in any manner contribute to so useful and desirable a result. The formidable effects which so often follow surgical and obstetric operations, rendered an equal a desideratum, which by making these patients insensible to pain, would prevent them.

The discovery of Ether. $C_4H_5O$ = 37 subsided to the profession its vacancy

in the pharmacopia of medicine, its use however was attended with some disadvantage, being unpleasant to inhale and in some instances producing a spasmodic cough, which detracted from its mildness, and led to a search for another agent which was soon furnished by Chloroform. Soon after the introduction of Ether in this country, Chloroform was discovered by "Guthrie" in the U. States, "Soubeiran" in France, and Liebig in Germany in the year 1831, but its nature chemically was not understood nor fully developed until revealed by "Dumas" in 1834, by him it was ascertained to consist-

of three equivalents of bromine $Br_3$ with one equivalent of a Bicarburet of Hydrogen and Ethyle $C_2H_4$ and is therefore the tri-bromide of ethyl. It is prepared by distilling bromine, chloroform, alcohol and water, two liquids are collected in the receiver the heavier of which is bromoform, as thus obtained it is in an impure state, and must be treated or washed with water to remove alcohol, solution carbonate of soda to remove bromine, and lastly with dry chloride of calcium to separate the water, and finally to redistillation, the product now received is pure; it is a remarkable circumstance probably deserving

notice or entire mention, and many of our most valuable remedies are those in which Bromine is largely at a constituent.

Chloroform is a colourless liquid of a pleasant odour, and to allow the expression, fragrant and refreshing, [illegible] so [illegible] at a [illegible] taste. It is very volatile, its boiling point is 142° F. and its specific gravity 1-49 is but slightly soluble in water, requiring 2000 parts of that liquid, though quite readily dissolved by Alcohol and Ether. Its solvent powers are great dissolving even gutta percha and Caoutchouc, it also yields

a larger number of deaths than any other liquid of an equivalent measure or bulk; the credit of introducing Chloroform into use as a medical agent belongs to Sir. Simpson of Edinburgh, he first administered it by inhalation to alleviate the throes of parturient women with such success that he wrote a pamphlet recommending it in exalted terms to the Profession, after a short space of time it became in use over the whole civilized world and has become a very important auxiliary to medical science.

This being coming gradually still more into general use, it is important that we should endeavor to obtain

most idealistic, are views of its physiological effects are transitory affections, I am unable to infer anything that no doubt has not already been known and here, it may serve as a criterion of my attainments as well as to inquire that which in the multiplicity of other information and knowledge may have been and might be completely lost.

The indications for the use of Chloroform are, 1st to relieve and prevent pain, 2d to relax spasm, 3rd to promote sleep, and 4th to calm nervous irritation.

The contra-indications are 1st in debilitating and disorganizing diseases of the brain, such as the advanced

stages of mammalia exhibits, clonic convulsions, tremors &c. 2d debilitated states of the heart as dilatation, dilatation disease, fatty degeneration of the organ, and feeble action. 3rd constitutional tendency to syncope, 4th the evidence of intoxication at the time, and 5th general debility from any cause, besides in cases of existing or threatened congestion in the lungs, brain, or any of the great viscera.

Chloroform is administered in three modes, by inhalation, by the stomach, and the rectum; the mode of inhalation is very important since many of the fatal results have been, and are no

doubt attributable to its mere application, in this respect the great effects which should arise are that sufficient almost [illegible] must be admitted to support respiration, numerous instruments have been invented and recommended for facilitating inspiration, but among them all the safest and most efficacious manner seems to be that in which it is performed by forming a bag or handkerchief shaped of a funnel form and applied over the mouth and nose; the philosophy of this drawn from the well known fact that a certain quantity of oxygen is required to maintain animal life, if it be

totally or nearly cut off by Chloroform, life is as effectually destroyed as if some substance had been [illegible] and; when the vapor of Chloroform is inhaled in any manner it proves slightly irritant to the bronchial tubes, this is manifest by the patients repugnance which is so great in some instances as to almost preclude its employment; when its effects begin to be manifest the following phenomena is observable, 1st, the respiration becomes hurried, noise and ringing of a vibratory character in the head.
2d, anasthetic action, 3rd that of profound narcotism and muscular relaxation.

Chloroform affects the nervous system through the medium of blood. It is known to affect the cerebrum, cerebellum, the spinal cord, and the medulla-oblongata, if, latter be too profoundly impressed, life will be extinguished; there is generally some struggling and stupor before the patient becomes fully under its influence, these at length give way, deep insensibility succeeds, and the patient is totally unconscious of external impressions; this is the period in which surgical operations are usually performed, though sensibility to pain is nearly lost before consciousness is diminished. Its inhalation fulfils ~~two~~

[illegible] indications, and [illegible]
antispasmodic are available;
there is some diversity of opinion
whether it be safer to stimulate
at once by an animal Tonic,
in latter like the stomach, the
first marked effects are warmth
and stimulation, in large doses
nausea, vertigo, and a poison;
by inhalation the stage of excitement
are similar to Ether, only more
rapid, the pulse is affected in the
following manner, 1st minute of
administration the pulse is increased
second minute, increasing. third
minute decreasing fourth minute
below normal.

The advantages of Ether consists in its being a little quicker, more pleasant to inhale, a smaller quantity necessary for the same result, and more certain in its action, and the only thing which has detracted from its merits, is, that it cannot be carried so far as the medical and death will result from asphyxia with general venous congestion, especially of the lungs, such appears to be the regular successive stages in the action of Chloroform, but sometimes however this regularity is interrupted, and the influence of the poison extends to the nervous centres, especially those of the

becomes a poison

heart is suddenly paralyzed by the cardiac lesion, and sudden death occurs with pallor of the lips, and pulses, and a blanched countenance; in such cases death ensues almost immediately from the heart's action ceasing and the patient dies of syncope.

Chloroform is largely used as an anodyne in obstetrical practice to relieve the excessive pain with which some patients women are affected; Chloroform has completely revolutionized obstetric operations; the various operations which were before its introduction considered so dangerous have been rendered

confined in so narrow, the
real difficulty in rigidity was
the pain attending contractions
of the uterus, but chloroform by
suspending these, removes the
greatest obstruction, it relieves the
pains without the prevention of
contractions, but on the other hand
rather promotes them, it has been
used with the greatest success in
puerperal convulsions, and in
the cure and prevention of eclampsia,
given frequently it will often prevent
the occurrence, and may be given
in nearly all cases where there
is much pain without much
risk, if past experience serves

a present generation; the cæsarean section which was so terrible from the resulting shock has been made by the admirable agency of this remedy, it is used to cause irregular or hour glass contractions of the uterus, to dilate an indurated os uteri, to soften the rigid soft parts in convulsions, occurring in weak and irritable habits, and finally to prevent the nervous shock to those frail and delicate constitutions which would sink beneath it; if this were all it were capable of accomplishing and its uses had extended no further, we would

say in extenuation that an immense boon has been conferred upon the human family by its discovery, this however is but a little in the vast domain of surgery, it is productive of its greatest good; in surgical operations it is used as an anæsthetic for the prevention of pain, and as an anodyne to the nervous system, inhaled to diminish sensibility and prevent the nervous shock of formidable operations, but should never be used in bloody operations about the mouth or throat, as the patient could make no effort to expel the blood, it would recede into the pharynx and then suffocate.

The beating, tends to produce death, it has proved of considerable service in the reduction of dislocations, by relaxing the muscles, as also to relieve the pain and accumulating pain attendant upon the passage of urinary and biliary calculi. Opinion is divided, hydrophobia and tetanus, both traumatic and idiopathic; the only well authenticated cases of recovery from tetanus are those in which the spasms ceased, in hernia, protrusions it has been used with good effect to relax the muscles and thereby make them more easy of reduction: in medical practice its principle use is as an antispasmodic in the

various spasmodic diseases, such as spasmodic asthma, laryngismus stridulus, dislocutio tremens, whooping cough, epilepsy, puerperal convulsions, and might be used in spasmodic croup, by some recommended in hysteria, and in intestinal spasm. It will often cut short the paroxysm when other means are unavailing; in neuralgic headache, and, it is more speedy, and more more efficacious for the time, merely as a palliative, but has no control over the condition from which the disease originates, by some it has been lauded in pneumonia, though rarely if ever used in this country, it has

been employed with chiefly in painful inflammatory affections, such as rheumatism, gout, fibrous tumours, scrofulous testicles, inflamed glands and also in injuries, as sprains bruises &c. of course allowance must be made for all the opposition that it be the remedy.

The mode of administering Chloroform by inhalation has already been noticed, the quantity employed is from ℥i to ℥ij poured upon the inhaler, then applied over the mouth and nose, and may be repeated in a few minutes if no effect is produced, if we do not wish to produce.

conditions we may lessen the quantity and loss of the alcohol, and thus have the same effect, it should never be used shortly after partaking of food, should remove all constrictions from the neck and waist; but when given in obstetric practice, if the uterus be enfeebled from any cause, the inhalation should not be carried too far, fifteen to twenty minims will usually suffice, the dose for internal administration is from forty to sixty drops, which may be repeated every half hour or less, and gradually increased if found necessary until the desired effects are produced, best given by emulsion.

or dissolved in blood, in the proportion of [illegible] of blood. by Cocoa, from [illegible] to [illegible] may be administered.

The antidotes for Chloroform are limited to [illegible] antidote and poisoning by inhalation the lungs are shown should be evacuated, then given [illegible] to the action of the system by [illegible] and artificial respiration, and application of Oil of Cocoa, Symptoms and Results to the digestive if the stomach be in [illegible], if [illegible] fails it should be supported by the use of the [illegible] method.

Poisoning by Inhalation is so rapid in its actions, that but little time is afforded for the application of the remedies; the use of cold water dashed on the face and neck, a sniff of fresh air, Carbonate of Ammonia, Compound Spirit of Ammonia, should be administered to arouse the sensibility of the nervous centres, if there be a tendency to syncope, it should be counteracted by laying the body in a horizontal position; bleeding is seldom indicated, and should be resorted to, to excite the lungs and heart.

AN

# Inaugural Dissertation

ON

## Simple Acute Pneumonia

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

**UNIVERSITY OF MARYLAND,**

FOR THE DEGREE OF

## Doctor of Medicine,

by

Richard J. Duckett

of

Hagerstown, Maryland

Session Fifty Eighth 18 66

The disease I humbly submit to your perusal, is Simple Acute Pneumonia. One which in former days was looked upon, both by the patient & physician with dread, but now owing to the advanced state of Pathology, has lost much of its terror.

Symptoms:- The disease is most commonly ushered in by general febrile disturbance. At about the end of the third or fourth day rigors occur, which are soon followed by nausea, cough, pain in the side, generally the left, difficulty of breathing, respiration hurried, about 30 per minute, pulse quick, 144 sometimes as high as 160 per minute,

Skin hot and dry, great thirst, loss of appetite, prostration and headache. And sometimes, but rarely, [illegible] delirium. These are the general symptoms.

Stages. Pneumonia is divided into three stages, viz. First, the stage of engorgement. Second, the Red hepatization, or as some authors call it splenization. Thirdly, that of Gray hepatization, or purulent infiltration.

In the first stage or that of engorgement, the substance of the lung is gorged, with blood or bloody serum. Its color internally is dark, and crepitates less under pressure than the

lung does in its normal condition.
It is heavier than natural, and inelastic.
and if pressure be made upon the lung
with the finger, it will retain in some
degree the impression. If an incision
be made into the substance of the lung,
a quantity of red-frothy serum exudes.
Its cohesion is diminished; it is more easily
torn; and resembles to a certain extent
the spleen; and accordingly the term
Splenization of the lung has been
given to this stage of the inflammation.
In this stage of engorgement, the
mucous membrane of the minute bron
chial tubes, is of a deep red color.
Although the engorged portion has its
specific gravity increased, yet it will
float upon water.

If the inflammatio proceed, it passes on to the second stage, or that of hepatization; the characteristic points of which are as follows, it depletes no longer under pressure, the continuation of its red color, both externally and within; if now placed in water it sinks, the air vesicles being no longer capable of holding air. If it be now cut, it presents sometimes a uniform red color, or it may be slightly mottled, produced by intermixture of specks of black matter of the lungs and of areolar tissue between the lobules, which has a less red color, and more obvious to the eye.
The spongy character of the lung is entirely destroyed, and evidently solid.

and if an incision be made into it in this stage, the cut surface resembles the texture of the liver, hence the terms red hepatization. If pressure be made upon the lung, it still exudes some red fluid, but it is much less in quantity than in the first stage, and it does not present that [illegible] appearance. If you scrape the cut surface with a scalpel, you may often perceive in the red fluid thus collected, some traces of a thicker and yellower matter, the first indication of commencing suppuration. The hepatization is denser and more solid than before, but it is also more friable; more easily crushed and broken. On examining a portion

of the lung with the microscope, the pul-
monary tissue will appear to be compose-
ed of a numerous amount of red gran-
ulations lying close to each other. These
Dr Watson considers the air vesicles clogged
up, thickened, and made red by inflamma-
tion.

The lung now contains no air, and if
the thorax be open, it will not sink down,
and will therefore appear to be increased
in bulk. It is swelled in fact, just
as any other inflamed parts are swelled
by congestion of its vessels, by effusion of
serum or blood into its hollow tissues.
The marks of the ribs are frequen-
tly seen on the inflamed surface.
The texture of the lung in this condition

is oftentimes very soft. So much so that a moderate pressure will be sufficient to reduce it to a complete pulp. In a certain portion, the tissue is condensed, solid. And imperceptibly in the last stage, it undergoes a change of color: it presents a yellow reddish hue, and sometimes mixed with red, or with black pulmonary matter. The granulations which were spoken of in the previous stage, as red particles, now become changed to a white or gray color, and the lung texture is still more rotten and friable than before. It is filled with a puriform matter, which is sometimes in such great abundance that it oozes out plentifully when an incision is made into its substance

or it may be made to exude by pressure. The gray pus shows itself upon the cut surface, in the form of minute drops. The larger the amount of this fluid contained in the lung, the softer and more friable it becomes.

When crushed between the fingers it is reduced to a yellowish gray pulp, exactly like the fluid itself, only rather more consistent. Or by forcing the finger into any part of the lung in this state, cavities are formed, which soon fill up with pus. And which might be taken for a recently formed abscess. This is what is called by Lannec gray hepatization or pseudo infiltration.

Diagnostic value of the Sputa in Pneumonia.
The Sputa is considered by all a very important symptom, and by some it is looked upon as one of the principal diagnostic signs.

At first makes its appearance about the second day after the attack. If collected and examined, it will be found to be extremely tenacious, and adhering to the sides of the vessel in which it has been placed. The color at first is rusty, with minute air bubbles contained in it. After a few days, it often assumes a yellowish hue, and finally, sometimes a greenish aspect. The yellowish tint is due to the admixture of a very small proportion of blood, less than that which produces the rusty-

appearance. Sometimes the rusty and yellowish sputa is abundant, and constitutes the mass of the expectoration. At other times, the secretion is bronchial mucus, with a few specks of the rusty expectoration. Or again, the rusty expectoration may be entirely absent. The origin of this peculiar substance is said to be the air cells.

It seldom continues after the seventh or eighth day from the attack, when it is succeeded by a viscid, and opaque bronchial mucus. In some cases (though they are rare) we have an expectoration towards the close of the disease of a thin diffluent, reddish fluid, resembling the juice of Prunes. This is usually a fatal sign, and generally found connected with

the third or suppurative stage.
In some cases the sputa may be entirely absent.

## Physical Signs.

Auscultation and Percussion, are of the greatest importance in this disease. they unveal facts. without which, we would be like the mariner cast upon the broad ocean of waters, without his compass.
On applying your ear to the chest. the first sound that reaches it. in the first stage, is fine crepitation or vesicular rhonchus. furnishing to the ear, the sensation of a fine or dry crepitation; if the inflammation continue, the crackling becomes more and more distinct, and at length covers the normal vesicular murmur entirely

But if on the other hand the crackling ceases, and is followed by the natural vesicular murmur, it is an evidence that the inflammation is subsiding, and that the "materias morbi" is being taken up by the blood and being eliminated from the system.

But again the crackling subsides entirely, and we have no return of the vesicular murmur, then we must look for the appearance of the Second Stage.

Before we go any further, let us look into the cause and seat of the vesicular bronchus.

The seat, says Dr. Watson, is in the small ramifications of the bronchi, and air vesicles themselves. And the common cause, and the one adopted

by him, is the result of the passage of air through liquids from the formation and bursting in quick succession of a multitude of minute air bubbles. We come now to speak of the next stage.

Instead of having the crackling sounds heard in the last stage. We now reach our ear bronchial breathing. At the same time, and almost simultaneous with the other. Another auscultatory phenomena: bronchial voice or bronchophony. The first sound is caused by the passage of air through the bronchial tubes. Which in the normal state produces no sound, owing to the spongy texture of the lung, in which vesicular manner covering it. but in the lung being condensed, it is a.

better conductor of sound. The cause of bronchophony is the sound of the voice in the bronchial tubes, which in the normal condition is not heard, owing to the same cause given before for the first sound, viz. the addition of the bronchial tubes being solid.

If the inflammation continue to the last stage. Auscultation reveals no morbid sounds, except when the lung texture breaks down, and a portion is expectorated, then air finding its way into the vacant spot, may give rise to large gurgling crepitations.

Percussion.

In the first stage of the disease sound slightly modified by percussion. If it proceeds to the second, we have dullness on percussion over the part affected. When the inflammation continues

to the third there is no alteration of sound remaining as it was in the second

Causes. Vicissitudes of weather (exposure to Wet, Cold, &c) it not being necessary to dwell upon them. As they do not influence the diagnosis.

Diagnosis. The diagnosis is derived from the rational symptoms and physical signs, Absence of Chloride of Sodium in the Urine. The absence of the Chloride in the Urine is more apt to take place during the stage of red-hepatization, when it is found in the sputum, Dr Bennett places great confidence in it as a diagnostic sign. Simon and Rechenberg (Sup. to Bennett) were the first to state that the absence from the Urine of the Chlo Sodium was of great value in diagnosing Pneumonia and returning to it. When reabsorption of the

exudation was about to commence. And this was confirmed by other Authors. He concluded a test which was done in thirteen cases, all of which showed evidence of the absence of the chloride of Sodium except one. And from these he drew his conclusions of its great value.
The test being, first acidulate the Urine with Nitric Acid, then add Nitrate of Silver, when if it be present there a white cloud will be thrown down, this is the insoluble chloride of Silver.

## Prognosis.

There are certain conditions which influence the prognosis in this disease. The principal ones are — first, the age of the patient; second, the extent of the disease; third, the patients general constitutional condition

There are two periods in life in which pneumonia is very fatal, these are from early infancy to the age of five years; and the advanced periods, from seventy years and upwards.

The great fatality to young children is owing to the feeble powers of vital resistance, and by the fact, at this age it is seldom uncomplicated.

The statistics taken from the French, by Dr Todd, shows less chance between the ages of fifteen and thirty, than at any other period.

If then your patient be between these ages, and the amount of lung involved be not considerable; the chances of recovery, is good. but if the [illegible] lung be-

inflamed, or the half of both lungs, then you must look forward to a bad termination of the disease; While if the disease affect only the half of one lung, or only a third, or little less, you must take a more favorable view, and give a more favorable prognosis. Which will also depend upon the constitutional powers of the patient. Dr Todd

Pathology.

The one most generally received by the profession, is that given by Dr. Bennett of Edinburgh. Which is as follows.-

"The exudation is infiltrated into the air vesicles and minute bronchial tubes, and between the fibers, blood vessels and nerves, of the parenchyma, imprisoning the whole in a soft mass which coagulates and

renders the spongy texture of the lung more dense and heavy, or what is called hepatization. This accomplished, no air can enter, the nerves are compressed, the circulation is retarded; and the object of nature is to convert this solid exudation once more into a fluid whereby it can be partially evacuated from the bronchi, but principally reabsorbed into the blood, and excreted from the economy. This is accomplished by cell growth. In the amorphous coagulated exudation, granules are formed; around groups of these, cell walls are produced, and gradually the solid amorphous mass is converted into a fluid with cells. This is pus. The cells, after passing through their natural life, die and break

down, and the secretion is again reduced to a condition susceptible of absorption through the vascular walls, and once more mingle with the blood, but altered chemically.

In the blood the secretion nourishing undergoes further chemical metamorphosis, whereby according to Liebig, is converted into the different salts, which are removed from the system by the different emunctories."

Treatment

Their being such a wide division among the medical men of the present day, as regards the treatment of pneumonia that I shall content myself by giving the principal ones, beginning with Dr Watson

The first rule he lays down is, "Never treat names, but the symptoms as they arise. Constitutional symptoms must direct the treatment. While the local symptoms identify the disease." In a patient previously strong and healthy, if you have high fever, hot and dry skin, a hard and full pulse, pain in the chest and difficulty of breathing, especially if these symptoms are met with in the early part of the disease, then bleed your patient, not only as I believe without harming him, but to his great benefit and safety, and the bleeding should be carried to that point when if you have a hard pulse, it becomes soft; or if [illegible], it becomes fuller, until the sensation & constriction is abated, and dyspnoea is relieved; or—

until syncope appears to be at hand.
In less severe cases, he advises abstraction of blood by cupping applied to the chest.
In the second stage, he does not think that bleeding can be of great benefit, but still think it should be resorted to moderately, to relieve the dyspnoea, and diminish the action of the heart and arteries, and to prevent the extension of the inflammatory processes; by lessening the quantity of blood circulating through those portions of lung still pervious, and thus relieve dyspnoea: and by putting the system at large into the most favorable condition for the reabsorption of lymph, by which the airtubes and vesicles are blocked up.
But when the time arrives when bleeding is no longer admissible, which is characteristic

by great depression of the patients strength and incapacitating him for expectorating the inflammation remains. When this takes place, he recommends the use of Tartarized Antimony and Mercury, for the purpose of aiding the blood letting, or to be employed alone, when blood letting is not expedient. He considers Tartarized antimony best suited for the first stage, and Mercury for the second. In the use of tartarized Antimony, he speaks very highly of the plan of administration used by Dr Thomas Davis. "After the usual detr. bleeding, begin with ℥ss of a grain of tartar emetic in a half wine glassful of water with a few drops of laudanum or syrup of poppies, the dose of this strength at the intervals of one hour from each other,

If the patient can not vomit, omit the Opium, but continue it if he does, doubling the quantity of tartar emetic to 1/3 of a grain for two successive hours, in this way adding every two hours a third of a grain, until it be reached two grains hourly. When the Hydrocephalus has subsided, omit the antimony, but if the inflammation, shown by signs, is not yet to be extinguished, it must be again given.
When the inflammation reaches the second stage Mercury must be used. The object in giving it is to make the gums tender, so soon as possible. It must be given in small doses frequently repeated, a grain every hour, or two grains every hour, combined with Opium, to prevent it running off by the bowels. If the bowels are irritable use the use of Calomel & Blue Pill

may be substituted. This medicine is given to arrest the effusion of lymph.
After the inflamed lung has become solid, the treatment must still be regulated by the system at large.

If the pulse continues steady and strong, wait the effects of mercury. But if the features become sordid, pallid face, surface cold, tendency to delirium, feeble or irregular pulse, it will be requisite to administer stimulants, Carb. Ammonia, Wine or a Decoction, the patient rich Milk or Beef-tea

When the fever is high the skin not hot, the expectoration difficult, the dyspnoea [illegible], sensation of pain or tightness, or oppression

experienced in the chest, he then recommends that the chest should be covered with a plaster.

At the onset, he advises an active aperient, and afterwards to take care that the bowels be unloaded at least twice a day. This is a general summary of Dr. Malcom's treatment, which I have put down.

Dr O'Donnell

He states that you must direct the treatment to "further the natural progress of the disease" Never attempt to cut the disease shorter weaken the vital powers or pulse, but on the contrary further the necessary changes & exudation must undergo in order to "fully secrete from the economy,

To this end, during the period of febrile excitement, he contents himself with giving Salines in small doses, with a view of the washing the necessity of the blood, when a full pulse becomes soft, he orders good beef tea and nutritious food. Their be restricted in order, from six to eight ounces of wine daily. At the period of crisis approaches, he gives [illegible], generally consisting of half drachm of Sulphuric Ether, sometimes combined with the mixture of Chlorine wine, three times daily, to favor the excretion of Urates, & Salts in Crisis occurs, by sweat or stool, he says he takes care not to disturb or check it in any way. He says blood letting may be used as a palliative.

For instance, if from twelve ounces of blood be taken from a strong vigorous individual, during the first two or three days of the disease, it frequently for a time diminishes dyspnœa, and other local symptoms, by relieving the congestement of the right cavities of the heart. But if pneumonia really exists, that is if inflammation has occurred, we have no proof whatever, that the disease has ever been shortened or otherwise permanently benefited by the practice. We believe that a few ounces taken from the arm of a vigorous patient, may do a great amount of good.

Dr Todd's Treatment.

The principle adopted by this practitioner is to assist nature in getting rid of those materials, the retention of which in the system appears to produce the disease. This may be done by promoting the secretions of the skin and kidneys; by attention to the digestive organs and bowels.

He advises free ventilation, and to use mild aperients. Finally, the patient should have liberal, but well regulated admission of good nutritious food.

He says, if you take blood at all, it is necessary with the view to relieve pain, and for this purpose a few leeches applied over the region of pain. But when

Congestion is great, it is sometimes
expedient to take blood from the arm.

AN

# Inaugural Dissertation

ON

Epidemic Cholera

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Andrew B. Mitchell

of

Maryland

Session 1866

to be able to throw any new light upon any of the subjects found it; the [illegible] of the lamps of experience is denied to him, and though not entirely in the dark, yet he must work by light, borrowed from the lamps of others, and any new thing thrown found must in a measure be due to that borrowed light.

It is with this knowledge, that I have chosen for my subject, one, that is at present, occupying the

minds of both professional and unprofessional men. Would that it might be mine, to throw some new light upon this disease, and in a measure afford safety and relief to so many brethren; But its nature and cure have baffled the sagacity of the most learned to be found in the ranks of the Medical Profession, and the writer must content himself, for a while at least, with the knowledge of it, and hope and strive by that-

minds of both professional and unprofessional men. Would that it be in my power, to throw some new light upon this disease, and in a measure afford safety and relief to suffering humanity; But its nature and cure have baffled the efforts of the most learned to be found in the ranks of the Medical Profession, and the novice must content himself, for a while at least, with the knowledge, only, and hope and advice, by that-

knowledge, to mitigate the horror and [illegible] the misery and pain caused by Epidemic Cholera.

If I have succeeded in gaining that knowledge so as to use it for the benefit of others, my efforts here will not have been in vain

# Epidemic Cholera.

## History.

Cholera had long been known in India, its birthplace, for ever it had spread, increased, wielded its terrible sceptre, and swept its population away by thousands. But it was not until the year eight hundred and seventeen, when first it began its onward march, so fraught with suffering and death, that it, in any degree, attracted the attention of the Medical Profession; when however

pity and anguish of suffering millions called for aid, then Science, ever ready to succor those who stood in need of her services, took a willing hand to assist and relieve; since that time medical minds have sought, and are still seeking to find out its cause, and the best means for its relief.
Perhaps there is no disease more terrible, and in its worst form, more quickly, or more surely fatal, than cholera. From Bengal,

its course was marked by devastation and by death; wherever it went, it at once arrested all business save that of the undertaker and grave-digger; it threw its shadowing wall over populous and prosperous cities, and changed the busy hum of life, to the silence of the grave. Governed by no known laws, its march was irregular, at times travelling with great rapidity, at others, with a slow, halting gait, as if uncertain of its

course, or when to fix; nothing seems to have power to check, or turn its course; its tide dashed to all barriers, whether natural or artificial, is not turned in her way by seasons or temperatures, but "rushes" hot or cold, moist or dry," it sweeps its path at will; her adverse winds, her lofty mountains, her boundless seas" [illegible] any resistance but [illegible] and [illegible] time all it goes, sweeping clean and [illegible] on [illegible] side. It appears to [illegible] the [illegible] greatness, but does

not confine itself to them,
it appears in other rare
and nasty places, but
does not slight the lowest
situations; it [illegible] in pits,
and does upon the
heaviest cumbrings of the gun,
and adds to their weatheredness. its own tissue wool:
it appears to have periods of
activity and of rest; one
moment peacefully busy, the
next, as if [illegible] into
the abyss of [illegible].
Its period of duration in
any locality varies, now, as
in its other conditions, it

following no laws, comes un-
-welcomely, goes, we know not
why: according to most observers,
it avoids [illegible] [illegible]
two to three months. Age
does not affend to safety,
it attacks alike the strong
man, the weak woman,
and the tender babe; no
class is so [illegible] with its vicin
poor, high or low, all are
equally liable to be numbered
among its victims, and all
strive, should bend their
aid in tracing to [illegible] to
prevent it. If possible, its
victim, in to mask its visit,

should it come, be dangerous.

Cause.

As yet we know of cholera, nothing is positively known; theories without number have been started as to its origin, but as yet nothing has been proved. Some have attributed it to the influence of the sun, to the appearance of comets, the presence of some peculiar or foreign element in the air, electrical state of the atmosphere, and to animal-cular origin, but all have proved chemically

analysis has not proved any new element, we have an incalculable [illegible] of [illegible], and we are forced to acknowledge our ignorance. Of the exciting and predisposing causes we are not better informed. Jameson in his work on Cholera says that it is sometimes epidemic, sometimes endemic, and sometimes sporadic, but it is always non-migratory, and bred in the place in which it may appear, that it is essentially an atmospheric disease. How can we conceive, say he, of a

laboratory which shall generate a poison in India, or the more distant parts of Europe, sufficient to be carried by the winds over intermediate countries, and over the broad Atlantic? Now then, if it is non-migratory, is this disease propagated? is a question that will not fail to interest all, a question as yet, in reality, incapable of being positively answered. Is it contagious or is it endemic? On two medical men differ widely. Many think that it is portable, that it can be

carried by individuals from one place to another, and have brought a large amount of evidence to prove this position; and, as being the disease, as it has been known, through the public journals, to possess totally its portability, and its propagation by contagion, the journey of the pilgrims from Mecca was marked by the disease, their arrival at a place was the signal for its outbreak, their arrival, and its outbreak, could not have

been in all cases mere coincidences. Others, on the contrary deny that it is contagious. Mr. Hood asks "if it be propagated by contagion, why should the disease attack so much with an awful rapidity, and at a rate hardly few years? Why should it attack large cities, and yet let the surrounding villages go free? He denies that it is contagious, says the strictest quarantine regulations have failed, "the disease has laughed at walls, guards, and legal enactments, the contagion is an

has failed to receive the
disease from its nurses, phy-
sicians are not affected in
larger proportion than
other classes, nor do indivi-
duals appointed with it become
more susceptible when removed
to healthy situations; vacci-
nation has been attempted, but
has failed. it may be said,
we says, to be the result
an epidemic cause, be in-
capable of propagation, it is
by contagion when produced,
by all the exciting causes, none
seems to exercise a more powerful
influence in producing or favoring
it.

the spread of this disease. Shall
we examine and filth of every
kind; the unwholesome air
generated by the crowding
together of the dirty people in
squalid tenements, has been a con-
-stant, in every visit of this
epidemic. We are informed
as one of the most prominent
reasons, that the rich, amid pure
air and cleanly, that it
goes to, [illegible],
[illegible] assumes its most perfect
and most fatal forms as it
[illegible] the [illegible]
it, [illegible], how it displays
its most malignant character,

[illegible] dwells the longest, and [illegible], leave most marked proofs of its power, and of our weakness to control it [illegible]. In [illegible], [illegible], with its train of attendants, adds this to its train. The [illegible] [illegible], especially [illegible], have a strong [illegible] power; [illegible] they, in [illegible], tend to debilitate the vital energies of the system, may, and does act as a predisposing cause. Such in brief, is the sum of the observations and deductions of the Profession as to its causes; and though

we know not its ultimate
cause, we do know many of
its predisposing and exciting
causes, and its decisive our
ability by act of [illegible], by [illegible],
and by [illegible] in our
power, to assist in doing
away with the causes, or at
[illegible], to [illegible] the
[illegible].

Symptoms. The point of [illegible]
of Epidemic Cholera, is usually felt
in the more or less prevalence of
moderate disease of stomach and
bowels, an undefined uneasi-
ness, not amounting to an indeli-
cate, but according to Dr. Wymans,

[illegible] [illegible] [illegible]
existence of that [illegible] of [illegible]
attended at times with headache
and a sense of languor; from
this, the disease pr[illegible] [illegible]
[illegible] gradu[illegible] [illegible], till it
reaches its most malignant
f[illegible]. Jameson divides it
into three stages or forms, viz
Choleraic, Cholero-dysenteric, and
Malignant. Of these, the Choleraic
is the Epidemic, often not so
severe as an ordinary attack
of Cholera-morbus; it usually
begins with a sick stomach,
sometimes vomiting, and a
sense of scald[illegible] [illegible] the

abdomen, more or less sanguine;
[illegible] in different cases, sometimes
being [illegible] and [illegible] of
stools scanty and pale. The
stomach is delicate, and
[illegible] to [illegible] and
indigestion that may be [illegible].
Opium is not considered
dangerous, and generally ends
in recovery. The Cholera-dysentery
state, presents, as might be expected, several forms; there is pain
and tiredness in head, nausea
vomiting, much prostration, and
the discharges are often streaked

with blood and mucus. Lancisi
[illegible] "He did not see
a [illegible] in [illegible]
[illegible] apprehensive of danger."
The [illegible] [illegible]
[illegible] the symptoms in this [illegible]
much grade; violent purging, vom-
iting, pains and cramps in
abdomen, coldness of body, Hip-
[illegible] [illegible] pulse, [illegible]
[illegible] in [illegible] of [illegible]
[illegible] it to be so fearfully fatal,
and so rapid in its course as
to [illegible] [illegible] almost
[illegible]. M. Jardin mentions four
forms of this disease. First, the

Asiatic Cholera, second, the Cholerine, [illegible] third the Fondroyant, and fourth, the Paralytic stage. His first two forms correspond so nearly with Jameson's that it is not necessary here to [illegible] them. The Fondroyant form is that, in which individuals are, without any premonitory symptoms attacked suddenly with vomiting, [illegible], and collapse, and die in two hours. Of the Paralytic form he says, "the disease is in general very [illegible] it [illegible]

with an expressive weakness and
[illegible] of appetite. In the course
of eight days they, all, in a
[illegible] state of extreme mental and
physical depression; the muscles
[illegible] the body,
those of the limbs are in a state
of complete relaxation, the
intellect loses all activity, and
death occurs in the midst of
[illegible] of the powers. The remaining pa-
[illegible] to notice a little
more particularly the individual
symptoms, and underlying so-
[illegible] shall follow Mr. Jardine,
who is considered the best

[illegible]

[illegible] ahead, the more common [illegible] symptoms, varies in different cases, and at different times in the same case; the evacuations are of a whitish flocculent fluid, [illegible] clarified whey, of a spermatic odor, and often deposite a sediment resembling rice well-cooked; they do not always increase as the disease increases, but are often most in the cold stage, they may be followed by obstinate constipation. Forcibly ejected [illegible] conjunction with the discharge from the [illegible], [illegible]

matter vomited does not differ materially from that passed from the intestines; the symptoms cease gradually upon the termination of the disease, and rarely reach the second stage, it often alternates with hiccough. The pain is not confined to the region of the stomach, but extends throughout the whole abdomen, and is often of a griping character.

The quantity of urine is often diminished, and there is often a desire to urinate without the power to do so.

Cramp is one of the most characteristic, and at the same time one of the [illegible] of cholera; they are violent in [illegible], [illegible], and often commence with the first vomiting, the muscles of the abdomen are in a state of contraction, and the [illegible] often assume the appearance of round white cords, [illegible], often persist after the rice has been rejected, and have been the only symptom of the disease. Notwithstanding the many complications, and the great mortality attending

cholera, the mind wandering, loses its activity, sometimes most of the disease. The voice is changed, sometimes almost extinct; at others assumes a rough and wrestling character. Respiration is ordinarily very difficult; the circulation is slow and feeble, and it is the almost complete stagnation that gives rise to the cramps.

Having noticed briefly the leading symptoms, we will proceed to the treatment, the opinions

[illegible] [illegible] [illegible]
[illegible] as numerous as the
Doctors who use them; each one
has his own way of dealing
with the disease, and each,
as in him or another has used,
or thought he has used, a cure;
he gives a medicine, or uses
an [illegible] [illegible], and the
disease ceases, and "Post hoc,
propter hoc" it is lauded as
a cure. It must be our duty,
as far as [illegible], to avoid
the class of practitioners, and
follow, as near as we can,
the treatment used by those
generally acknowledged to be most

conversant and have studied, watching carefully for any di-
-ness that may arise in a case, and treating complications as they appear.

The treatment of Cholera is divided, or indeed, one may says divides itself into two stages or parts, viz, that of the premonitory stage, and second, that of cholera itself. That of the premonitory stage is of great importance, as without doubt, the lives of thousands have been sacrificed by neglecting the earlier period of disease. It is in this stage that

[illegible] adage of a stitch in time saves nine" is so well illustrated; here a little attention and care, and generally a [illegible] little medicine are sufficient to ward off, or prevent, what would, in all probability, if left alone, prove to be a true, and perhaps fatal case of cholera. Attentions where to pronounce symptoms cannot too strongly be urged, lest to [illegible] and [illegible] [illegible] [illegible]. Any departure from health, during our [illegible], may be a [illegible] [illegible] [illegible], but

thing, like the symptoms of the [illegible], have [illegible]-ally, a [illegible] [illegible] [illegible] languor, vertigo, pain sometimes, diarrhoea, or a tendency to it, constitute some of the [illegible] symptoms; and all, these, or any one, may be [illegible] at [illegible] the true disease. If there be diarrhoea, or colic, it must immediately be [illegible], and no Opium, or [illegible] preparations, is strongly indicated; cataplasms and baths are also useful. Should the diarrhoea continue, one is the

[illegible]
such as subnitrate of Bismuth,
may be [illegible] if [illegible]
positive is the evil, a saline
[illegible] may be given; and
in short, whatever the symptom
it should immediately be treated
or relieved.

In the [illegible]
a whole purpose, there are
two indications to be fulfilled
viz, to [illegible] the [illegible]
and restore the blood under
circulation: for this purpose
we employ two sets of remedies
internal and external.
As the internal means, none

[illegible] its preparations, either alone or in combination with other remedies. M. Gardine speaks of the enormous doses of this drug that have been given; he does not approve of [illegible], but says to insure the good effects of the medicine it must be given in large doses, or in divided doses [illegible] repeated. Dr. Ward does not at all [illegible] large doses should only be positively injurious, by causing delirium, coma, and a reduction of the

[illegible] the nervous system, but spreads rapidly in its use in small doses [illegible] [illegible]. Combination with opium has been [illegible] [illegible] Mr. Turner and others, [illegible] the use of this [illegible], the sensations even seem to undergo a marked change in their character.

[illegible] also been believed to have the effect of changing the nature of the sensations. Mr Jardine says it must not be given for its centric effect alone, its action must

he sustained some pretension, for this purpose he gives it at first in two grain doses, followed every half hour by five-grain doses. Dr. Wood does not mention the employment of this remedy, except its combinations as an opiate, which he thinks of great service. Acetate of Lead in combination with opium and calomel, has been a great and old remedy, and one dear to Dr. Wood with marked effect in curbing and altering the manifestations.

to put it the second in-
-dication, viz, that of raising
the heat and circulation,
the second set a remedies,
the external remedies are
used. Revulsives, for this
purpose are much used.
Sinapisms, hot pediluvia
are much used, but one of
the best remedies for this
purpose is the hot-air bath,
it [illegible] of easy
application, is cheap and
can always be obtained,
[illegible] any one can admini-
-ster it, by [illegible] can [illegible]
allow the [illegible] to

[illegible] too [illegible], [illegible] it would have a contrary effect to the one intended. Dr. Chapman, a writer for the Medical News and Library, mentions the application of ice to the spine as one of the most powerful nervine agents. Patients, says he, "in the state of complete collapse from Cholera, may never be recovered with astonishing rapidity; while the [illegible] [illegible] and [illegible] be [illegible] to an extent which will [illegible] the physician with an ideal

in the power of the remedial
[illegible] a [illegible] remedy.
To show the immediate in-
fluence exerted by this
[illegible]
remedy, he mentions the fact
of its having caused menstrua-
tion in an old woman of
seventy-three years; from
this we may learn that it
is not wholly free from
harm, and requires some
care and attention in its
administration. Dr Chapman
at first applies it along
the whole length of the
spine, and gradually re-

-knowes it as the symptoms
[illegible].

If it be true that an
"ounce of prevention is worth
a pound of cure", the Sanita-
tion — which has taken the
precedence of all other con-
siderations respecting Cholera,
and the most rigid rules
should be made, and not
only made, but enforced, en-
-joining all to avoid all un-
[illegible] [illegible] and
[illegible] [illegible] [illegible],
our whole energies, planned,
[illegible] proper measures, in such
a condition, that should

we be visited by this scourge, the
visit will be shared by many
of its daughters and mothers
of [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
exciting causes,
If we are [illegible] [illegible], and
the warning given us will
not be neglected.

AN

# Inaugural Dissertation

ON

## Glucosuria

SUBMITTED TO THE EXAMINATION

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of

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# Glucosuria

This disease, very apparently complicated in its nature, and, characterized by an excessive discharge of saccharine urine, consists essentially in the production and elimination of glucose or grape sugar; the diuresis being merely incidental. The symptoms indicative of its existence, are at first not well marked, complaint being made merely of malaise, and a sense of feverishness.

When it is noticed from the frequent calls to evacuate the bladder, that large quantities of urine are passed, having a faint odor, somewhat like that of apples; and, perhaps also, sometimes accident leads to the discovery of its saccharine property. Owing to the

discharge of such excessive quantities of water by the kidneys, it can readily be imagined, that the most prominent effects will soon be great dryness, and harshness of the skin; together with hardness of the feces and constipation; and constant urgent thirst, which it is difficult to allay: a clammy state of the mouth and fauces; a coating of frothy mucus or white fur upon the tongue.

After a time the general health begins to give way, and there is a loss of all sexual power. Then follows pain in the back, loins and lower extremities; frequent and, in some cases almost constant chilliness, with burning pain in the hands and feet; a parched state

of the mouth and fauces, and sponginess of the gums; great emaciation and debility, with a rapid diminution in weight; a chloroform-like or sweetish odor is exhaled from the lungs and the surface of the body; mental depression with a constant feeling of sinking at the stomach inducing a voracious appetite.

Ultimately the temper becomes soured, peevish or fretful; the memory and intelligence impaired; the tongue is either red at the edges, and furred in the middle or uniformly red and smooth; the mouth often exhibits a scorbutic state, gums presenting a dark red or purplish hue, soft, spongy, and easily bleed, separating often from the teeth; the breath also

becomes exceedingly offensive. Occasionally a redness is observed at the orifice of the urethra, and a sensation of heat is experienced along the urinary passages.
The above symptoms, according to some authors, though generally present, do not uniformly characterize all cases of this disorder. The supervention of an acute disease, especially of a febrile character, is said to suspend the secretion of sugar by the kidneys; but that upon the disappearance of the supervening disease, the sugar returns. In relation to the minor and concomitant symptoms, Dr. Prout states that he has seen no two cases alike; that thirst however is scarcely ever absent during the course of the disease, and usually increa-

ses with indulgence. Hunger is a more variable symptom, and in some instances the appetite is rather deficient; constipation of the bowels, and dryness of the skin though very frequent are not constant symptoms. Instead of the chillness which characterizes most cases, there is sometimes febrile heat. That the debility and emaciation are probably invariable, when the complaint is of very long duration, though differing greatly in different cases, as to their extent.

This disorder, however, commonly progresses slowly, and insidiously, and often ends in, or becomes associated with, pulmonary consumption or albuminuria. There appears to be also ac-

cording to some authors, some causal connection between a cataractous condition of both eyes, and this disease of the soft kind.

The causes of diabetes, like its pathology are very obscure, being merely suppositional. The abnormal excretion of this abnormal property of urine - glucose -, remains and, ing it has attracted and engaged the attention of Medical Pathologists from the seventeenth century to the present time; its proximate cause is still undetermined, its real pathology remains yet a problem to be solved.

However since the elaborate researches of Drs. Macgregor, M. Bernard, Harly & Pavy much light has been thrown on the subject.

M. Bernard while shown that sugar may be formed during digestion, and that a certain portion may become absorbed, as previously taught by Claude Bernard; yet further taught, that this substance is a normal secretion of the liver.

He also demonstrated, that by irritating the 5th pair of nerves, at their origin in the fourth ventricle, sugar may be formed, in abnormal quantities; while the sugar-forming-function of the liver is suspended on section of both these nerves.

But although section of the pneumogastric nerves, has the effect just mentioned, yet the glucogenic function of the liver is restored by irritating their upper cut ends; and diabetes may be produced just

as if the origin of these nerves were excited. On the other hand, by irritating the lower end of the divided nerves no such result is given.

Furthermore, the presence of sugar in the urine in pertussis, gives additional evidence, that the pneumogastric nerves are the seat of the morbid irritation, or that they are greatly involved.

Bernard therefore concludes that the nervous power which excites the liver to secrete the saccharine matter, does not originate in the brain to be carried by the pneumogastrics to the hepatic organ, but rather that the stimulus proceeds along these nerves to the brain and thence by reflex action is transmitted to the liver.

Further consideration led to the opinion, that in health, the reflex action which excites the hepatic sugar-forming function originates in the stimulus given by the air we breathe, to the pulmonary branches of the pneumogastric; and that the sugar formed by the liver, passes into the hepatic veins, the inferior vena cava, the right cavities of the heart, and thence by the pulmonary artery to the lungs, where it is consumed. In proof of the foregoing, experiments show, that when the function of respiration is stimulated by the exhibition of ether or chloroform, sugar temporarily appears in the urine.

Pursuing his investigations still further Bernard was led to the conclusion, that

the liver secreted a substance which, coming in contact with some ferment in the blood, was transformed into sugar; and that, therefore, when this material is found in the blood generally, it may be the consequence, either of excess of hepatic power, or of diminished pulmonary action.
While Dr. Harley agrees in the main with Bernard, he yet doubts the conclusion of this physiologist, that in the normal state, respiration is the exciter of the glucogenic function of the liver.
His experiments seem to indicate that if the pneumogastric carries the stimulus to the brain, to be thence transmitted by the spinal cord and splanchnic nerves to the liver, the point of departure

of the stimulus is probably in the liver itself; and that the cause of the reflex action may originate in the stimulating effect of the portal blood, upon the hepatic branches of the pneumogastric. In proof of which if ether, chloroform, alcohol, or ammonia be injected into the vena portae, the liver is excited to secrete an excess of sugar, and the animal operated upon is rendered diabetic for a time.

He further asserts that the sugar is not destroyed in any appreciable quantity during its passage through the lungs, but rather that this agent formed by the liver, goes to the support of the general system; and hence that in health it disappears from the general circulation, during its

transit through the minute capillaries of the different tissues.

According to Dr. Pavy, the glycogenic substance is not recognized as a sugar forming substance under physiological conditions; but that it is a substance that he terms hepatine, peculiar to the liver, resisting during life, transformation into sugar; yet after death such a change is rapidly effected.

From the foregoing investigations and considerations, it would seem that as there are but two sources, physiologically, from which sugar may be formed in the human body; namely, the small intestine and the liver.

And as in the former, the amylaceous

matters, which enter it from the stomach, are first converted into dextrine, then into glucose, or grape sugar, and ultimately into vegetable or carbonic acid. May we not reasonably conclude that the function of the small intestine, by which the conversion of glucose into carbonic acid is effected, may be arrested — and yet the formation of glucose be so augmented, as to give rise in fact to the diabetic state, — owing to an altered condition of this physiological function, having its origin in, and due to some peculiar pathical condition of the nervous system, hitherto unappreciable to the pathologist.?

And also with regard to the glycogenic function of the liver, may not its abnormally increased activity, causing glycosuria, make its appearance in nearly all the secretions, but particularly in that of the kidneys, stimulating them to the undue performance of their function; — and which is seemingly an effort of nature, on their part to get rid through them of this abnormally increased product, so destructive to the vital processes; — and also inasmuch, as yet, post mortem examinations have revealed in them no lesion; nor indeed in any other organ, — except so far as it had been secondarily superinduced, from the wasting character

ter of the disease — May, may not its abnormally increased activity be due to some peculiar morbid condition seated in the nervous system, involving specially the 8th pair nerves?

And again may not some singular pathical state of this mysterious system, enfeeble the tissues the powers to appropriate this glucose, or the elements formed out of it, in their nutrition, and thus give rise to diabetes?

These are questions we fain would answer, but which, from our limited knowledge, and experience, we must leave to the future investigations and discovery of pathologists.

The prognosis in this disorder is most -

generally irreversible; it proving most commonly fatal.

The saccharine property of diabetic urine upon which mainly its diagnosis depends is now easily discovered, by the many accurate tests employed for its detection. The tests usually employed and upon which reliance is most placed are, first fermentation with yeast: secondly by dilute sulphuric acid: thirdly Moore's test; and fourthly Trommer's.

While in health the average quantity of urine passed in the twenty four hours may be said to be two and half or three pints, in this disorder under consideration, the quantity may be increased to fifteen, twenty, or thirty pints.

The specific gravity is also very high, varying from 1030 to 1060; the more aggravated the disorder the greater being the density.
It was at one time thought that certain forms of vegetable fungi were developed only in diabetic urine; but later pathologists have proved, however, the incorrectness of this view; they having been found alike in acid urine, whether saccharine albuminous, or urine in health.
The actual nature of this disorder remaining still undetermined, its treatment cannot consequently be very successful. The first point of importance is, evidently, to regulate the patient's diet, allowing only such food, as is free from all saccharine and amylaceous —

principles; namely — animal food and such vegetables as contain no starchy matters. A small amount of well fermented and stale bread may be used, or Dr Cumpline's bran loaf.

It is important also that the amount of fluid taken into the stomach should be gradually lessened, by giving such as satisfy the thirst, without giving rise to the necessity for copious draughts. In some cases brandy and water, claret or even the stronger wines are required. The clothing should be warm, the whole body covered with flannel or some such warm material.

Bloodletting has been advised; yet it has been but rarely practised. The medicinal

In the hands of the late lamented Dr. Fricke strychnia proved more beneficial in this disorder than any other single remedy.

Stimulation is also required to avoid sudden variation of temperature, severe mental, or physical exertion; and to take exercise in the open air.

Recently the treatment of glucosuria by the administration of large quantities of sugar, at the same time insuring abstinence to a great extent from all fluids, has been tried, but with no more apparent or real success, if indeed as much, than has attended the treatment hitherto in practice.

AN

# Inaugural Dissertation

ON

# Diphtheria,

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Daniel Sylvester Conner

of

Maryland

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# Diphtheria.

The ample opportunities afforded me during the past few years of seeing numerous cases of Diphtheria, have induced me to select this disease as the subject of my inaugural Thesis. Medical works have but little space to the consideration of a disease, which has shown itself so fatal.

Watson, in his Practice of Medicine, mentions the disease incidentally and calls it by the name of "Cynanche Tonsilaris." To our eminent Professor of the Theory and practice of Medicine, and a medical friend, who has treated many hundred cases of Diphtheria, do I owe the information. I hope on

the subject.

Of late years, no disease has attracted more attention or awakened a more lively spirit of investigation than the one under consideration. The term Diphtheria, a synonyme for Diphtherit, from the Greek "Διφθερα", a skin or membrane, was first employed by M. Bretteneau in a treatise on the subject, published in 1826. To this distinguished medical man is we owe the first accurate account of a disease; which has prevailed for so many centuries. Diphtheria, as described by Bretteneau, has appeared, at short or longer intervals, from time immemorial. The first notice on record of it was by Aretaeus.

Livy speaks of an epidemic in Rome A.D. 390. The Romans offered sacrifices to the Goddess of health: "ut Populus Romanus morbo, qui "angina" vocatur, liberetur, vovit, sit liberatus." It was of its coming in Holland in the year 1557. In England in 1517 it spread terror on all sides. A most malignant & fatal form of the disease raged in Paris during the year 1576. In general epidemics of the disease have appeared more & less frequently since the end of the 16th century. Although it has been called by various names, yet from the descriptions, we can easily recognize the disease now known as Diphtheria. On the unanimity of description and

on recent investigations of Bretonneau, its identity can be clearly established. One characteristic serves to render the identity in no unmistakeable, namely, the existence of the false membrane.

The disease was first seen and described by Bethgill, in England, 1748. He writes thus: "Pain in the head, heat and soreness, rather than pain in the throat. If the mouth and throat be examined, the uvula and tonsils are found swelled and these parts, together with the velum palati and pharynx, appear of a florid or red color, which is most marked on the posterior side of palate, in the angle above the tonsils and upon the tonsils themselves.

afterwards, instead of redness, a broad
spot or patch of irregular form, and
white color makes its appearance."
[illegible] the [illegible] [illegible]
identically with the affection as I
have seen it. Most of the writers,
since to Bretteneau, speak of a peculiar
eruption of a pustular or erysipelatous
character. Although it may now seldom
[illegible] be observed, yet it will not
militate against the identity, that
the disease called Diphtheria and
that described by older writers are the
same. Take any disease and scarcely
we do we find the same symptoms
occurring constantly in any [illegible]
number of cases. In one patient

[illegible]

[illegible] to [illegible].

It would be out of place here to introduce further description of a disease which has shown itself at various times in almost every portion of the earth.

There can be no doubt that the virulence and fatality of Diphtheria at one time and its seeming innocuousness at another, have lead many into error as to the special nature of the disease, since the multiplication of names. With our own recollection with bodily pain, and it spread here and death in every community it invaded. In some of the rural districts of Pennsylvania and Maryland, in

In year 1863, nearly all the children struck with the disease were rapidly carried off. Nothing seemed capable of staying its onward progress. Again has the disease prevailed, characterized by its distinct exudation and membrane, and yet its attacks were comparatively mild and in no case terminated fatally.

Diphtheria is usually ushered in by slight chills, rigors, pain in the head, neck and back, with a feeling of weariness and lassitude. The face is generally red and swollen, the eyes watery and the tongue coated with a cream like substance. It comes first in the ear it almost invariably runs

I do not find mention made of this
condition by any of the writers on the
subject. I have observed it in almost
many instances. After a short time
the patient complained of pain in
the throat and slight difficulty in
deglutition. The appetite is rarely
affected. If the patient is able to
go about his ordinary avocations, if
he be an adult, if a child [illegible]
[illegible] his usual play. If the
inside of the throat be examined,
the fauces appear red and swollen and
the uvula and palate enlarged.
Little and [illegible] patches are now
observed on the fauces and soft
palate. The odor of the breath is

yield at times, extremely so, and once witnessed is not easily forgotten. The time, at which these patches may be seen, is variable. They may appear a few hours after the attack is felt, or they may be delayed nearly four hours. The color of the exudation seems to foreshadow the subsequent mildness or intensity of the disease. If the patches assume a purpish-black, or dusky color, the danger may be looked upon as imminent. It is usual to divide the disease into two forms, a mild and severe. When diphtheria tends to a fatal form, the symptoms are greatly increased; the head-ache is intense, the skin hot and dry, mouth

difficulty in deglution, the pulse rapid and feeble, the tonsils enormously enlarged, and the throat, as far back as the uvula and posterior part of pharynx, is covered with a thick ash-colored membrane. The parotid and submaxillary glands are much swollen and very tender on pressure. Unless judicious treatment be at once actively instituted, the symptoms are increased in intensity and the disease goes on to a rapid and fatal termination. When such is the case, death either occurs from the sudden prostration of the vital powers or by an extension of the false membrane to the air passages and consequent suffocation. [illegible] the [illegible]

[illegible] of the [illegible] [illegible], let us turn our attention to the peculiar diagnostic mark of Diphtheria, the false membrane. A transparent sero-mucous liquid is at first poured out, which after a time becomes more dense, assuming a yellowish tinge. Being scattered in various parts, it gradually coalesces and coagulates, forming a thin pellicle. This may be assumed to be the commencement of the false membrane. According to Dr. McSherry, our learned Professor of the Practice of Medicine, it is a deposit of fibrin, epithelial cells, pus and blood-cells. The exudation may be situated either on the cutaneous or mucous surface. Any point of the body

from which the cuticle has accidentally removed, should it come in contact with the diphtheritic exudation, the membrane will form. That the color of the membrane indicates a mild or severe form of the disease, cannot be questioned. This has been amply shown by observation. As to the presence of a parasitic fungus which fixes itself on the mucous membrane and thus gives rise to the exudation, remains yet to be proved. Slade, the best authority on the disease now under consideration, holds the following language: "As the development, then, of this parasitic growth takes place in a variety of other diseases, we must regard it

as purely accidental, or at least secondary or by no means as a characteristic or an exciting cause of the disease."

Much variance of opinion still exists, as to whether Diphtheria be contagious or not; many arguments of seeming validity have been adduced in support of widely different opinions. Some, among them Bretonneau, maintain that the disease can only be communicated by direct contact. He says:— "Innumerable facts have proved that those who attend patients cannot contract diphtheria, unless the diphtheritic secretion in the liquid or putrescent form is placed in contact with the mucous membrane or with the skin on a just bare

of epidermis, and this application must be immediate. That the disease is and may be caused by inoculation, several examples have proved. The late Prof. Frick of the University of Maryland is said to have contracted the disease which carried him off, in this way. Yet we need further proof and more extended observation to prove this clearly. Later writers favor the opinion that diphtheria is infectious. To cite an instance related to me by an eminent physician of our State, would seem to strengthen this theory. The disease first made its appearance in the person of the youngest child; it was attacked early in the evening

and as the night advanced, the child grew rapidly worse and died the following day. On the day of her death another of the children was seized and likewise succumbed to the violence of the disease. Within a few days, every member of the family was stricken down by this terrible scourge, but fortunately all but the two above named ultimately recovered. But as some very eminent men of the profession are opposed to this question of infection; it would be vain to multiply words in attempting to prove what is still a mooted question. Some have endeavored to establish an identity between Diphtheria and Scarlatina - affecting that the fever is the same

as the latter, if we except the rash. That a rash has been seen in Diphtheria, we admit, but in the majority of cases it is not present. In Scarlet Fever it is rarely absent. In Diphtheria the cerebral functions remain unimpaired to the last, not so in Scarlatina. The sequelae of the two diseases are vastly different. The dropsy which follows most cases of Scarlet Fever is always wanting in Diphtheria, but we have a loss of the nervous power and muscular paralysis. And again that an attack of Diphtheria will not insure immunity against the other affection. Brettneau asserts that Diphtheria includes Croup, yet if we

read the description given by Dr. Watson, we shall find a broad line of distinction drawn between the two diseases. The following is a passage from Watson on the subject: "Some analogy with that disease (croup) it certainly has, but the points of difference are strongly and more essential. It resembles croup inasmuch as it tends to the production of an adventitious membrane on a mucous surface. It differs in the position of that membrane which is seldom found in the trachea."

In Diphtheria the formation of the membrane commences in the fauces, and extend downwards to the trachea; in the croup it is found only in the larynx and trachea and upon

the symptoms and sequelae. Many other arguments in favor of this distinction might be cited, but its truth can now be scarcely questioned.

The presence of albumen in the urine in this disease, has recently attracted much attention. This condition of the urinary secretion has been found in very severe cases and is looked upon as unfavorable. Of the importance of this grave complication, there can be no doubt, yet further inquiry and clear observations are requisite to enable us to attach any prognostic value.

The sequelae of Diphtheria are very remarkable and have been observed by every physician who has treated

even a limited number of cases. Even after the recovery seems perfectly established the morbid poison lingers behind and exerts its effects on the nervous system. The most distressing of the sequelae is Paralysis more local than general. Palsia, amaurosis, head-ache, Ophthalmia have all been seen. In one case, I have known paraplegia to follow, and which obstinately resisted the most judicious treatment for several months. The remedies were persevered in and the patient finally recovered and is now enjoying most excellent health. Paralysis of the pharynx often supervenes and fluids taken into the mouth are regurgitated through the nostrils. The patient must

be nourished in such cases by semi-solids which are swallowed with little difficulty. There is at present a patient in the Infirmary affected with this local paralysis. The following is the formula used by Prof. McClung with decided advantage in his case.

℞.

Ferri Sulphat -
Aur. Sulph. Antimonii āā grj.
Pulv. nucis vomicae ..... grss.
Ft. pill. 1.

S. To be taken twice a day.

As the patient rejects all fluids, this is the most convenient form of administering the Nux Vomica, that it may exert its peculiar influence in the use of [illegible]

[illegible] in the general debility [illegible] to be, to a deterioration of the blood. The severity of the primary symptoms bears no definite relation to the sequelae. Even in the slightest attacks, the prognosis cannot be determined with certainty — since death has followed, when everything warranted a favorable termination. Great watchfulness is therefore necessary during convalescence, for any undue exertion or fatigue may bring on a fatal prostration to the already debilitated system. There is a matter connected with Diphtheria, which I have not seen mentioned as yet, though no doubt it has been observed. It is the almost invariable

fatality attending the attack in these young girls who are have for the first time the menstrual flow. In older females during the menstrual period the disease is not unusually severe. What may be the cause of the extraordinary fatality in this class of patients it would be presumptuous in me to venture an opinion. But I would suggest that the catamenia having a tendency to weaken the patient, the vital powers have less force to resist the onset of the disease.

Like all diseases which have appeared epidemically and spread terror by their fatality, Diphtheria has been subjected to a variety of treatment.

To begin with M. Bretonneau we shall discover that a system of treatment was adopted that would little accord with the ideas held at the present time. Blood-letting both local and general, blistering and cauterization of the pharynx and the employment of Mercury were the remedies relied on. The disease being of an asthenic nature, antiphlogistic remedies so called, have given place to a more rational treatment. No specific having as yet been discovered, our endeavor must be to direct our patient safely through the disease. Hygienic means must be insisted on as of the highest importance. Cleanliness of person and good ventilation must be obtained.

If there be any children in the house, where Diphtheria exists, they should be carefully excluded from the sick-chamber, and the spoons, towels &c used by the patient should be withheld from common use.

Many practitioners usually commence their treatment with an emetic or purgative. Full doses of Ipecac are preferable if any croupy symptoms show themselves. Purgatives must be used with the most extreme care. In mild cases simple local applications to the fauces will suffice. Should grave symptoms manifest themselves tonic and supporting remedies must at once be employed. These remedies should be persisted in and small but frequently repeated doses should be used.

If the stomach be irritable and reject the medicine and nourishment must be had by nutrient enemata; beef tea, brandy & Quinine have been successfully employed in such cases. Chlorate of Potash, Muriate Tinct. of Iron and Quinine hold deservedly the first place in the treatment of Diphtheria. In all the cases I have seen treated, the Chlorate of Potash constituted the principal remedy, used internally and as a gargle. Even in the most desperate cases it never failed to give relief. Prof. McSherry considers the Muriate Tinct. of Iron as the medicine to be used, throughout the whole course of the disease. The following combination is much lauded. Tinct. Sesquichloride of Iron,

Chlorate of Potash, Chloric Ether, Muriatic chloric acid sweetened with syrup, full doses being employed, according to age of patient. This is to be given pro re nata. At the same time wine, beef-tea, brandy, milk, eggs or whatever the ingenuity of the physician or the fancy of the patient may suggest, are to be administered. Much dispute has arisen with regard to the propriety of employing local agents to the fauces. Some entirely exclude their use on the ground that the disease being constitutional they are of no value. Irritating gargles undoubtedly do aggravate and increase the inflammation. But because they have been injudiciously

used, it should be no reason why they should be entirely banished from practice. For the experiences of some of the most eminent practitioners of the day has proved their efficacy. The use of violent caustics cannot be too much deprecated, for they have done unquestionable harm in numerous instances. Fortunately their indiscriminate application is rapidly going out of practice. A weak solution of nitrate of silver may be used, when the patches present a dark, gangrenous appearance. The Muriate Tincture of Iron as a gargle has also been employed beneficially. Fl. brute of soda, Glycerine & honey have been found very advantageous.

Milk or cream I have seen used as a gargle and with great seeming advantage. Inhalations of steam may be used as an adjunct to our other remedies. If there be much enlargement of the cervical glands, warm fomentations, hot poultices & tar poultice should be applied. In very severe cases where all our remedies have failed, and death is threatened by asphyxia, recourse must be had to tracheotomy as the "dernier ressort". A discussion as to the expediency of such a grave operation would here be out of place. Dr Slade says, "that when we finds that our remedies are too tardy and incapable of overtaking the disease, we would be justified in

in employing Tracheotomy as the only means of saving the patients life."

In all cases of Diphtheria, whether they be mild or severe, the utmost caution should be observed during convalescence. No less care is necessary in this disease than in Scarlet Fever. And we all know the vigilance demanded in this disease, even after recovery seems perfectly established. In Diphtheria the patient may have passed happily through a trying ordeal, everything may promise a speedy restoration to health, yet some slight exposure, or imprudence may again add force to the morbid poison that still lingers behind and thus a fatal attack be induced. Parents should

accordingly be warned of the dangers to which their children are exposed during convalescence from Diphtheria.

AN

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ON

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of the

Provost, Regents and Faculty

of

# PHYSIC,

of the

# UNIVERSITY OF MARYLAND,

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Doctor of Medicine,

by

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Petersville, Frederick Co. Md.

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# Digestion

The process of digestion may be divided into the following stages. Prehension of food Mastication and Insalivation. Deglutition Action of the Gastric Juice. Action of the small Intestine and Defication.

The motions by which the food is conveyed to the mouth and introduced into its cavities constituting the acts of Prehension and deglutition, are ordinarily considered to be voluntary at least in the Adult and there is no doubt that the will has entire control over them, Nevertheless they belong to that class of spontaneous movements and like the movements of locomotion may be kept up when the will is in expectation by the suggesting and guiding influence of sensations ~~thus~~ performed under the

same essential conditions as the purely sympathetic or sensori motor nerves. The necessity of guiding sensations for these last mentioned is made evident by one of Sir C. Bell's experiments, the wrong interpretation of whose results originally led him to erroneous view of the functions of the Fifth pair of nerves. He found that an Ass, in which the infra orbital branch of this nerve had been divided, made no attempt to pick up oats with its lips, while the animal saw them, and brought its lips in absolute contact with them, hence he concluded that the power of motion was destroyed in the lips when it was only the guiding sensation that was deficient, the motor power being supplied by the facial nerve, or Portio dura.

But altho" the movements concerned in the ingestion of food in the adult require the cooperation of the sensorial centres, this is not the case with the set of actions in the infant, which may be considered as essentially a reflex act and which is performed not merely without will but even without consciousness.

In the first division of the alimentary canal viz the mouth the food undergoes simultaneously two different operations viz Mastication and Insalivation. Mastication consists in cutting and triturating of the food by the teeth by this action it is reduced to a state of minute subdivision. This process is entirely a mechanical one. It is necessary in order to prepare the food

for the subsequent action of the digestive fluids. As this action is chemical in its nature it will be [illegible] more promptly and efficiently if the food be finely divided than if it be brought in contact with the digestive fluids in a solid mass. This is always the case when a solid body is subjected to the chemical action of a solvent fluid. In the structure of the teeth, there are certain marked differences, corresponding with the habits of the animal, and the kind of food upon which it subsists. In the Fish and Serpent in which the food is swallowed entire, the teeth are simply organs of prehension. In the Carnivorous quadrupeds, as the Cat and Dog kind, there are three different kind of teeth.

First the incisors twelve in number situated in the anterior part of the jaw, of flattened form and placed with their thin edges running from side to side, these are adapted for dividing the food. Behind them come the canine teeth or tusks, one on each side of the upper and under jaw. These are long curved and pointed and conical, and used as weapons of offence and for laying hold and retaining their prey. Lastly the molars eight or more in number on each side are larger and broader than the incisors. In these animals, mastication is very imperfect since the food is not ground up, but only torn and mangled by the action of the teeth before swallowed into the stomach.

In the Herbivora on the other hand the incisors are present only in the lower jaw in the remaining animals tho' in the horse they are found in both the upper and lower jaw. They are used merely for cutting off the bundles of grass on which the animals feed. The canines are only slightly developed and mastication is performed by the molars. These are long and thick. In the Human subject the teeth combined the characters of those of the Carnivora and the Herbivora. The incisors four in number in each jaw a cutting edge running from side to side. The canines situated immediatly behind the former are much less prominent and pointed than in the carnivora and differ less in

form from the incisors on the one hand and the first molars on the other. The molars are thickened strong and have comparatively flat faces like the herbivora: but instead of presenting ridges, are covered with more or less conical eminences, like those of the carnivora. In the human subject therefore, the teeth are evidently adapted for a mixed diet, consisting both of animal and vegetable food.

Human Saliva obtained directly from the buccal cavity is colorless slightly acid and alkaline fluid. The saliva is not a simple secretion but a mixture of four distinct fluids. These secretions in the human subject is first the

Parotid gland next the Submaxillary next Sublingual and last the mucous follicles of the mouth. The Parotid Saliva is obtained from the dog by exposing the duct of Steno where it crosses the masseter muscle and introducing into it through an artificial opening a fine silver cannula. It is clear and watery without the slightest viscidity, and has a slightly alkaline reaction. The Submaxillary Saliva is obtained by inserting a cannula into Whartons duct. It differs from the Parotid fluid in its physical properties in possessing a well marked viscidity. It is alkaline in its reaction. The Sublingual is alkaline colorless and transparent and has a greater degree of viscidity

than that from the Submaxillary. The mucous secretions of the follicles of the mouth, which forms properly a part of the saliva, is obtained by placing a ligature at the same time on Wharton's and Steno's ducts and on that of the Sublingual gland, so as to shut out from the mouth all the salivary secretions from the glands, and then collecting the fluid secreted by the buccal mucous membrane. The saliva proper consists therefore, of nearly the same kind of mixture of all these different secretions of which that from the Parotid is the most abundant that of the Sublingual and of the mucous follicles of the mouth the least. Dr. Bidder and Schmidt obtained from one of the

Parotid glands of the Dog 136 grs of fluid in an hour, from the Sublingual 87 ditto and from the mucous follicles of the mouth after a ligature on both Wharton's and Steno's ducts 31 grs. The saliva is not as a whole secreted at all times with uniform rapidity. While the jaws are at rest there is but a small flow of the saliva only enough to keep the mucous membrane and mouth moist. Any movement of the jaws increases the flow. The first attempt to ascertain the flow of saliva daily was made by Mitschirlich who collected from two to three ounces in twenty four hours from a salivary fistula of Steno's duct in the human subject from which it was supposed that the total amount

from all the glands would be from ten to twelve ounces daily. As this man was a Hospital patient the calculation cannot be regarded as correct. Bidder and Schmidt make a higher estimate. They calculate the amount secreted daily making an allowance for seven hours sleep as not far from 28.000 grs or about three and a half pounds (av). On repeating the experiment we have not been able to without artificial stimulus to collect more than 336 grs per hour this quantity may be increased by introducing into the mouth any smooth irritating substance, as glass beads or the like, and during mastication of food the saliva is poured out in very much greater abundance. The quantity

required for the mastication of bread 4.5, 72 grs and for meat 3.36 grs. If we now reckon the quantity secreted between meals as continuing for twenty-two hours at 6.56 grs per hour we have 20.164 grs as the total amount in the twenty-four or rather less than three pounds (av) The true function of the Saliva is altogether a physical one. Its action is simply to moisten the food and facilitate its mastication, as well as to lubricate the bruised mass and to assist its passage down to the oesophagus. By the combined operation of the two processes the food undergoes in the cavity of the mouth, its introductory preparation is accomplished. It is triturated by the teeth and the same time by the jaw tongue and cheeks it is intimately mixed with the salivary fluids until

the whole is reduced to a soft, pasty mass of the same consistency throughout. It is then carried backwards by the semi-circular movements of the tongue into the Pharynx and conducted by the muscular contractions of the oesophagus into the Stomach. When the reduction of food in the mouth has been sufficiently accomplished it is carried into the Pharynx, and thence propelled down the Oesophagus into the Stomach, by a set of associated movements, which, taken together constitute the act of Deglutition. The first stage in the process is the carrying back of the food until it has passed the anterior palatine arch thus, which is effected by the mearness of the tongue and the palate is a purely voluntary movement. In the second stage,

the tongue is carried still farther backwards and the larynx is drawn forward under its root, so that the epiglottis is pressed down over the rima glottidis. The muscles of the anterior palatine arch contract after the morsel has passed it and assist its passage backwards these with the tongue cut off completely the communication between the fauces and the mouth. At the same time, the muscles of the posterior palatine arch contract in such a manner as to cause the sides of the arch to approach each other like a pair of curtains so that the passage from the fauces into the posterior nares is nearly closed by them and to the cleft between the approximated sides. The uvula is applied like a valve. The third stage of the process the propulsion

of the food down the oesophagus, then commences. This is accomplished in the upper part, by means of the constrictors of the pharynx and the lower by the muscular coat of the oesophagus itself. The food which thus is propelled along the oesophagus enters the stomach through its cardiac orifice in successive waves, is immediately subjected to a peculiar peristaltic movement, which has for its object to produce the thorough intermixture of the gastric fluid with the alimentary mass, and to separate the portion which has been sufficiently reduced from the remainder.

On the entrance of the food into the stomach it is subjected to the operation of the gastric juice which is secreted by the follicles

in its walls or by a certain part of them. The gastric follicles are very different in different parts of the stomach. In the pyloric portion they are nearly straight lined with glandular epithelium and terminating in cul de sacks at the under surface of the mucous membrane. In the cardiac portion of the stomach the tubules are very wide in the superficial part of the mucous membrane and lined with large distinctly marked glandular epithelium cells. The blood vessels which come up from the submucous layer of areolar tissue form a close plexus around all the glandules and provide the mucous membrane with an abundant supply of blood both for the purpose of secretion and absorption

That part of the digestion that takes place in the stomach has always been regarded as nearly if not quite the most important part of the whole process. The first observers who made any thing like a correct report of gastric digestion was, Reaumur and Spallanzani. The first decisive experiment was made by Dr Beaumont of the U.S.A. on the person of Alexis St. Martin a canadian who had a permanent gastric fistulae produced by a gun shot wound. It tore away the integument at the lower part of the left chest opening the pleural cavity and penetrating through the lateral portion of the Diaphragm into the great pouch of the stomach. Dr. B. experimented on this person from 1825-1831.

He established during that time many important facts. First that the active agent in digestion is an acid fluid secreted by the walls of the stomach. Secondly, that this fluid is poured out by the glandular wall of the organ only during digestion and under the stimulus of food and finally that it will exert its solvent action upon the food outside the body as well as in the stomach if kept in a glass phial upon a sand bath, at the temperature of 100°F. Since Dr B's time it has been ascertained that simple gastric fistula may be produced at will in some lower of the lower animals usually from the Dog. By a simple operation, an incision should be made thro'

the abdominal parietes in the median line over the great curvature of the stomach, the anterior wall of the organ then to be seized with a pair of hooked forceps drawn out at the external wound and opened with the point of a bistoury, a short silver canular ½ to ¾ in diameter is then to be inserted into the wound into the wound in the stomach the edges of which are fastened round the tube with the ligature in order to prevent the escape of the gastric fluids into the peritoneal cavity. The external end of the canula is closed with a cork. In regard to the acid contained in the gastric juice there has been a great deal of controversy. It has been affirmed Bernard

R. D. Thomson. Lochmann. and other chemists that Lactic Acid is the real agent in the solvent process to which the foods is subjected. That Hydrochloric acid is the source of acidity in the gastric juice has also been maintained by Enderlin and recently by Hubbert. Prof Dunglison says in the pure gastric juice drawn from the stomach of Alexis St Martin that the smell of Hydrochloric acid was distinctly recognized in the fresh juice. He thinks that this is a strong evidence in favor of this fluid and that it is the principal if not the only source of its acidity. Dr Pavy is of the same opinion, in Prof Grahams examination of pure gastric juice this distinguished

chemist succeeded in separated "Hydro" acid and altho" he found free lactic to be present, its quantity was comparatively small. Robin and Verdeil regarded the acid reaction of the gastric juice as due to Lactic acid.

The most important ingredient of the gastric juice beside the free acid, is its organic matter which is sometimes known under the name of Pepsine. This name was first given by Schwann. Its source is not really known. But it can be regarded in no other light than as a real animical ingredient of the gastric juice, and as essential to its constitution. A very singular property of gastric juice is that it may be kept for

any length of time without putrefaction in a common glass stoppered bottle.
Another important action which takes place in the stomach besides the secretion of the gastric juice is the peristal ic movement of the organ. This movement is accomplished by the alternate contraction and relaxation of the longitudinal and circular fibers of its muscular coat. The contraction takes place in such a manner that the food after entering the cardiac orifice of the stomach is first carried to the left into the great pouch of the organ thence downwards and along the great curvature to the pyloric portion.
This peristaltic action of the stomach.

however, is a gentle one and not at all active or violent in its character. The length of time for digestion differs in different kinds of animals. In the carnivora a meal of uncooked meat requires from nine to twelve hours. And Dr Beaumont says in the Human Subject the average time is from one to five and a half hours according to the kind of food taken. We will now notice the amount of gastric juice secreted daily. Bidder and Schmidt found that in a dog weighing thirty four pounds they were able to obtain in twelve hours one three quarter pounds the total quantity daily would be three and a half and applying the same calculation to a man of medium size we

have but little less than fourteen hundred. one pound of meat is only a moderate meal for a medium sized dog and yet to dissolve this quantity no less than thirteen pints of gastric juice will be necessary. There is during digestion a constant circulation of the digestive fluids from the bloodvessels to the alimentary canal, and from the alimentary canal to the bloodvessels. The secretions of gastric juice is much influenced by nervous conditions, as was noticed by Dr Beaumont in his experiments upon Dr Martin that irritation of the temper and other moral causes, would frequently diminish or entirely suspend the flow of gastric juice. In order therefore that digestion may go on

properly in the stomach food must be taken only when the appetite demands it. [illegible] The chyme or product of gastric digestion which escapes from the [illegible] into the duodenum, contains much gelatinous matter and starch which has [illegible] a [illegible] or [illegible] or it is still very acid and much unchanged material. Soon after its entrance into the duodenum the chyme is subjected to the action of the Bile, the Pancreatic juice and the secretion from the glands in the walls of the intestine itself, which is known under the name of "Succus entericus" – juice of the intestine. Of these the Pancreatic juice will be first noticed. The structure of the Pancreas closely resembles that of the Salivary glands, like the salivary glands its devel-

[illegible] secretion [illegible]
form of a mucous canal at a particular
spot upon which a mass of cells has been
busy accumulated. The secretion of this
gland [illegible] [illegible] the gen
eral observences being clear colorless slightly
viscid and alkaline in its reaction. The
digestion of the oil and its conversion into
chyle does not take place at once upon its
entrance into the duodenum but only
after it has passed the orifices of the
pancreatic and biliary ducts. Since
ducts generally open into the intestine at
or near the same point it was for a long
time difficult to decide by which of the
secretions the digestion of oil was ac
complished. Bernard was the first who

throw any light on this subject by experimenting on some of the lower animals in which the ducts opened as usual just below the pylorus while the pancreatic communicated with the intestine some eight or ten inches lower down, Bernard fed these animals with substances containing fat, & injected melted fat into the stomach, and on killing them afterwards found that there was no chyle in the intestine between the opening of the biliary and pancreatic ducts, but that it was abundant immediately below the orifice of the latter. The result of these [illegible] and Prof Sam Jackson of Philadelphia to the conclusion that the pancreatic fluid

[illegible]

instances. In order to obtain pancreatic juice from the dog, the animal [illegible] is anæsthetized, and an incision made in the water-shed of the abdomen, a little to the right of the median line and a loop of the duodenum together with the lower extremity of the pancreas which lies close to it drawn out at the ventral wound. The pancreatic duct is then to be exposed and opened and a small silver cannula introduced into it and secured by a ligature. In the dog there are two pancreatic ducts situated from half an inch to an inch apart. The lower one of this which is the larger of the two is the best adapted for the insertion of the cannula.

Bidder and Schmidt obtained on an [illegible] 4 lbs 14½ ozs pancreatic juice during a fasting [illegible] quantity in the human subject is taken or less than 250 grs in a little [illegible] of a second. The most important ingredient of the pancreatic juice is its organic matter. Pancreatine this is much more abundant in proteids to the other ingredients in the secretions than is organic matter of any other fluid. We will next consider digestive secretions what are its uses. When the secretion is taken on the [illegible] it [illegible] the [illegible] and consideration [illegible] is found to [illegible] [illegible] albumen, albumoses.

which it is given. It has no action upon cane sugar until it [illegible] into [illegible]. Its admixture [illegible] with the chyme seems further to have the effect of checking destructive chemical changes [illegible]. It has been found that the admixture of bile with fermenting [illegible] arrests the fermentation. [illegible] ing all its uses it must be admitted that no [illegible] to the [illegible], [illegible] with the deleterious results which might have been expected from it. For it has been found by the experiments of Schwann, Blondlot and Bernard that if the bile duct be divided and a tube be inserted [illegible]

a manner as to cause many disorders
through a failure of digestion in the stomach
and particularly the bowels. They may, in a most
severe case, in this way, at last die
with signs of exaustion.

From the stomach [illegible] are
[illegible] are supposed to pass
from the third division of the al-
imentary canal, namely the small intes-
tine. As already mentioned, it is only the
albuminous matters which are digested
into the stomach. Cane sugar is in-tro-
duced [illegible]
into the body in to glucose. It has been
found that ten grs of cane sugar dissolved
in half an ounce of gastric juice quite free
at the end of two hours, and at the end of

time [illegible] the quantity of this substance [illegible] is considerable. If pure cane sugar be given to a dog with food [illegible] of meat [illegible] considerable [illegible] to three hours [illegible] detected in the fluids withdrawn from the stomach. It is first [illegible] under the form of cane sugar or passes little by little into the duodenum, where the intestinal fluids at once convert it into glucose. It is to remain that starchy matters are not digested into the stomach but passes unchanged into the small intestine. Here they meet with the mixed intestinal fluids, which act at once upon the starch and convert it rapidly into sugar. If a dog be fed with [illegible] means

and boiled starch and filled a short time after the meal. The stomach is found a considerable distance larger, while in the small intestine there is an abundance of sugar but little or no starch. It has been found at the end of three quarters or an hour after a full meal of boiled starch and meat that all traces of both starch and sugar had disappeared from both stomach and intestines. There can be no doubt that the natural place for the digestion of starchy matters is in the small intestine and that it is accomplished by the action of the intestinal juices. The fluid of the small intestine which is concerned by the intermixture of the Biliary and Pancreatic secretions with the salivary and gastric fluids

and with the secretions of the intestinal glands [illegible] mixture, appears to have the power of dissolving [illegible] absorbable the [illegible] elements [illegible] but [illegible] The intestinal juice has been less accurately studied than the other digestive fluids owing to the difficulty of obtaining it in a pure state. It seems ~~to~~ to resemble very closely in its physical character the secretion of the mucous follicles of the mouth. It is colorless and glassy in appearance viscid and mucous in consistency and has a distinct alkaline reaction. It has the property when pure as well as when mixed with other secretions of rapidly converting Starch into sugar, at the temperature of the living body. By [illegible] time the [illegible]

r a signal that the action of the gastric juice in the digestion of ammonized substances, is not confined to the stomach, but continues after the food has passed into the intestine, about half an hour after the ingestion of a meal the gastric juice begins to pass into the duodenum where it may be recognized by its strongly marked acidity and its secretory action. A short afterwards as it continues to pass into the duodenum, becomes mingled with the fibres of muscular fibres, fat-vesicles and in short, the turbid admixture becomes thicker and thicker from the second to the tenth twelfth hour after which the intestinal fluids become rapidly less abundant and finally [illegible]

[illegible]

[illegible] ingredients of the food goes on [illegible] manner from the oesophagus throughout the entire intestine at the same time it results in the production of some chemical [illegible] [illegible] [illegible] emulsion induced by the action of the pancreatic juice on fat, and [illegible] sugar, produced from the transformation of starch by the mixed intestinal fluids. Now, entomologists have taken up this subject, as they do [illegible] it possible for me, I have experimented [illegible] to the utmost and I have done my best. This is a very subject and a great deal more might be said on it but I have said enough. Hoping that it may be favorably received, I remain with much respect, E. W. Spence

AN

# Inaugural Dissertation

ON

Menorrhagia

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

# PHYSIC,

of the

# UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

## Doctor of Medicine,

by

Alfred Griffith

of

Maryland

Session Fifty eighth 1865-6

# Hemorrhage

By this term, is meant the escape of blood, from the vessels in which it is normally contained. It may escape from numerous minute vessels, or, from one or more large trunks; the former has been called medical, the latter surgical hemorrhage. This nomenclature has arisen from the circumstance that the one is treated of in works on practice of medicine, the other, by writers on surgery. I have thought that the two divisions were sufficiently connected, to admit of a consideration

First variety. Active congestion.

This variety is often preceded by active congestion; the patient experiences a feeling of indisposition, with wandering pains, which gradually settle in the part from which the blood is about to flow. There is a sense of weight and fullness, or, of heat and tingling in the part, and if it is visible, fullness and turgescence will be observed; at the same time there will be chilliness and paleness of the extremities. This state is frequently followed by reaction; marked by a full and bounding pulse.

The blood at length breaks forth,

with a relief of these symptoms.
This variety of hemorrhage occurs most frequently in young robust individuals, who are accustomed to full living, without sufficient exercise. –

Second variety. Passive hemorrhage. This is neither preceded by, nor attended with, local or general excitement, unless some other disease coexist.
There is weakness of the circulation, and a deficiency of muscular power; the blood which escapes is of a dark color, and little disposed to coagulate. If the hemorrhage is considerable in amount, it produces a depressed state of the sys-

tion, and even syncope.

It occurs in those who are naturally feeble, or who have been debilitated by insufficient food, the depressing passions, or disease; especially malignant scarlatina, typhus fever and scurvy. It is often, exceedingly difficult to be controlled. –

Third variety. Constitutional hemorrhage. There exists here a peculiar condition of the system, which predisposes to the occurrence of serious hemorrhage, from the most trivial causes; as slight muscular effort, coughing, and straining at stool. It seems in some instances, to be associated

with a gouty or rheumatic diathesis; and has displayed itself chiefly in the young. –

These three varieties will, I think, comprehend most of the hemorrhages of this division. –

Symptoms. When hemorrhage occurs from a part which communicates with the exterior, the discharged fluid is demonstrative; but we are deprived of this evidence, when the blood escapes into a closed cavity, or into the substance of a gland. In this case we are guided by the disturbances of function, springing

from the pressure upon, the laceration or distension of, the suffering organ or adjacent parts; also by the signs of extravasated liquid, effected circumscribed pulsation and percussion. Information may also be derived from those general symptoms, which manifest themselves through the system at large; as paleness of the face, feebleness and coldness of the extremities, and a tendency to syncope.

Causes. Whatever produces a total division of the coats of a bloodvessel, as external violence. Those influences which induce overexcitement of a

part, which is liable to hemorrhage; as excessive exercise of the lungs in speaking, and the application of stimulant bathing which tends to rarefy the blood, an unusual impulse towards an organ; as lifting heavy weights, straining at stool, and certain posures. An increased in pulse of the heart; occasioned by an excess of animal food, stimulating drinks, violent exercise, and the suppression of habitual discharges. It is thought, that unwholesome diet and the long-continued use of alkaline substances, may act as remote causes of hemorrhage, by impoverishing the blood.

Treatment. It is often necessary to exercise great caution, in deciding to employ remedies, for the arrest of hemorrhage. The following rules are given; 1st. when it is situated in a safe place, and appears to have the effect of relieving some pre-existing morbid condition, more serious; it should not be interrupted, unless it be excessive. 2nd. if the hemorrhage has lasted for some time, and the system has become accustomed to the drain, it is advisable not to interfere. – The measures to be employed in any case, may be divided into those which are appropriate during

the continuance of the hemorrhage; and those necessary in the interval. Of the former, rest is all-important. The patient should also be surrounded with fresh cool air; and that position should be chosen, which is most favorable to the afflux of blood to the affected organ. And in the active variety, bloodletting, saline cathartics and cool drinks may be used. Sinapisms and blisters sometimes act beneficially, by receiving irritation; and cold, applied as near the seat of hemorrhage as possible, is often an efficient means. Acetate of lead may be used with

benefit, as it combines a sedative with the astringent [illegible].

In passive hemorrhage, astringents should be used to prevent the further escape of blood; while efforts should be made, at the same time, to give tone to the bloodvessels, and to improve the quality of the blood. The treatment of the constitutional variety, will be modified, by the condition of the patient; if the blood is rich in red corpuscles, and there is, at the same time, febrile action and considerable strength of pulse; depletory measures should be used. Bitter, as generally

is the case, the blood is deficient in coagulability, and the patient is of a debilitated habit; tonics, and a generous diet are necessary. –

Treatment during the interval. In the active form, the diet should be regulated; and the patient should take sufficient exercise, especially of the passive kind. He must avoid all sources of excitement, and be protected from vicissitudes. – The great objects in the passive and constitutional varieties, are to restore a healthy constitution to the blood, and to improve the general health; these may be

accompanied by a nutritious diet, and hygienic surroundings. –

Second division of hemorrhage, or that which results from wounds of the larger bloodvessels.

Venous hemorrhage. This is usually not dangerous, unless it proceeds from a large and deep-seated trunk. It may be known by the dark color of the blood; and by its flowing in a steady, continuous stream. It can generally be arrested by pressure, and an elevated position; if this does not succeed, a ligature must be applied.

Arterial hemorrhage. First, secondary, or primary hemorrhage.

An artery is known to be wounded, when the blood, of a florid hue, escapes in jets corresponding to the beats of the pulse. If the hemorrhage is not soon arrested, syncope occurs from the great loss of blood; and by it, the bleeding is temporarily suspended; but on the occurrence of reaction, the blood again flows, and the same process is repeated until death takes place.

This unfavorable result, however, does not always occur; for the state of syncope, which is produced by the loss

of [illegible], is [illegible]
coagulation of blood in the wound,
by which [illegible] is prevented.
The formation of this coagulum is
also favored, by the retraction of the
artery in its sheath, and a contrac-
tion of its coats, which [illegible]
of the vessel is diminished.
This external coagulum is [illegible]
followed by the development of one,
within the artery, [illegible] as
as the first large branch; this is ter-
med, the internal coagulum.
But these coagula are soft, and
imperfectly adherent to the artery,
it is necessary, therefore, in order

be proved more perfectly, upon a
[illegible] of the three days, that
the part [illegible] adhered
together; this is readily accomplished, by a deposit of lymph, from the coats and sheath of the artery.
In the course of one or two months, these clots become organized, and obliterated, the process is completed, by the conversion of this part of the artery into a fibro ligamentous cord.
An occurrence, similar to that which takes place in the umbilical arteries of the infant.
These rules do not apply to those cases, in which the artery is cut

partially [illegible], for the process which nature adopts for the arrest of hemorrhage, is seriously interfered with. In the first place the retraction and contraction of the artery is prevented. Secondly, there is a constant tendency of the wound to gape, which by the formation of adhesions, compelled to resist the force of the circulation, is prevented. But even here, nature is sometimes able to effect a cure; especially when the wound is small, and made in the longitudinal diametre of the artery.—

Treatment. Although nature is often compelled to arrest this rem

of hemorrhage, it is by no means advisable, he is best entitled, so important are efforts to her, which not is capable of assisting her so materially.

The means for affording this assistance are; ligature, compression, styptics, torsion &c. Ligatures are made of various materials; as silk, vegetable and animal tissue. Of these materials, silk is the one generally used. It should be round, smooth, colorless, well twisted and of considerable strength; and should be well waxed before being used.

The objection to the use of animal ligatures, is, that they undergo disintegration, by the imbibition of fluids

after they have accomplished the purpose; that is, securing the occurrence of secondary hemorrhage.

Mode of applying a ligature.

The artery should be drawn out with a tenaculum or forceps, and isolated from its connections with surrounding parts; the ligature should now be placed round the artery, and drawn with sufficient firmness to divide the inner and middle coats.

At a period varying from one to two weeks, according to the size of the vessel, the ligature becomes detached. The mode by which this separation is accomplished, is as follows.

The portion of the artery embraced by the ligature, is strangulated immediately, or in the course of a few hours; and is detached, on each side of the ligature by the ulcerative process, and comes away as a slough. The changes which occur, when a ligature is applied to an artery, are similar to those which take place when hæmorrhage is arrested spontaneously; with the difference, that the ligature takes the place of the external coagulum.

Compression may be resorted to, for the arrest of hæmorrhage, when from any cause the application of the ligature is impracticable: It may be

made by the fingers, by the tourniquet and by the compress and roller.

Styptics are agents, which controll hemorrhage by a direct influence on the blood and bloodvessels. Under this head are included astringents, escarotics, and various substances which act mechanically. The most important of these agents are; persulphate, and tenchloride of sesquiox of iron, tannic acid, matico, and cold applied in various ways, as cold water, refrigerant lotions, and pounded ice.

These cold applications, should be used with caution; as they may be followed by injurious reaction,

and perhaps, mortification.

The deep artery may be cut, when the hemorrhage proceeds, from being of small size, situated in a deep and narrow osseous cavity.

Another mode of arresting hemorrhage, is by torsion; this is accomplished by seizing the artery with the forceps, and twisting it six or eight times, on its longitudinal axis; thereby lacerating its tunics.

General treatment. It is of the utmost importance, to keep the patient perfectly at rest; and the part from which the hemorrhage proceeds, in an elevated position.

The apartment should be cool and well ventilated. A mild unstimulating diet should be given, in quantities, sufficient to meet the demands of the system; the drinks should be cool and acidulated. Lumps of ice held in the mouth, and allowed to melt, produce a grateful and beneficial effect.

Second variety of arterial hemorrhage, or secondary hemorrhage.

This is defined to be hemorrhage, which comes on after the lapse of a few hours, from the time of the occurrence of an injury. It may result from a

variety of causes, of which the following are the most common. First, a diseased state of the arteries, which renders them incapable of supporting a ligature until the clot has contracted firm adhesions. Second, ulceration and sloughing of a wound, involved near large arteries. Third, faulty application of the ligature: as when insufficient force is used, in consequence of which the inner and middle coats are not divided. — Treatment. The same remedies are used here, as are applicable, in cases of primary hemorrhage.

AN

# Inaugural Dissertation

ON

## Asiatic Cholera.

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Alexander H. McLeod

of

Baltimore, Md.

Session ending March 1st 1866.

# Introductory Remarks

"There is nothing new under the sun," said Solomon. It may be so, but our busy nineteenth century, with its marvels of scientific investigation and attainment, bids fair to contradict this celebrated aphorism. Yet there are many among us who deny progress, and who can trace amid the almost obliterated records of past races and civilizations, the counterpartes of all the achievements of modern science. According to them, the human race has its fixed orbit, in which

which, from all time, it has revealed, repeating itself as the cycling years went by, in all its infirmities and all its glories, now with deepening shadows traversing the gloom of the Dark Ages, now radiant with the varied splendors of the Augustan and the Christian Eras.

Equally with the rest of the scientific world, have the followers of the Healing Art, been affected by this question of novelty. The possibility of the occurrence of a new disease, has been denied by some of the best minds of the Medical Profession. They claim that the maladies, classed as new diseases, are only old ones, with

new

new names bestowed upon them, perchance from a better understanding of their pathology. However this may be, it is certain that from time to time, various diseases have arisen entirely unknown to us or to those before us, on whom we depend for Medical history, characterized by new and strange symptoms, in some cases evidently depending for their existence upon a specific poison possessed of the power of multiplying itself in the living organism, in others prevailing by some mysterious epidemic constitution of the atmosphere or of the vital fluids.

Of these none is more remarkable than the subject of this dissertation

Asiatic

Asiatic Cholera a disease, which having its birth-place among the overcrowded populations of Eastern Asia, has marched with slow, unfailing step to the utmost confines of the West. And not once only, but several times have its ravages extended in the same direction, unchecked by Arctic Snows or Tropical Heat, baffling our skill, appalling in its fatality.

Once again it comes! Inexorable as ever, unconquerable as ever, we have noted its halting yet certain approach, until now its shadow is on our very threshold.

# Asiatic Cholera.

A local disease, called Cholera, has prevailed time out of mind, in the low and marshy districts of India. This local disease, possessed the common features of malarious affections, abounding in hot and wet seasons, disappearing on the accession of cold weather, and never extending beyond the locality whence it originated. One of its chief symptoms was an increased flow of bile whence its name. In 1817 at Jessore, a disease made its appearance, having many traits in common with the local affection, necessarily thereby confounded with it, but yet differing from it in many important particulars. It died

not

not confine itself to any locality, extending to places where Local Cholera was unknown, did not disappear with the hot and wet seasons, possessed the power of progression and self propagation, and was, moreover, alarmingly and rapidly fatal to the majority of those whom it attacked. This disorder is now known to the Profession and the World, as Asiatic, Epidemic, or Malignant Cholera. The word Cholera as applied to it is a misnomer, but the distinguishing adjectives are faithfully significant of its origin, and its widespreading and pernicious character.

From Jessore it radiated in every

every direction, travelling with various degrees of rapidity over the whole of Asia, thence into Europe by way of Russia, thence it passed over the Mediterranean into Africa and across the Channel into the British Isles. From Dublin, by the big Canicles, it was carried to Quebec, whence it spread west and south over the entire Western Continent. This course of travel occupied about fifteen years.

Such a disease, of necessity attracted to itself the attention of the Medical World, and the question at once arose as to its character. Was this terrible scourge, which having already devastated Asia, had reached

Moscow

Moscow, and was evidently on its way to the densely populated regions of Western Europe, a new disease? Opinion was divided and is to this day, some maintaining that from time immemorial, it has committed its ravages among the nations of Eastern Asia, others asserting that it is impossible for such a disorder, which since the year 1817 has spread itself eastward, westward northward, southward, as if borne by unseen travelers, climbing mountain ranges, crossing seas, and even traversing the vast expanse of the Atlantic, could have been pent up and isolated so long within the boundaries of those districts, wherein it is said

to have

to have prevailed. Be this as it may, it is practically true, a new disease, demanding whenever opportunity offers, the most earnest investigation and observation of its phenomena, in the hope that our beloved profession may, by the application of some of its many resources, be enabled to overcome the mortality which hitherto has been the inevitable result of its visitation. Let us study them in the light of the experience of accurate observers, its most striking

Symptoms and Characteristics.

In typical cases of an attack of cholera, three distinct stages may be recognised, - the premonitory -

the

the spasmodic and the stage of collapse. The premonitory stage is marked by more or less of diarrhoea, coolness of the surface of the body the feet or the hands, a general sense of lassitude and depression, pain and heat in the epigastric and umbilical regions, slight cramps in the muscles of the extremities, nausea and occasional vomiting of undigested matter, giddiness and pain in the head. The pulse is lessened in force, the evacuations gradually lose their natural appearance and assume a character which is regarded as pathognomonic, consisting of full and easy discharges of a fluid entirely free from bile-coloring,

white

whitish, and described by many medical observers as strongly resembling rice water, imperfectly strained milk whey, the washings of flesh or water slightly colored with milk. With in the countenance there lingers an indefinable expression of gloom – a shadow as it were of an impending disaster.

All of the foregoing symptoms are rarely present in any given case, but enough there generally are to give warning of the dangerous incoming poison. Their duration varies from a few hours to five or six days, until if not relieved they are followed by the more decided ones of the Phasmodic stage. These are, the sudden accession

of

of rapid copious vomitings and de-
-jections of the rice water fluid, violent
and frequent spasms of the abdomen,
the diaphragm and the extremities,
accompanied by burning heat and
intense pain in the epigastrium, a
small and concentrated pulse, the
countenance full of anxiety and suf-
-fering, and a thirst extreme and
urgent.

Upon these, if the disorder is
allowed to progress, the distinguishing
symptoms of Collapse rapidly super-
-vene. The vomiting and purging still
continue unabated, while under the
tremendous drain of fluids from the
system, the tissues of the body wash
visibly

visibly away. The most surprising alteration takes place in the course of a few moments – the features shrink fearfully – the eyes fall back in their orbits – the skin becomes corrugated and wrinkled. The blood when attempted to be drawn refuses to flow, but is cold, black and tarry. The circulation is extremely depressed. The beating of the heart is scarcely audible and the pulse is thready and almost imperceptible at the wrists. A dark blue tint pervades the face and the extremities, and the large superficial veins present the appearance of black bands under the skin. The respiration is laborious and convulsive. The air

as

as it issues from the chest feels cold, so does the tongue & the fingers, the whole surface of the body is like marble, and is covered with a viscid exudation of the same temperature. The urinary secretion is entirely suspended. The cramps increase in power, the parietes of the abdomen being frequently drawn forcibly back against the spine. The voice is entirely changed, becoming plaintive and whispering. The thirst is intolerable and water or ice is constantly craved. The mind, surprising to say, amid all this wreck of the powers of life, is but little impaired, the intellect is clear, and reason holds sway almost to the

last

last moments of life.

Such is the course of a typical case of Asiatic Cholera, but in actual practice the course is found to vary with each individual. Sometimes during the height of an invasion of the epidemic, or when the disorder is especially malignant, persons attacked are prostrated at once without warning with all the worst symptoms of spasm and collapse – "seized" – "struck down at a blow" – "frappés comme d'un coup de bâton" in the language of many patients in Paris. In view of a series of symptoms so grave one would naturally expect to find in the dead body lesions of a nature to

Corresponding

corresponding. What this is revealed by post mortem examinations in reference to the

Pathological Anatomy of Cholera.

Notwithstanding the strictest scrutiny by numerous observers it cannot be said that any positive and absolutely constant lesions have been discovered as characteristic of the disease. Of course after the termination of a disorder so profound, we find many and great alterations in the animal tissues, but none that may be called specific or pathological. There is great congestion of the venous system especially in the lungs, the liver, the kidneys, the spleen the brain and the spinal marrow. The

right

right cavities of the heart are also engorged with thick, black, blood, frequently of the consistence of jelly. The left cavities, as well as the arterial system at large are almost entirely deprived of blood. The intestinal canal is coated with a viscid, whitish, cream like matter, and is more or less filled with a serous fluid, of the character of that evacuated during life. The solitary and conglomerate glands of the mucous coat are much enlarged. The bladder is entirely empty, and is contracted into a small hard ball, lying just above the pubis. The liver is increased in volume, from its engorgement, the gall bladder is filled with dark, thick bile,

while

while the biliary ducts are much constricted or even altogether closed. The contractions of the muscles, and motions of the limbs are sometimes observed for a considerable time after death, and the internal heat continues long after the external has ceased. These are the most constant morbid appearances. From them however, taken into consideration with the symptoms of the disease, occurring during life, various theories have arisen as to its

<u>Cause and Nature</u>.

The most probable of these, and the one held by the majority of modern investigators, is that which considers as the cause of Asiatic Cholera, a

subtile and volatile animal poison, the developement of which is favored by certain conditions of the air and of the living organism. The morbific poison affects chiefly the digestive tract, and the nervous centres controlling it. A comparison of the symptoms and the post mortem appearances inevitably leads to this conclusion. On which the primary impression is made is yet a matter of hypothesis. It seems impossible to separate the affection of the spinal column from that of the alimentary canal, as their symptoms run hand in hand together. One circumstance which appears to favor the conjecture, that the poisonous influence is exerted primarily on the

on the nervous centre is, that in cases of extreme malignancy, those attacked have been known to sink at once, overwhelmed by the energy of the poison, no reaction taking place, and the mucous tract giving no signs of partaking of the disease.

Mode of Propagation.

No topic connected with the Cholera, has been the subject of more earnest discussion, than the mode of propagation. Is it contagious, that is, communicable from person to person, or is it caused by some deterioration of the air, the noxious qualities of which, are competent to produce the disease of themselves, without any derivation

from

from the disease, are already excited? Each of these propositions has its advocates. An immense amount of testimony has been, and can be arranged, corroborative of the one and the other, yet neither seems to explain many circumstances observed in connection with the production of Cholera. For instance a ship left Havre, bound for New Orleans. At neither place was there any Cholera, nor had there been any for a long time. Yet, twenty six days after sailing, the Cholera broke out on board of her, and on her arrival in New Orleans rapidly spread throughout the city, and thence through the whole valley of the Mississippi.

How

How can we reconcile this fact with either the doctrine of contagion, or of epidemic influence? Looking at Chol-
-era as it has generally prevailed, two things seem necessary for its spread, the existence of a specific poison or cause, and favorable conditions of the air and of the animal economy for its multiplication. As we know very little of the intimate cause, and have been enabled by repeated and care
-ful observations to attain some ac-
-quaintance with the modifying con-
-ditions, these latter acquire a para-
-mount importance, in consequence of the immediate bearing they have, upon the development and fatality of the disease.

All

All the causes of disease generally, all conditions which tend to lower the vital energy, whether they be of food, or drink, or air, or temperature, all undue exposure and indulgence, all noxious exhalations whether miasmatic, or generated by accumulations of filth, all depressing emotions or passions, act as exciting causes to the choleraic poison. Thus it is that in an epidemic the first violence of the attack always falls on the crowded quarters of poverty and vice. One class of persons, above all others are susceptible, those addicted to the intemperate use of alcoholic liquors. Recent observations go to show that elevation of locality exerts a remarkable

influence

influence, on the prevalence of cholera, it decreasing just in proportion as the elevation increases.

Prognosis

During the premonitory stage, and especially if the patient puts himself early under treatment, the disorder can generally be checked altogether, or so modified that danger will be avoided. When however the attack is malignant, or the premonitory symptoms are neglected, and the sufferer has reached the stage of spasm or collapse, the prognosis then is extremely unfavorable. We cannot pronounce certainly on the result, nor should we, while life lasts, ever cease in our efforts, to bring about

reaction

reaction, as instances are numerous in which persons have been rescued from the very mouth of the grave.

Treatment

On this point as well as on every other point connected with this disorder is opinion divided, and in no case have the drugs of the Pharmacopeia, and other resources of the Art been plied with such energy and perseverance. The modes of treatment are as various as the views that called them forth. Bleeding, calomel in small doses and in large, opium, strychnia, baths hot and cold, friction dry and unctuous, stimulants, electricity, ice to the spine, enemata, venous injections

-jections have each been vaunted, yet with about the same result. Of those subjected to a serious attack, one half & one third die. It is during the premonitory stage only that we can hope confidently for success from medication. The most important requirement in this stage is to check the diarrhoea which is present, keep the secretory organs at work, and enjoin rest and quiet until the threatened danger has passed. During the spasmodic stage diffusible stimulants and antispasmodics, such as ammoniated valerian, ether and chloroform are proper, at the same time, moderate and frequently repeated doses of acetate of lead

of lead and opium should be exhibited. It is claimed by many, that the acetate of lead in combination with opium and camphor, has exerted more marked control over the rice water discharges, than any other article of the Pharmacopeia. Calomel should be given in repeated doses with the hope of restoring the natural appearance of the discharges. It may be aided by the frictional inunction of mercurial oint-ment. As soon as the bile appears in the discharges, amendment may be looked for. If the patient has been of plethoric habit, before the onset of the disease, blood is to be taken from the arm, or by cups and leeches. In the stage of collapse, though apparently imperatively demanded,

stimulants

stimulants are not so beneficial as would be supposed. Anodyne and astringent enemata should be freely used – emollient and saline drinks, warm or cold, as they are more grateful to the patient, are to be allowed in any quantity that can be retained, in order to replace the fluids of the system, which are so rapidly drained away – sinapisms and hot pedeluvia – the warm bath – continued frictions – the free application of dry cups. As a last resort, we may try the injection of warm water into the veins. From this state of depression, recoveries are rare, but yet they have taken place. As remarked before, the early stage is the physician's hour, and

every

every effort should be made to impress upon the public at large, the importance of attending to the very first manifestations of the disease, when an epidemic is abroad. An hour may then be the turning point of life or death.

Measures of Prevention.

These include all the hygienical rules to be observed in maintaining the system in full and vigorous working order, under the ordinary conditions of life. The necessity of a strict observance is doubled, when the pernicious influence of such a scourge as cholera is around us. Before concluding, I would briefly refer to an important paper on propagation of this disease, and the

necessary

necessary regulations to be adopted to prevent its spread, which has recently been laid before the Health Commissioners of New York, by Dr Chas. A. Lee, of the University of Buffalo. He believes the disease to be portable, but not to be contagious as the word is commonly accepted. Moreover that the discharges, are the source and seat of the poison. That persons not seriously affected, may travel from place to place, leaving behind them in water closets used, the germs of a deadly epidemic. From this belief he deduces the following lessons, which whether his theory is true or not, are nevertheless practical and important.

"Quarantine regulations cannot be too rigidly

rigidly enforced.

The most thorough sanitary measures must be carried out in all places exposed to the disease especially in large cities where all cess-pools, drains, alleys, &c should be thoroughly cleaned and disinfected.

All intercourse with infected places, to be absolutely prohibited, or most strictly guarded and watched.

Should the disease be introduced into any place, cholera discharges are never to be emptied into water closets in common use.

The police are to be instructed to pour into every privy and water-closet, suitable disinfectants for the purpose.

or

regard it to be done."

The coming summer is looked forward to by us all with anxiety. If the Cholera should come, I trust we may be able, by careful and intelligent observation, to remove the doubt and mystery which still envelop every point connected with this remarkable disease.

Alexander H. McLeod.

Baltimore. Md
Feby 15th 1866

An
Essay on

# Physical Impracticability.

Submitted to

The Provost, Regents & Faculty of the University of Md.
for the

Degree of Doctor of Medicine.

by
Irving St. Rose
of
Maryland.
1866.

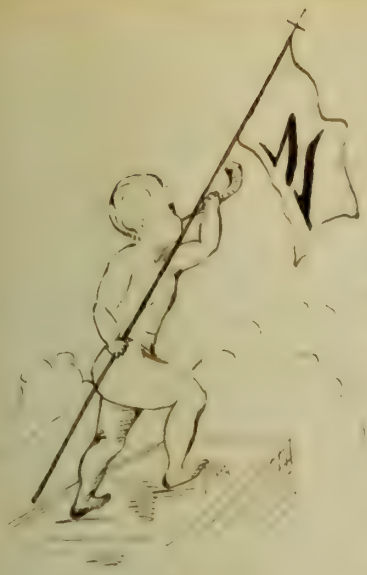
To

Christopher Johnston M.D.

Prof. of Anatomy & Physiology
in the
University of Maryland.

This Essay is Inscribed
By

The Author.



Edicine has been defined as the Science which treats of the Cause, prevention, Alleviation and Cure of disease and the physical perfection of man.

When we speak of a person being physically perfect we mean that he has all his powers, faculties or qualities entire and in full vigor, and all his parts in due proportion. It is evident to the most common observer that few persons come fully up to the standard mentioned in this definition: but a great deal can be done in the way of accomplishing it by Education and proper training. I shall therefore

confine my remarks to the subject of physical improvability.

The trite maxim, "Orandum est ut sit mens sana in corpore sano" can hardly be quoted too often; since, though none probably will deny its truth, yet there are very many who will not act upon the precepts that such an ~~principle~~ observation ought to inculcate. We read in Pascal: "La première chose qui s'offre à l'homme quand il se regard, c'est son corps, c'est-à-dire une certaine portion de matière qui lui est propre." Now this portion of matter which is appropriated to man, when we come to regard it, presents for our consideration many arcana — curious, hidden, mysterious secrets with which we are not acquainted.

Not the least curious of the powers or qualities of the human body is physical strength — a quality which has of late years not only become an essential part of the popular ideal, but is the object of a widely spread popular desire. All the younger generation of writers has for many years past been trying to excite & foster the sentiment that power of character in all its shapes goes with goodness, and that there is so intimate a connexion between the various departments of life physical & moral that strength of mind may be expected to be closely connected with, or may perhaps be said to be reflected in strength of body. This notion is closely connected with many of the most important of

the opinions which are at present entertained respecting the great standard controversies of life. It is connected with what may be called the social as opposed to the ascetic conception of morals, & with the disposition to look upon life as a whole, as opposed to the temptation — if it is so to be regarded — to cut it in parts, of which some only are susceptible of sacred associations, whilst others are and must always remain common & unclean. The body may obviously be looked upon in two lights. It may be regarded as an essential part of the man — as the outward & visible part of himself, containing & constituting, with its various powers and qualities, some of the most important elements of his character.

On the other hand it may be regarded as radically distinct from the man himself — a mere material instrument of the immaterial essence which properly constitutes the individual — a sort of clog, necessary indeed to the action of the soul, but in its essence a mere appendage to it, & a somewhat degrading one. There can be little doubt which of these two is the popular view in the present day. Almost every popular writer delights to make the body not the agent but the partner of the mind, and each accordingly invests his hero with every imaginable bodily perfection. To attempt to discuss which of the two views of the relations of mind and

[body

just stated not contains the greatest amount of truth and least nonsense, far indeed. The relations of mind & body are a question of fact, to be studied not in the light of any preconceived theory whatever, but like all other questions of fact by observation & comparison.

But this is getting too desultory. We shall turn aside from this subject upon which so much can be said, and come more to the point.

It is a common error to suppose a fate or destiny uncontrolable by one's own forces, and when one speaks of the physical improvement of the human race in any other than the most general terms, he seems to a majority of minds

to have left the sphere of practical realities, & to be indulging in fanciful speculation. But it can be assumed that really & practically man is physically the arbiter of his own destiny.

The first thing that suggests itself is the possibility of breeding up to a type or standard. Experience has taught us that the improvement of animals (organised beings, the same in substance & structure as ourselves) are entirely under our control. We have tried our experience upon horses & dogs, upon cows, oxen & fowls; upon apples, peaches & pears, and upon flowers. We can speak of our control over these, how we can order their propagation & development; but we have

almost totally neglected our own noble race. To be sure we have not the same control over the conditions on which improvement depends & we cannot determine the circumstances under which conception & gestation shall take place in dealing with the human subject; but we can address ourselves to their intelligence & impress upon their minds the importance of the germinal principle & of the original direction given to the ~~[illegible]~~ vital forces in reproduction. We wish to give prominence to another important fact; that it lies within the range of possibility to pursue systematic bodily culture so far as to modify the shape of body & limbs, cure disease or deformity, & promote health & happiness.

are we not responsible to a much greater extent than we imagine for our physical condition? After making all abatement for unsurmountable hereditary influences — after granting, to that Jonnerself law of genealogical transmission its proper weight — after admitting the seemingly capricious facts of what the modern French physiologists call atavism, under which we are made drunkards or consumptives, lunatics or wise men, short or tall, because of certain predominant traits in some remote ancestor — after admitting all this, does not nature leave it largely in our power to counteract both physical & moral tendencies, & to mould the body as well as the mind, if we will only put forth in action the [requisite energy & will?

It is everywhere the indwelling life that determines the outward forms of things. It may be said that it is the soul shapes the body & not the body the soul. The outer or physical man is then but an image or material representation of the inner or spiritual man. There exists in man a mysterious something, which for want of a better name we will call the vital force, which forms the connecting link between "mind & matter". But it would carry us too far to discuss the abstract question of the soul's connexion with the body or to investigate the mode of its action upon it.

We have familiar instances of development & strength in different parts of the body, & brain where this force has been brought to

bear.

Where the arm is vigorously exercised a stronger ~~current~~ tending of these vital currents is induced to that organ & we have an increase in development & size. That this influence is applicable to the brain & body we are perfectly well aware; and it is equally sure that it can be applied to fœtal life. The soul of the mother is the governing principle which determines the final character & form of the human ovum. Every thought which flashes through her mind; every emotion no matter how transitory; every impression from external objects affects, in a greater or less degree, the fœtal being. Intense grief, violent anger, or uncontroled terror may cause its destruction or mar irretrievably its symetry, both of character & form. The phenomena called *nævi materni*,

So often falling under the observation of medical men illustrates very conclusively the influence of the mother's mental impressions upon the unborn child. These impressions are interwoven with the very texture of the unborn being. These images whether of beauty or deformity are reflected from the maternal soul & truthfully photographed upon the unconscious embryo.

With birth the direct psychical influence of the mother ceases; but impressions acting upon the mind are scarcely less powerful now than before birth. In studying out the relations of mother & son we find that the sons are greatly influenced by their mothers: that where they are great men the greatness is derived from the

[Mother's side.

In fact, the mothers of great men are generally superior persons. An examination of this fact might throw valuable light on many psychological questions. We cannot but blame the sad want of pitiful of biographers in not speaking of the mothers of heroes. The mothers of St. Augustine (and Napoleon) had direct & traceable influence on their greatness. Augustine was a very remarkable man & Monica a very remarkable woman; but the son owed to the mother the direction of his thoughts, the purpose of his life, & the source of his greatest enjoyment. In a similar way we can trace the clear affinity between the character & mental constitution of Napoleon & those of his mother, who while pregnant with him, shared with her husband, & frequently on horseback, the dangers of a military campaign. There was the same

stubbornness, the same largeness of thought, the same resolute determination to enforce the burden of their own personal ascendency on all around them. The same connexion is traceable between the character & career of John Wesley & the influence of his mother. The stern piety, the active ardent affection, & the substantial though limited good sense of the mother were reflected in the son. Every American at once thinks of "Mary the mother of Washington" — a striking illustration of high-toned qualities being communicated to the son. It is a common remark that certain qualities descend through the mother; and everyone's experience will immediately bring to his memory several instances that corroborate this. But it is unnecessary to digress further or to multiply facts. It is no

Imperical proposition but a certain fact that the first step towards physical perfection must be pre-natal. Under this head we might gain some thing from the agriculturist or scientific cattle-breeder. They act upon the principle that "a corrupt tree bringeth forth corrupt fruit". We know that certain chronic diseases will inevitably ~~bring~~ affect offspring generated during its existence. Syphilis, Scrofula, & the tuberculous diathesis we know do; & conditions of health & vigor in the physical system are equally transmissible.

We come now to speak of a more obvious means of action upon the system, that of physical culture or the development of strength by which we beget increased ability to resist & overcome all fleshly ailments, pains & infirmities. A celebrated athlete (Dr. Winship) whose opinion (on this subject) is entitled

to some respect, says his experience has so fully confirmed the fact that if he was called on to condense the proposition which sums it up into a formula it would be in these words; Strength is Health. What do we mean by strong? We hear of strong men dying early from a short illness & delicate women living long who are most always sick. Where or in what does this strength reside? Some will say it is the "constitution"; but this word only points out a difficulty, which it does not solve. The difficulty of saying what is meant by physical strength lies in the difficulty of distinguishing between the mechanical & vital powers of the body. What is that something? The whole subject is one of sudden wonder & curiosity & is well deserving of far more notice than it has usually received. The power of supporting hardship

is one form of strength, but it is not invariably associated with great muscular force & not unfrequently accompanies nervous delicacy of organisation. Dr. Kane was a wonderful instance of this. Though a professional sailor he never went to sea without sea-sickness. He had both disease of the heart & chronic rheumatism, yet he underwent sufferings in the Arctic Seas under which the strongest men, specially trained to endure such hardships, sickened & died. In great calamities, shipwrecks & sieges, retreats of defeated armies the finest men do not always endure best. Women sometimes go through more than anyone else. We have heard of Indian women, accompanying a travelling train, who would fall behind for a short time, be delivered of a child & overtake the train

before it had passed many miles. Cases are related of negro women in the South relaxing suddenly from their work in the fields, to some secluded spot, going through with the parturient act, and returning to work as if nothing had happened. Some writer has stated in support of physical strength that "great power of endurance is quite consistent with extreme delicacy & with presence of & predisposition to organic disease." We doubt very much the correctness of this assertion as our experience confirms nothing of the kind & we cannot conceive of strength existing along with delicacy & disease unless it be under some peculiar pathological circumstances such as tetanus, delirium or something of the kind. This power ~~of endurance~~ in one direction does not always imply its existence in another. There are instances of men going

through with extraordinary muscular labor & putting up with all sorts of exposure & hardships to be unequal to prolonged severe exertion of the eyes, the brain or the nerves; and the converse of this is equally true.

Now, we will suppose a man in search of physical culture. How is it to be obtained? How is he to improve & preserve his physique? It can be summed up principally in a few words; "Air Exercise & Regimen."

Air, the first & last demand of our lives, the incessant inhalation of which maintains our systems, deserves a passing consideration. In order to get full benefit from this life giving agent, it is necessary to be frequently in the open air, to sleep with our windows open all the year round, & to "shun bad air as we would poison

We might also mention the value of solar light upon the physical system. By the deprivation of this agent human beings become like plants grown in a cellar or any other dark or shady place; they are more subject to cutaneous and scrofulous diseases, and altogether they present a pale & sickly appearance. This is evident in persons confined in dark places such as prisons, mines etc. We have heard some very sensible remarks upon this subject from our worthy professor of Surgery. A certain amount of exposure to the rays of the sun then is necessary for the development & preservation of our bodies.
A case of dyspepsia is related as having occurred in the person of a clergyman, which baffled every kind of treatment; but finally yielded after the abandonment of all medicines & the

Exposure of the patient's body to the light of the Sun, which is accomplished by stripping himself, with the exception of his drawers, & working daily with a hoe in a small flower garden. Most cases of dyspepsia could be cured by generous exposure to light, in conjunction with other hygienic means, but the generality of patients thus afflicted prefer buying all the nauseating drugs of the pharmacopeia to making any effort in this direction.

Exercise forms a most efficient means of bodily culture, developing the muscles, imparting activity & grace, increasing bodily strength, curing disease & promoting health. Indeed it is a false system of education not to develop the body & mind harmoniously. The great fault of most our Schools is that they do not have any regular

mode of physical education. The only school where anything like an effective system of physical education is carried out is the Military Academy at West Point. The pupils of that institution are generally athletic. They have fine chests & shoulders, a graceful carriage & are among the finest specimens of manhood. The results of this system speak for themselves when we ask who are the men that have been the heroes for the last four years!

But we desire to speak of this subject in a different light; its influence upon the mind & body. A person who is in the habit of taking exercise generally has a good digestion, his attention is more ready & his perception more acute. It makes one more courageous & less liable to be affected by the vicissitudes of life no matter how dark,

unfortunate or melancholy they may be. It is here that the "force of prevention" comes in. The nervous system can also be completely renovated by a course of gymnastic training. The case of Carnaro is almost too familiar to be mentioned or it might here be adduced as an instance. It also has the effect of taking away morbid appetites & is a prompt & agreeable remedy in neuralgia, rheumatic & gouty affections.

There are many ways of taking exercise most of which exert a beneficial effect upon the three grand sources of vitality; digestive, respiratory & nervous apparatuses; but the best one undoubtedly for the general health is the course submitted to by the professional pugilist called training. There is so much though in the modern proceedings of the ring with its coarse & brutal adjuncts, which nobody can defend & much more

which many will dislike, that sensitive natures shrink from the idea of training with intense disgust. It may surprise some persons but it is nevertheless true that they furnish an example which deserves to be generally imitated — temperance, sobriety, & chastity are the first principles of the trainer. Indeed the leading rules which guide the judicious trainer may be found in the New Testament. They are frequently forgotten by the candidate for literary, scientific or forensic honors. The mass of mankind who indulge in excesses of every kind — in too much eating, drinking, sleeping, sloth, smoking, etc, — says a little book on Boxing — would go through the task of life, would discharge their duties much better, far quicker, & with greater ease to themselves, did they submit to training.

It is not demanded of professional men that they should train vigorously like the boxer; their occupations would not allow it, but imitate his mod of training, as far as circumstances allow. The systematic exercises of the gymnasium, when properly conducted, are unsurpassed as a means of development. Who does not envy the strength of Winship or the beautiful physique of the Hanlons? But one must not make a speciality of any feat. One man lifts a ton, another turns forty somersets without stopping & another contorts himself after the manner of an India rubber man. Now, no two of these could do the same feat. It is by a judicious combination, that ~~the greatest good is to be accomplished~~

~~This~~ ~~should~~ which should be so ordered as to secure strength of muscle, activity of limb & grace of motion, that the greatest good is to be accomplished. We must bear, lift, fence & tumble, if we wish to derive full benefit from these exercises. As an adjunct to training we might mention the use of the cold bath. It is useful principally for the re-action it produces & its tonic effects. Properly applied it acts as one of the most powerful tonics in the Materia Medica & is of inestimable value in an untold number of diseases. A rational & methodical use of these & the other essentials of life constitute what we call regimen, of which we now come to speak. The first thing I am prompted to write is, "Restrain the passions lawful not." Self-preservation being the

first ordinance of nature, it is evident that we cannot indulge in inordinate sexual excesses, drunkenness, gluttony, &c, without bringing on premature debility & decay of the constitution. When a man simply follows the promptings of nature, the desire for sexual intercourse is limited & moderately enjoyed is no doubt beneficial to health. The saying that, "happiness has been a train", is very true in this respect, else why did the Creator implant in his Creatures the power of reproduction, this the greatest & acutest of all animal gratifications?

Drunkenness & gluttony, also make sad inroads into the constitution — evils the very mention of which would require more space than we can allot to them. How easy

it is, by the exercise of a little self control, to prevent it! We do not denounce the pleasures of the table; we are not enemies of "wine & good cheer" — far from it. On the contrary, we patronize them, Eat pretty much what you please, provided it be wholesome & does not disagree with you. Enjoy the pleasures of the table like a man & not like a wallowing Swine. The use of wine & the good things of the table on convivial occasions cannot be complained of, but their abuse. When enjoyed moderately they are a most cheering luxury of life. They lead to mirth, wit, good fellowship — they open the best valves of the soul, letting escape generosity, friendship, kind feeling, & all the better properties of our nature;

they are the centre of reunions around which our flock the best, gayest, & brightest spirits of each succeeding age. The use of wine on certain festive occasions becomes almost indispensable, temperance lectures to the contrary, notwithstanding. We read in the Bible of the miraculous change of the water into wine at the wedding feast by the great Founder of our faith. This is a conclusive argument against "Cold water entertainments." — But the better judgment of man being so little subservient to his reason is it not better to abstain altogether from the use of ardent Spirits?

Probably one of the best rules we have yet mentioned for ~~other~~ preserving

& promoting health, and which properly comes under the head of regimen, is to avoid the indiscriminate use of medicine. A person is suffering from slight indigestion, a disordered stomach or some other transient affection which time, the vis medicatrix naturae, or a little exercise in the open air, in conjunction with a cold bath, would soon cure, and instead of pursuing the plan most consistent with reason & common sense he has recourse to a list of nasty, sickening drugs, vainly imagining that they can take the place of the conditions of health. Such a beginning, as this has been the cause of many a man's physical degeneracy & downfall. Even physicians

are too much in the habit of treating disease upon the presumption that it consists in change of structure rather than alteration in power or vital force. Suppose we were to take a healthy man, confine him to a bed in one of the wards of our hospitals, & subject him to the means usually adopted to the cure of fever. — What would be the consequence?

The Mind is the great thing, after all, that ministers to the health of body, and, as the brain derives due share from muscular exercise, so it contributes by way of reciprocity to the full enjoyment of physical health. Some knowledge of the relations of mental philosophy to medicine must be of infinite value to our profession. For instance, what a train of diseases is caused simply by anxiety of mind. The subject is far too copious for this place & unfitted for the occasion.

It was much adduced to show the intimate connexion between mental & physical Education.

It should be the strenuous endeavor of every follower of our Science — a Science which has more for its object than the application of remedies to a few special diseases — to inculcate the enlarged & more comprehensive idea of promoting health, & preserving the bodily frame in the full & vigorous exercise of all its functions.

Let us go on then with the good work. The Bible tells us that "the glory of a young man consists in his strength," & again that our bodies are the "temples of the Holy Ghost." If this be true, let us spend a great part of our time in cultivating & bringing them to perfection.

Irving L. Rosse.

AN

# Inaugural Dissertation

ON

## Early Phthisis

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

**PHYSIC,**

of the

**UNIVERSITY OF MARYLAND,**

FOR THE DEGREE OF

## Doctor of Medicine,

by

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of

Hagerstown Maryland

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Early Phthisis. Few diseases have been regarded with more dread both by patient and physician than those arising from a deposit of tuberculous exudation in any part of the system, and this is especially true when the lungs are the seat of such deposit. It spares neither age, sex, or condition, attacking alike the affluent and the needy. Considering the fatality of Pulmonary Tuberculosis, — that it has been the recognized cause of one sixth of the annual deaths, and the fearful list of suffering that it entails upon those who are its victims, well might it be regarded with dread;

and its approach recognized as a summons to the grave.

After the disease has made some progress medicine may do much to alleviate pain and suffering, but in the majority of instances the efforts of the physician and the kindly interference of Nature will prove but futile. In the incipiency of the disease however, before much mischief has been done in the substance of the lung, much may be done to prevent its further progress, and in some instances we believe a perfect restoration to health may be effected. Hence arises the necessity for appreciating the condition of the patient

at such time when Nature, aided by her servant the Physician, may be able to bring about a reparative process. That she does so spontaneously at times, we have every reason to believe, not only from such knowledge of the disease as we possess, but also from positive results to that effect. It will be my effort in the following pages to state briefly

1st The nature and causes of the tuberculous deposit, and the changes which it subsequently undergoes;

2d The conclusions of observers as to the fact that Nature often effects a spontaneous cure;

3d. The rational symptoms and

physical signs of the disease in its early stage; and

4th The means best adapted to prevent or arrest its further development.

1st. The nature and causes of Phthisis, and the changes which it subsequently undergoes. It has been proven that it is an exudation of the liquor sanguinis, but one presenting many differences from the simple inflammatory exudation, and from the cancerous deposit. Simple inflammation may occur at any age; may attack any tissue and may occur with greater or less rapidity. Its tendency, in the acute form, is towards all formations which undergo a

natural process and are absorbed and excreted; that of the chronic character is to produce fibrous formations and adhesions.

The cancerous exudation occurs mostly in persons of advanced age, scarcely attacking one before before adult life; it also may occur in any tissue, but attacks preferably glandular or fatty organs, and affects the lymphatic glands secondarily;— its progress is slow, and its tendency towards the most perfect form of cell-life.

Tuberculous exudation, on the contrary, affects more commonly young subjects; and is comparatively rare in adult life. It is preëminently a disorder

of childhood and youth, attacking the system at such a time when nutrition is directed to the building up of the tissues of the body. Like simpler inflammation, it may occur in all tissues, but shows great preference primarily for the lymphatic glands, and after those for the lungs and serous surfaces; its progress is generally very slow, and there is no disposition to ulcer-formation, but on the contrary it occurs in amorphous masses, which slowly break down, and with no tendency to absorption. Moreover, every change which takes place is preceded by changes of disorder in the digestive apparatus—

The following is said to be the chemical nature of Tubercle -

"1st Tubercle consists of animal matter mixed with the earthy salts -

2d. The relative proportion of these vary in different specimens of tubercle - Animal matter is most abundant in recent, and earthy salts in chronic tubercle.

3d. The animal matter certainly contains a large amount of albumen. Fibrin exists in small but variable proportion, as a constituent of tubercle -

4th. The Earthy salts are principally composed of the insoluble phosphate and carbonate of lime, with a small proportion of the soluble salts of soda -

5th. very little difference in ultimate

composition has yet been detected between recent tubercles, and the other so called compounds of protein."
"The cells which fill up the air-vesicles and make up the tubercles, are nothing else than epithelial cells, which swell by imbibition of plastic matter, enlarge, and are detached from the wall of the air vesicle. If tubercles be examined in a somewhat farther advanced stage, when they show more tendency to softening, the larger cells are found in much less quantity and in place of them, the air-vesicle is filled with smaller cells."
As soon as the tubercular deposit takes place, the lung around it becomes

coagulated and after some time, thickened and hardened; while the deposit itself either softens, or undergoes calcareous degeneration. The inevitable tendency of tuberculous matter, when once deposited in the lungs, is always to deliquescence. This softening which is the result of its being exposed to heat and moisture, commences at or near the centre. The tubercle itself can not inflame or ulcerate, because it is an amorphous mass without vitality and receives no nourishment, but acting as a local irritant upon the lung structure immediately in contact with it, produces in it inflammation and ulceration: resulting from this

opening is formed into a neighboring bronchus, the matter generally is expectorated and a cavity thus formed. This cavity may now become filled with organizable lymph, cicatrize, and thus it may partially, and in some instances completely heal — In a large number of cases, however, unfortunately for the patient, a fresh deposit of tubercular matter may take place in the tissue surrounding the cavity, and this deposit in its turn undergoing similar changes, new cavities will be formed until the lung substance is so far destroyed that it can no longer carry on the function of respiration, and the patient dies —

On the other hand, after the tubercular matter has softened and become sufficiently fluid for that purpose, the fluid portion may be absorbed, leaving behind the fatty and calcareous ingredients, thus constituting what is called calcareous degeneration.

The lung tissue itself now undergoes pigmental degeneration, and in this condition remains tolerant of the foreign mass which now ceases to exert any farther influence upon the lung.

The causes of tubercular exudation may be divided into predisposing and exciting. The former may be classed with all those causes which depress the vital powers, and in that way interfere with

proper digestion. Phthisis is in fact primarily a disease of digestion. If this process is interfered with, feeble and improper development of the body and of the nutritive functions necessarily supervenes. Frequently the disease is found in those whose parents have been similarly affected, indeed, its hereditary nature is a fact well established. Few children, we think are ever born with tubercles already deposited in any part of their body, but the nature of the scrofulous parents is so strongly impressed upon the organism of the child that perfect and healthy development can not ensue, and the predisposition to tubercle is thus strongly

favored. As already stated, the predisposing causes of Phthisis may be recognized as those which interfere with perfect digestion and assimilation.
The exciting causes are such as tend to produce congestion of the lungs, and subsequent exudation;— and prominent among these, perhaps the most frequent, are the vicissitudes of weather, &c.—
The exudation once being poured out, it is necessary for its development that it should be supplied with healthy blood, now this is the very element which the phthisical patient does not possess, and hence the exudation, instead of observing the usual healthy change, follows the course previously described.—

2d. The conclusions of observers as to the fact that Nature often effects a spontaneous cure.

An able Pathologist, who made 2000 post mortem examinations in the course of five years observes, "that gradually one great fact became impressed upon his mind; viz., that all organic diseases occasionally presented a tendency to spontaneous cure;.... and in no organs were such appearances more common than in the lungs, and of no disease was evidence of spontaneous cure more frequent than of Pulmonary Tuberculosis."

As additional testimony to these remarks, it has been proven that persons who at one time had all the general

symptoms and physical signs of the disease have recovered their health and strength and subsequently died from other causes. Dr. Cromwell states that pathological anatomy has perhaps never offered more conclusive evidence in proof of the curability of disease, than it has in that of Tubercular Phthisis."

In support of these assertions I have taken the privilege of reporting the following cases from Dr. Bennett's admirable work on "Pulmonary Tuberculosis."

"Case I. Advanced Phthisis; Restoration to health; death many years afterwards from Delirium Tremens; on dissection, a cicatrix three inches long, in the apex of right lung, and cretaceous concretions, with puckering at the summit of left lung."

"Case II. Advanced Phthisis; General Heart Disease; Death 15 months afterwards from Typhus Fever; On Dissection two Cavities in the Left Lung, contracted and healing; in the Right Lung Extensive Consolidation, Puckering, and Incipient Emphysema.

Robert Elliot, aet. 28, was admitted into the clinical ward, No. 2 of the Royal Infirmary, Dec. 30, 1844. On admission he was much emaciated, and there were all the symptoms of phthisis in its advanced stage. On percussion there was dullness under both clavicles, but to a greater extent on the left than on the right side. Under the left clavicle, and posteriorly along the scapula, there was loud gurgling râle, with imperfect pectoriloquy. On the right side, there was occasional sibilant râle; harshness of inspiratory, and

prolongation of expiratory murmur, with bronchophony. He took cod-liver oil readily, and was treated in addition, with numerous remedies to meet occasional symptoms, more especially diarrhoea and laryngophysis. He left the Infirmary March 11, 1845 conceiving himself to be nearly well. His strength and general appearance had greatly improved, the physical signs on the right side were unaltered; but on the left, gurgling râles had been for some time absent, and been replaced by dry blowing sounds. Some months afterwards, he applied at the Royal Dispensary for some cod-liver oil and was supplied with it regularly for a considerable time. He entered the Infirmary on two separate occasions subsequently under different physicians, and was

discharged in his own opinion well. In the summer of 1846 I was requested by one of the Dispensary pupils to visit one of his patients affected with fever. It was this man Elliot, in a state of complete coma, and with the usual symptoms of Typhus. I gave directions for conveying him to the Infirmary, but before this could be carried into effect, he died.

Post-Mortem Examination. The chest only was examined. The pleura covering the apex of the right lung were very slightly adherent. The summit of the lung itself was deeply corrugated and puckered, and felt hard and nodulated. On being bisected it was found to contain numerous caseous masses, several of them enclosed

within an indurated cyst of greyish fibrous matter. The surrounding lung was condensed, puckered, and coarse with black pigment; and the spongy substance in the neighbourhood of the indurated portions presented numerous enlarged air-cells in short, incipient Emphysema. The left lung presented two distinct stellate puckerings — one at the summit of the lung, the other two inches below. Both these puckerings corresponded to a distinct oval cavity. They both possessed a distinct lining wall, and were surrounded by an indurated capsule, connected with radiating cicatrisations in the pulmonary tissue. In the upper one this was very distinct." These cases, I think, so far to prove that Consumption is not wholly incurable.

3d. The rational symptoms and physical signs of Phthisis in the Early Stage.

It is at this time, before much deposit has occurred in the lungs, that the physician's efforts to get rid of that already there may be most successful, and hence arises the necessity for appreciating the condition of the patient at this time.

In a vast majority of cases the favorable opportunity for early treatment will pass by, and the attention of the physician will be directed to the condition of the patient's lungs only on the occurrence of some other malady.

Among the symptoms may be enumerated loss of appetite with accompanying disorder of the digestive and assimilative

functions. Following this is progressive emaciation; cough supervenes, and is a mark of much importance. It may arise from a variety of causes, but if it be of a short, dry, hacking nature, and sufficiently intense to attract the attention of the patient or physician, the lungs should immediately be examined. The sputum sometimes offers strong indication of the presence of the disease. "The appearance of pus in the expectoration is almost conclusive evidence of phthisis, for they are scarcely ever met with in simple bronchitis; and this is further confirmed if in examining the sputum microscopically we discover in it the sharply defined, curled dichotomously

divided, elastic fibres, belonging to the walls of the air-cells."

Hæmorrhage is often the first symptom which causes much alarm. It rarely, however, precedes the cough and expectoration; and if it be determined that it is not vicarious (if the patient be a female), or is not the result of injury to the chest, it offers very strong evidence in favor of the presence of tubercles.

The pulse must not be overlooked, as it often offers an important diagnostic mark. If, on more than one examination, it be found to continue hard and accelerated, without any symptoms of local disorder, it is to be regarded with much suspicion as that alone often indicates a

commencing tuberculous exudation in the lung. If a physical examination be made, and the following signs be present, the diagnosis of tuberculous disease is positive; impaired resonance or dullness on percussion, at the apex of the lung, under the clavicle; On auscultation, the respiratory murmur is heard more clearly than natural; there is harsh respiration, prolonged expiration, pulmonary crackling, and sub-clavian murmurs at the commencement of breaking up of the tubercle, the sub crepitant râle is heard - Auscultation of the voice reveals bronchophony.

The impaired resonance may indicate a variety of pathological conditions, but occurring at the apex of either

lung, and in connection with other signs and symptoms, it can generally be traced to its proper cause -
To what is the harsh respiration due? It occurs chiefly at the summit of one or both sides of the chest, being due to thickening of the walls of the air-cells, the density of the pulmonary structure being increased by the deposit of crude tubercles. If it continue, and coëxist with impaired resonance, it is an almost certain indication of phthisis in its first stage -
The prolonged expiration is a sign of exceedingly great importance, appearing often before any other change in the

respiratory murmur, and occupying preferably the apex of the lung. It is observed permanently, and is more reliable as a diagnostic mark than any other single indication afforded by physical examination. Pulmonary crackling is important. Its name conveys the idea of the nature of the sound. It is heard only during inspiration, and its location is similar to that of other signs indicating tubercular disease of the lungs, in the early stage. It is rendered a sign of much importance being met with only at the commencement of pulmonary phthisis. If broncophony occurs under the

clavicle in one who has suffered from Haemorrhysis, progressive emaciation &c., the induration causing it depends on the deposit of crude tubercle. If all the above symptoms be present, and the signs be clearly made out, you may feel pretty sure that a diagnosis of Tubercular Phthisis will be correct.

4th. The means best adapted to prevent or arrest the further development of the disease.

Special medication can do little to remove the exudation already present and prevent farther exudation; but it is from hygienic treatment that our patient must be relieved, if relief

can come to him. If it be, as we believe, a disease of primary digestion and assimilation, every thing accordingly must be done to improve this function. The lungs themselves require only secondary consideration. Every thing that promotes digestion must be encouraged. In infancy all irritating causes must be removed. Pure milk must be furnished the child until the growth of the teeth warns us that it is able to digest articles of a stronger nature. Its mental powers should not be overtaxed, but all its energies should be devoted to its

physical development and growth.
To obtain pure, fresh air, are deem the first consideration in the treatment of consumptive patients. At least eight hours of the day should be spent out doors, and a large part of that time should be occupied in active, healthful exercise. This meets two indications in the treatment. In the first place it tends much to improve the digestion and in the second place, it supplies the lungs with that article which is absolutely necessary to their healthy action, and this article is a free supply of oxygen.
A uniform climate is very necessary.

We have seen, in a former page, that no exciting cause acts so favorably to its production as vicissitudes of weather, and hence nothing can act so powerfully to maintain the presence of the disease. It has been proven that neither a warm or cold climate is that in which the consumptive fares best, but it is one which is most free from changes, and this is the climate the afflicted should seek, provided always he possesses the power to do so, and can procure those home comforts which are so necessary to the invalid. If he be compelled to remain in a climate such as ours, he should

persistently observe the rules as to his exercise, and not permit an overclouded sky or a slight rain to deprive him of his accustomed walk or ride.

The business of an indoor nature, as far as possible, should be suspended, and the patient should endeavor to exchange it for one that will enable him to be more in the open air. Again, if his occupation be of such a nature that offending particles are constantly being inhaled, it should be discontinued, for to one persisting thus the physician can offer little encouragement.

The diet of every consumptive should

be of the most unirritating and nutritious nature, and of easy assimilation. It should contain a large abundance of fatty matter which should be taken regularly and persistently. Cod-liver oil is an article which partakes more of the nature of food than medicine, and forms an important and almost indispensable agent in the treatment. With a strict observance of these principles, the symptoms may decline and hence require little special medication. This, however, is sometimes absolutely necessary. For instance the cough may be of such a nature that it interferes with sleep, and

then is a source of great injury. During sleep the reparative process is most active and it should be encouraged, and any thing which interferes with it necessarily interferes with the general health. To allay cough an opiate may be given at bed-time, and continued until the patient can rest without it. Ventilation must not be overlooked, "for an impure air excites cough by its direct effect on the mucous surfaces of the air-passages; and further, when air laden with carbonic acid is inhaled the chemical changes of respiration are checked, the pulmonic circuit is embarrassed, and

congestion of the lungs is an inevitable result. This is another exciting cause of cough and expectoration."

Expectorants are deem of little value. The benefit they do the lungs is generally more than counterbalanced by the injury they cause to the digestive apparatus.

Hemorrhage is an alarming symptom and is often of such a nature that it calls for positive interference. This too is generally best remedied by improving the general health, and to endeavor to overcome it by any lowering plan is hardly rational. Gallic and tannic acid, acetate of lead, and other astringent and sedative agents

may be of temporary benefit, and their employment is often necessary.

Such are believe the best means for the relief of the consumptive patient. He should not be encouraged to place much reliance in the efficacy of drugs, for the fewer articles of this class he takes, the better; but he should be strongly impressed with the truth that his best medicine is found in the purest air he can obtain, for without this all the drugs he can procure will do him little good.

By discovering the condition of the patient at as early a date in the disease as possible, and treating him according to the above plan, we think much as yet may be done to relieve his condition and in many instances, restore him to health.