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INAUGURAL DISSERTATION

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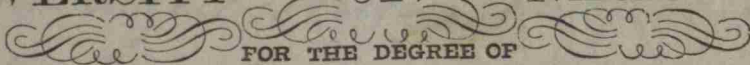
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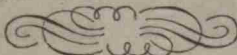
PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY

OF THE

UNIVERSITY OF NASHVILLE,



FOR THE DEGREE OF



DOCTOR OF MEDICINE.

BY

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OF

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Very good indeed.

In examining the Catalogue of malignant diseases, we find none that strikes us with more appalling terror than Smallpox. Even Asiatic Cholera, the dreaded minister of death, which has been aptly styled "the pestilence that walketh in darkness and the destruction that wasteth at noon day," cannot be regarded with more intense interest.

All classes are alike vulnerable; no unprotected individual is exempt from the ravages of this disease. The lord of many estates, dwelling in princely palaces, and the poor inmate of the

Novel, are alike liable to this terrific malady. No latitude or climate, is free from invasion. Far away towards the North pole, the Laplander wrapped in furs, and dwelling in tents of snow and ice, as well as the Equatorial inhabitant, who has pitched his tent by some oasis in the burning desert, is susceptible to the contagious influence of variola.

Although this is a disease of which nothing novel can be presented for your consideration, and which will scarcely admit of an original idea, yet if we turn for a single moment to its dark and eventful history, and behold the wide spread desolation that has follow-
 ed ^{in its train,} we are compelled to admit that it will always rivet the attention, of the

philosopher in medicine.

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How long small pox has had an existence in the medical world, we are not able to glean satisfactorily from history. Rhazes, an Arabian physician, & the first acknowledged writer on this subject, flourished about the tenth century, and laboured hard to prove that Galen had seen this disease, he also quotes earlier authors, and from their history it appears that small pox, was introduced into Egypt by Omar, the successor of Mahomet. In China and Hindostan, indications of its occurrence many centuries since are inferred from tradition, but the traditional history is so enveloped in mystery & obscurity, that we can seize upon no certain era of its commencement or transmission. Yet the facts which these gleanings from

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history both traditional and written, fur-
nish, correspond with the indications of
sound philosophy. It is almost a self-
evident proposition, that the inhabitants
of a tropical climate, exposed to a burning
heat, and suffering under the innumera-
ble evils of Oriental despotism, must
become subject to diseases of a peculiarly
malignant type. "The succession of
conquering armies, unwholesome atm-
osphere, and the poverty of the lower
classes must have conspired, to stamp
fatality on their maladies. Hence in
these regions we find the most malign-
ant diseases, the plague and the
small pox. It was introduced into
Spain and Sicily during the eighth
century, by the success of the Saracen
Army, and gradually extended itself
throughout the different countries of

Europe. Losing sight of the glimmer-¹⁵
ing light which the uncertain records
of these periods afford us, we find unbel-
ievable traces of its progress in the sixteenth
century, Columbus having discovered
the Western Continent, and his countrymen
flocking in numbers to the "El Dorado
of the West," to reap an early harvest, but
with them the concealed virus.

St. Domingo, & the magnificent empire
of the Montezumas, were almost depop-
ulated. In succeeding years it has
been equally fatal. Iceland, Gren-
land, all the countries of Europe &
our own Country have suffered
more or less from this scourge.

Smallpox is an eruptive, febrile, contagious disease. We have two kinds of the disease, natural and inoculated. 6

It is likewise divided into two grand varieties, distinct and confluent.

The distinct variety obtains when the pustules are separated from each other, being circular and elevated, while on the contrary if the pustules coalesce, are circumscribed by minute areola, irregular in shape &c, we have the confluent variety. In this form of the disease the pustules do not acuminate but appear flat on the surface, and particularly on the face coalesce and form large sores.

This disease from commencement to its termination is divided into five stadia

1st Stadium - that of incubation

2^d nd Febrile

3^d Pustular

4th Maturative

5th Decline

The period of incubation is of variable length, and embraces that period which elapses between exposure to infection or contagion, and the appearance of manifest symptoms of the disease. In the most severe cases this space is short; in cases of a milder type it is proportionably longer.

The period of incubation generally varies from seven to fourteen days, yet it is often extended to twenty days & sometimes even further than this.

While on the other hand it is often diminished to seven, five, and four days. During this time

the individual suffers but little indis-
position, but the next stage supervening,
deleterious effects are manifested.

The second stage, is the febrile.

This stage is marked by an increase
of the Constitutional disturbance.

The symptoms generally come on
in the evening, or late at night.

The bad manifestations are often usher-
ed in by chilly sensations, severe pain
in the head, back, limbs, nausea, vom-
iting, palpitation of the heart, thirst,
furred tongue, dyspnoea, pain and
heat in the epigastrium, restlessness,
and prostration. In the adult we
have costiveness. In children you
may find the reverse. Sometimes
we have succeeding all these sym-
ptoms, cough, lethargy, and coma.
The tongue which was at first

white, now becomes red at the
Tip, and finally the redness spreads
over the entire surface.

In this stage, ⁱⁿ of the confluent variety, there is a decided increase of all the bad symptoms; more nausea, vomiting more frequent, and general prostration much greater than in the distinct variety.

This stage often lasts from twenty four to eighty hours, and many of the unpleasant symptoms abate on the appearance of the eruption.

The third stage of
is that of pustulation.

About the third day from the commencement of the second stage the eruption makes its appearance, and a manifest relief is afforded, by the outburst of the eruption. Lassitude, oppression &c,

disappear, sickness & vomiting, yield, while ¹⁵
the pulse returns to its normal condition.

The eruption first makes its appearance on the lips, alae of the nose, chin, neck, wrist, and finally invades the rest of the body, appearing lastly ~~on the~~ on the feet and legs. Very frequently, the day previous to the eruption, the whole body is suffused with a deep red blush, which may be regarded as a sure indication of small pox -

The febrile symptoms generally subside on the manifestation of the eruption, and in mild cases never return.

But in more malignant cases, they merely undergo a slight remission.

The progress of pustulation is indicated by red points conical in shape and hard to the touch.

In the distinct form, the spots are few, and 11
separate. You may discover by close ob-
servation with the glass, on the summit
of each papula, a small vesicle. These
papulae have red and inflamed bases
with transparent apices. On the third

On the fourth or fifth day of the eruption
the papulae with their inflamed margins
continue to increase, and the vesicles which
are filled with transparent liquor sanguinis
change from a conical to an umbilical
form.

There is generally at this
period of the disease, an increase of
the febrile symptoms. There is also
an increased flow of saliva, with
soreness of the fauces, and painful
deglutition. The mucous membrane
of the mouth and pharynx, is red, swollen,
and congested. Frequently hard,
dry, & troublesome cough supervenes.

A peculiar, and highly disagreeable odor 12
may be discovered arising from the
patient towards the latter period of this
stage.

When the papulae are very numerous,
coalescing on all parts of the body, and
particularly on the face, we have the
variety termed confluent.

For the first day or so there is no marked
difference between this and the distinct
form. The fever is generally more severe
and greater pain in the back and
extremities. The eruption makes its ap-
pearance a day earlier than in the
distinct. The papulae are not so much
elevated, but so commingled as to cause
swelling of large surfaces.

The depressions which are so well developed
in the papulae of the distinct variety are
scarcely perceptible in this.

Not only the cutis vera, but also the sub-¹³
jacent cellular tissue is involved in
extensive inflammation in the confluent
form. Ulceration is established in the
cutis vera which is the cause of pitting.

The distinct and confluent varieties
often appear together, the eruption
being confluent on the face, and
distinct over the body.

The period of pustulation generally
embraces five days.

The fourth
stage is that of maturation, and
(occurs) on the fifth or seventh day of
pustulation. There is an increase of
the contents of the vesicles. There is
also a considerable change produced
in the character of the contained
fluid; for during the last period
we perceived that that the vesicles

were filled with a transparent liquor sanguinis, which about this period increases greatly in quantity, extends towards the basis of the papula, and changes from a serous to a purulent character.

The vesicles also undergo a change of form, for the vesicles which in the last period, changed from a conical to an umbelated shape, now become spheroidal, and flattened. The maturation of the pustules is completed in seven or nine days from the eruption. About this period secondary fever sets in, and continues with more or less violence, varying of course with the quantity of eruption, habit of the patient, and other circumstances, until the pustules burst and give vent to a portion of the fluid.

This phenomenon generally takes

place about the eleventh day of the eruption; then desiccation, or decline commences. 15

Suppuration begins first on those parts of the body where the cutis vera is the most delicate; hence it is that we first observe it on the face, and lastly on the hands and feet.

When maturation is about completed, there is great redness of the skin, tumefaction, sense of tension, pain, throbbing &c. The eyelids, nose and lips are much swollen. There is also congestion and swelling of the mucous membrane of the mouth, attended with profuse salivation. Also at this period there is great lethargy and listlessness, manifestly indicating that the nervous system is greatly depressed.

We now come to the fifth and last ¹⁶
period of this disease, which is marked
by desiccation of the pus, and the
formation of scabs over the former
pustules. Cicatrization commences
and in healthy constitutions is completed
in eight or ten days.

About the day from the eruption,
the scabs darken, especially on the
face, and it frequently occurs that
crusts or scabs are seen on the face, before
the pustules have matured on other parts
of the body. These crusts are formed, either
by a complete desiccation of the pustule,
or by a drying up of the pus, as it exudes
from the ulcerated surface.

The scabs fall off from the eleventh
to the ¹⁴fourteenth day of pustulation,
leaving the skin beneath of a
deep red hue, which remains thus

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for several weeks, and the pits which
have been formed by ulceration of the cutis
vera, now become visible.

In this stage, the drying
of the pustules is accompanied with
intense itching, which induces the
patient to scratch, & tear the skin.

In cases of great severity,
as also obtains in the confluent variety,
desiccation and exsiccation are much
more tedious, and there is a greater loss
of substance in the cutis vera, and
consequently the pits & scars are more
numerous and indelible.

In all mild cases, where
maturation is effected over the whole
body, febrile symptoms subside entirely,
"But in more severe forms of the disease,
where the cellular tissue and glands
are involved, the fever instead of

abating, when the stage of maturation is complete, increases, the pulse is accelerated, skin dry and hot, tongue covered with white fur, thirst &c.

When this is the case, secondary fever is very apt to set in -

Diagnosis - - - -

Prognosis - - - -

The Treatment

The Treatment

of small pox, up to the time of Sydenham, was alike fanciful and arbitrary. The patient altho' labouring under a febrile disease was harassed by every means calculated to increase the heat of the system, such as "hot air, hot drinks opium, warm bed clothes &c."

It was gradually that wiser and better measures were adopted for the purpose of relieving the symptoms of the disease. A few physicians from time to time, abandoned the indiscriminate use of the hot regimen, and thus led the way for the great improvements of Sydenham, who allowed his patients

fresh air, prohibited the use of stimulating medicines, viewing it as a highly inflammatory disease, he advised a corresponding mode of treatment.

And although he may have erred in some of his directions, yet the change he made in the treatment, tended materially to lessen the mortality of the disease.

It remained, however, in his hands, what it must continue to be with physicians, an intractable disease. When are many maladies, whose progress, the practitioner can arrest, but he is comparatively a spectator in this disease, he can not cure it, neither can he cut short its leading symptoms, he can merely mitigate and ward off

their dangerous consequences,

Great diversity of opinion has prevailed, regarding the propriety of blood letting in this disease. Unless the reaction be very great violent and there is evidence of local determination I should not consider the use of the lancet at all necessary. On the other hand, if the pulse be very strong and manifest symptoms of local determination, as redness of the eyes, face difficulty of breathing, pain in the head &c, I should think it was highly called for. Occasional purging and the usual anti-phlogistic treatment, appear to be advisable throughout the whole period of febrile excitement, But when the disease is uncomplicated in its nature, the most simple treatment

should be called into requisition, such as confinement to bed, diluents, the cooling regimen, cool and equable temperature, frequent change of linen, and an attention to the "symptoms as they rise".

Calomel appears to be one of the best purgatives in this disease.

The neutral salts answer remarkably well in during the eruptive fever. When the stomach is loaded with injura or otherwise deranged an emetic will be beneficial, especially in the commencement of the disease.

Diaphoretics have been employed in moderating the violence of the fever, viz. Tartarized Antimony, Nitre, Saline effervescent draughts, Sp̄s-Mindereri Sp̄s Nitri Dulci &c.

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all of which have been employed
for this purpose.

Gargles have been used
for inflammation and dryness of
the mucous membrane of the mouth
and fauces.

Leeches may be ^{applied} employed to the
epigastrium, when there is pain
in that region attended with violent
vomiting. "Mineral acids with
infusion of roses may be benefici-
ally used in case of hemorrhage,
Emollient applications to the
eyelids when the conjunctiva are
painful, and swollen."

The most valuable remedy
for moderating the febrile symptoms
is the admission of cool air into
the patients apartment, which
should be large and commodious.

The drinks should be of a cooling nature. The patient may also have a cloth dipped in cold water, and laid over the mouth, so that he may breathe through it, which is both grateful and beneficial.

If the eruption is slow in making its appearance, the patient might be immersed in a warm bath, and tartarized Antimony and sudorifics administered.

Pain in the spine is often relieved by counter irritation, friction, ~~the~~ sinapisms &c. An enema containing forty drops of ^{also} Wine, opii, is highly beneficial in allaying nervous irritability.

Ice may be used ^{applied} internally and externally to the stomach, when that viscus suffers from inflammation.

In congestion of any particular organ, direct your treatment expressly to that organ, by the use of cups, leeches, &c. &c. And here I would remark that local bleeding may be employed in any stage of the disease, when the symptoms indicate the serious congestion of any particular organ.

Depletion should however be employed with caution for fear of its debilitating influence.

Opiates are not indicated in the primary fever, because of the increased excitability of the nervous system,

In the secondary fever, however, they are frequently exhibited with much benefit.

At the close of the eruption you may give a gentle laxative, and when there is a great prostration

And if the patient seems to be falling into a typhoid state, Tonics and stimulants are highly indicated.

Carbonate of Ammonia, wine whey, wine &c, aided by friction, warm mustard bath &c.

Belladonna has been recommended, both as a prophylactic, and as a curative disease means. —

Various retrocive methods have been presented for the purpose of preventing pithing,

The application of the nitrate of silver in solid form has been spoken of very highly. The stick is applied to each vesicle, when it first makes its appearance. And its further development is arrested.

The face has also been painted

over with a solution of the caustic,
twenty or thirty grains to the ounce of
water.

It has also been suggested
to confine the patient to a room
completely darkened, under the
supposition that the light had a
exerted a deleterious influence,
but many objections obtain to this
last method.

Gold leaf has been applied.

Sulphur Ointment is often used
by slight friction to the surface.

According to Prof.
J. K. Mitchell, the compound
mercurial plaster composed
of equal parts of Mercury and
litharge, is the best ectrotic measure.
A mark should be made to
suit the visage, and applied so

soon as the pustules begin to develop. Mr Mitchell professes to know from his own experience that this will act as a sure preventive of disfiguration.

It might be thought be thought proper, that I should say something of vaccination, as a preventive of Small pox. But were I competent to enter into a full consideration of this subject I should far transcend ^{the intended} the limits of this paper.

I shall therefore close by remarking that the immortal Jenner will always be considered the greatest benefactor of his race, and the discovery which he has bequeathed to us, will ever be esteemed the most inestimable blessing derived from medical science.