

AN  
INAUGURAL DISSERTATION

ON

*Variola or Small Pox*

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## Variola

We know nothing definite concerning the origin of this disease as it is lost in antiquity: but there is no proof that it was known to the ancient Greeks or Romans: though it appears to have prevailed in India and China from time immemorial, Rhazes an Arabian writes the most definite account of it in the tenth Century. Europe first became acquainted with it through the Arabians: and it is said to have first shown itself in Arabia about the time of the birth of Mahommed, and to have invaded Syria Egypt and Southern Europe with the armies of his Successors. It is an eruptive fever propagated by contagion, running

a definite course, and affecting a person but once during life.

It is characterized by an initial fever of three, or four days duration succeeded by an eruption which passes through the different stages of pimple, vesicle, and pustule, and ~~arrives~~ <sup>arrives</sup> at maturity in eight days. This disease like many others of different characters commences with febrile symptoms rigors followed by nausea and vomiting: pain in the epigastrium and head: hard and frequent pulse, and dryness of the skin.

We sometimes have delirium, and sometimes convulsions mark its beginning: either of the two latter symptoms enable us to prognosticate a severe form of this disease. From the earlier symptoms we are unable to diagnose



unless it is known that the disease is prevailing and the patient has been subjected to the contagion, and an early diagnosis is important as we might by judicious measures somewhat lessen the severity of the disease.

When the fever develops itself the skin is dry, the tongue is white in the centre, and red at the point. The bowels are torpid, the urine scanty and of a deep red colour. Sometimes during the first & second days we have hemorrhages, and the mind becomes dejected and confused.

There are various other occasional symptoms: a tendency to perspiration is sometimes observable, soreness of throat, sneezing, and an excess

of Tears are not uncommon. The fever is often decidedly remittent with daily exacerbations and continues for three or four days, and subsides on the appearance of the eruption. In adults just before the appearance of the eruption we have a great tendency to perspiration with drowsiness and sometimes coma, and in children we have convulsions and very little perspiration.

We have given the symptoms of the initial fever and now pass on to a consideration of the most important characteristics of the second or eruptive stage. At the end of the third day or the beginning of the fourth, the eruption generally makes its appearance in small pimples, upon the forehead about the mouth and nose,

and then upon the upper extremities, and afterwards on the lower, and is generally completed in twenty four hours. Sometimes though very rarely they appear first on the limbs or trunk. The substance of the fever is often rapid and even abrupt.

The first appearance of the pimples are small red points, then on the second day small elevations with inflamed bases, the cuticle being distended by a semitransparent plastic lymph, at the close of the second or third day the pustules have a central depression giving to the eruption a characteristic umbilicated appearance and their umbilicated form continues to increase.

On the fourth day they assume a whitish colour and become surrounded with a



6

pale red areolae, which sometimes run into each other and give a continuous red appearance. Between the fifth and seventh days, the change from the serous to the purulent character of the eruption takes place and marks the commencement of the stage of sup-  
-uration.

All that I have hitherto written will apply with some exactness to all of the varieties of this disease. But its severity differs very much in different cases, and the quantity of the eruption indicates the severity of the disease. The number of pustules indicates the quantity of the vascolous poison which has been reproduced in the blood and is also a direct measure of the extent to which the skin is

inflamed. While thus studying the complications of the eruption we are forced to the necessity of making two distinct varieties, and for the full estimation of which we proposed to consider each separately.

In the distinct variety the secondary fever continues from three to four days and the pustules arrive at their maturative stage about the twelfth day when they begin gradually drying away.

The desiccation commences on <sup>the</sup> face, and leaves a red surface which gradually disappears, or if the case has been severe deep pits mark the spot where the eruption was located, which is indelible, and the patient is said to be pockmarked.



This is the course which the eruption pursues on the face in the distinct form where the pustules are even thicker than on any other part. In this form the patient is not considered very dangerous nor is he so liable to the malignant form. We come now to consider the confluent variety which may be considered a more severe form of the disease.

The febrile phenomena attending it is more intense; the pains in the back and extremities are more severe and the eruptive fever may be said to be of an inflammatory character; though sometimes assuming a Typhous.

We have no tendency to perspirations (but sometimes a profuse diarrhoea).

The eruption appears earlier in this form and is much more irregular in its several stages. These small red papular points which first appear run into each other and form a red tumefied surface. The pustules are irregular in shape, and not so much elevated as in the distinct variety.

The face and hands become much swollen, there is soreness of fauces and a profuse and acrid flow of saliva. Not unfrequently the eruption extends to the larynx and trachea and to the larger divisions of the bronchia producing cough, hoarseness and painful attempts at expectoration and sometimes complete extinction of the voice.

When the suppuration is complete the symptoms become aggravated,

and the secondary fever develops itself. The matter in the pustules is of a dark colour, and in some cases highly corrosive in character. Between the eighth and ninth day this matter escapes from the pustules, and hardens on the surface in brown crusts, these begin to fall off at a period from the fifth to the fifteenth day of their formation.

When this disease commences as a highly inflammatory affection we are apt to have connected with inflammation of the brain or lungs, and when we have inflammation of the brain the symptoms are delirium coma convulsions, and apoplexy. The signs of the Thoracic complications are pneumonia-plurisy or effusion in



the lungs. The eyes are inflamed and sometimes covered with pustules.

When the accompanying fever is typhoid in character we have the usual signs of a typhoid state and the pustules appear slowly and irregular and sometimes recede entirely, and the suppurative stage proceeds slowly and imperfectly.

The character of the matter in the pustules is thin and watery. We sometimes have the swelling of the face to subside suddenly, and then we are to apprehend death from apoplexy.

### Anatomical Characters

In post mortem examinations we generally find congestion of the brain lungs, also pustules in the larynx, pharynx, trachea and bronchia, but

the appearance of these are modified by the stage of the disease.

In the appearance of the pustules on the skin, the cuticle, has its natural thickness, exposing a white, and smooth surface elevated at the edge, and depressed in the centre, and instead of the mucous coat we have a small umbilicated disk of varied thickness, and beneath this disk the dermis is of a red colour, and sometimes covered with a purulent fluid.

Sometimes we have after death traces of <sup>the</sup> eruption on the prepuce of the male and the labia of the female, these spots contain no pus, therefore do not scale and leave a scar, a few of these spots have been observed in the oesophagus (but are very rare).

These are generally some signs of inflammation presented by the alimentary mucous membrane and not unfrequently small elevations exhibit themselves on its surface especially in the large intestines in cases which are attended with diarrhoea or dysentery: but these eminences are said to be nothing more than inflamed and enlarged mucous glands and it is asserted that the true variolous pustules never exist in the stomach and bowels.

Cause

The cause of small pox is admitted to be a specific contagion by the whole world, and is certainly one of the most contagious diseases known.

There are very few persons that are not liable to be affected with it when



when exposed to the contagion, unless they are protected by vaccination or by a previous attack by the disease.

There are occasionally some few persons who resist the effect of the contagion to old age, but even then such persons are not entirely secured from the disease, for there are instances on record where persons have been subjected to the contagion many times and at last they have died with the disease at an advanced age, and in persons who have escaped the disease in the natural way, it has been produced by inoculation.

The foetus in the womb is liable to be attacked along with the mother, and in some cases they have been known to take the disease when the

mother is exempt from it herself  
 The contagion acts either through  
 the air or by contact in the solid or  
 liquid form with the skin or mucous  
 membrane or by insertion under the  
 cuticle. The purulent contents of the  
 pustules, and its dried scales seem  
 to be most contagious of the  
 products of the disease body and it  
 has been said, that patients have  
 taken the disease from being  
 bled with a lancet which has  
 been used in a previous case, and  
 not been well cleansed.

The opinion is yet unsettled as to  
 what period it is most contagious,  
 some believe it to be so at any period  
 of the disease after the fever has been  
 established, while others think that

it is only contagious after the sup-  
 -puration has commenced. Some have  
 attempted to determine at what distance  
 the contagion could be communicated  
 through the atmosphere, though it  
 is well known that it can be propa-  
 gated from one chamber to all of the  
 apartments of a large house, & to  
 neighboring ones.

We simply state that we coincide  
 with our able Prof<sup>s</sup> of Practice, in the  
 belief that it can be communicated  
 but a short distance.

### Treatment

Never perhaps in the annals of <sup>the</sup> history  
 of medicine has the treatment of a  
 disease undergone such an important  
 and beneficial <sup>change</sup> as this. And to Sydenham  
 alone belongs the honor of changing the



medical opinion in this respect.  
<sup>this</sup> was in many other diseases he showed  
 a mind unequalled by any of his days,  
 a mind capable of unraveling the  
 many mysteries connected with the  
 diseases of the animal economy, and  
 may be said to have been one of the  
 brightest stars, that ever shone from the  
 firmament of the medical profession,  
 but his day is past and it would be  
 useless for us to attempt to eulogize upon  
 his once capacious mind. His name is  
 enrolled upon the book of immortality,  
 and will be handed to succeeding generations  
 there to receive the honor and praise  
 ever due to genius & intellect.

The predecessors of Sydenham laboured  
 under the great fallacy of opinion that there  
 was a season in the body, and that it

was necessary to force it out through the skin, adopting the old maxim that it was better out than in.

They therefore adapted the means of driving it out through the eruption, it was known to them that heating and stimulating measures would promote the eruption, they therefore gave stimulants and hot drinks, heaping bed cloths upon the patient and excluding the fresh air. How great must have been the fatality of the disease under such a treatment for now we know that the greatest danger depends upon the quantity of the pustules, they were impressed with the belief that the ~~expansive~~ copiousness of the eruption, indicated the exit of the noxious matter from the system. Great must have been the efforts of nature given to have

succeeded in one case for she had two foes to contend with, namely the disease and a set of practitioners wholly unacquainted with the disease.

The latter the more formidable, of the two, for while nature in her endeavors to heal the disease, was making use of every effort, they through ignorance were placing every obstacle in her way, and certainly they triumphed over her in many cases.

Sydenham in his works recommended the beneficial effects of an opposite treatment, but it was subsequently to the introduction of the method of inoculation that the cooling treatment was fairly established. It is important for us to make an early diagnosis in this disease as the object is to prevent if possible, a copious

eruption which we may keep down by the use of saline cathartics, so situated <sup>so</sup> as to produce two or three stools every day and by free ventilation of the surface of the body, and if the temperature of the body be very high the skin may be sponged with tepid water, some attention should be paid to the apartments of the patient which should be kept cool & ventilated, In the typhus form of the disease the treatment should be about the same as that for other typhus forms, and if the patient should be sinking it will be necessary to resort to the free use of Cordials and Stimulants. There <sup>are</sup> many complications that arise in the course of this disease and the symptoms should be met and treated accordingly.

