

AN  
INAUGURAL DISSERTATION

ON

*Scarlatina*

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BY

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## Scarlatina.

This is an epidemic, and contagious disease; characterized by continued fever; by a scarlet rash; and, by inflammation and ulceration of the throat: [except, in very mild cases.]

The scarlet rash, usually appears in 24 hours after the attack, and terminates on the sixth, or seventh day; at the termination of which, desquamation of the cuticle commences.

The frequency of this disease, owing to its epidemic tendency; is very irregular. It is thought by a majority of authors, to be less frequent, but more fatal, than Rubiola: This, I suppose, is a true conclusion; but, for the past two years, in my county, (Giles) it has been both, more frequent, and fatal, than Rubiola, or, any other eruptive disease; killing many, while the others were scarcely heard of at all.

Varieties.— By most authors, it has been divided into three varieties; Scarlatina Simplex;

in which there is a florid rash, and but little, or no affection of the throat; *Scarlatina Anginosa*, in which, both the skin, and throat, are decidedly implicated; and *Scarlatina Maligna*, in which the stress of the disease falls upon the throat.

These varieties have been made for convenience of description, and for a better direction of the treatment; and not, that they are different diseases, produced by different causes. It is true, that the simple and malignant forms, scarcely resemble; but it is now a well established fact, that they are the same disease in different degrees of severity; for, the virus of the simple, will produce the malignant, and, vice versa.

Causes.— The predisposing causes, are debility, sex, temperature (and according to Liebig's theory) a certain ingredient in the blood. When debility exist, the system has not the same power, to resist, or,

expel, any virus with which it may come in contact, in this disease, or any other; to the same extent, it would have, if the organs were vigorous, and active. Persons of all ages are susceptible to this disease, but, it is eminently a disease of children, for they scarcely ever escape, when exposed to its virus; while adults frequently escape entirely, for their whole lifetime. Children are said to be more susceptible to it, from the age of one, to five years.

Females, after the age of puberty, are more susceptible to it than males; for which, I can assign no plausible reason, unless it be, that the health and strength of most males continue to improve after puberty, and the health of many females is bad, which produces debility, and it, is a predisposing cause, as I have above stated.

Temperature certainly has some influence

for, Scarlatina, Typhus fever, and Rubiola, have rarely been known in the intertropical regions; and it appears just as plausible that heat, or cold, at certain temperatures, would have the power of modifying the activity of the virus of Scarlatina, as it does, that the virus of the plague, loses its contagiousness, when above  $90^{\circ}$ , or below  $60^{\circ}$ ; and that the vaccine matter loses its power of producing the cow pox, if exposed to extreme cold, or a temperature of  $95^{\circ}$ , for a certain length of time.

According to Liebig's theory, there is an ingredient in the blood, and when the virus of Scarlatina comes in contact with this ingredient, it has the power of assimilating it, on the same principles, that yeast acts, when when it is put into any fluid, that contains gluten: and, that this change in the

blood creates a general derangement of the system, and produces the consequences that are common in this disease.

If this be correct, we can tell how the virus of the simple, can produce the malignant; how some persons will have the second attack; why it is that some will not have it at all; and come very nearly telling why children are more susceptible to it than adults. If the blood contains a large quantity of this peculiar ingredient, the virus of the simple, will produce the malignant; if the case be mild, and all this ingredient is not assimilated, they are liable to the second attack; if none of this ingredient exists in the blood, of course, they cannot have it at all; and the most plausible reason, that I can assign, for adults, not being as susceptible to the virus, as children; is, the generation of this substance, (owing to the changes of life,) is stopped.

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The exciting causes, are; a poisonous effluvia floating in the air, producing the epidemics of this disease; and the actual virus, which is produced by the disease itself.

The first of these exciting causes, has been long since, well established, by close observers, who have noted the difference in the number of deaths, that have occurred in different years, at the same place; which difference, is so great, that nothing but an epidemic tendency could have caused it.

The virus produced by scarlatina, being an exciting cause, is admitted by the most, if not, by all authors.

Contagion.— The contagiousness of this disease, cannot be doubted; but it is not as active in its contagiousness, as Rubella, Variola, Varicella, or Pertusis. It has not yet, been ascertained, how long the power of imparting the

contagious, continues with patients; but it is probable, that they have this power till the termination of desquamation. This virus will cling to objects, that have been about patients, and impart the disease to others, for a considerable length of time, even, after some pains have been taken to cleanse them.

The virus is caught by inhalation; and some have thought, by absorption through the skin also; and have used oil on the skin, to prevent its absorption.

It is generally, more contagious, and fatal, when the disease commences in a neighborhood. The second attack is not so frequent as in Rubicula, and Variola.

The period of incubation has not yet been determined with accuracy, nor probably ever will be, for, it varies considerably, according to different authors; but, is generally stated to be from four to six days.



### Symptoms.

Scarlatina Simplex.— It generally commences with debility, fever, hot skin, considerable thirst, flushes of heat and cold alternately, and nausea and vomiting; in about 24 hours, little points, at first, of a light red, then becoming deeper, and deeper; appear in great numbers; first, on the face, neck, and chest; these continue to get thicker, and to spread, till the whole body is covered, in most cases; in this time, the pulse become very full, and frequent; the tongue is covered with a creamlike coat, through which, the red and elevated papillae appear; the throat appears a little redder than in health, but scarcely any complaint of soreness. The eruption is deeper about the grains, and flexure of the joints than elsewhere; and in two or three days, it begins to fade, and is usually gone entirely, against the seventh, or eighth day: at which time desquamation

of the cuticle commences, usually in the same order that the eruption came out, and is generally completed in a short time. The onset of this form of the disease, is generally very sudden, but not very alarming.

Scarlatina Anginosa. Many of the symptoms in this variety, resemble those of the preceding; but, are, in a more aggravated form; with the addition of stiffness of the neck, and inferior maxillary; severe sore throat, which is apt to inflame, and ulcerate, in a short time; which produces difficult deglutition; the pulse are quick, and vibrating; the eruption later in coming out than in the preceding variety, and of a more livid hue; it sometimes disappears, and then returns again in an uncertain length of time; the tongue, first, with a white coat, except at the edges, which are red, but, it soon cleans off, and the whole of it looks red; the eyes are slightly injected, the face swollen, a dry cough, and diarrhoea or constipation of the bowels. The duration of this variety of Scarlatina, is usually

longer than the preceding variety, and its order of appearance, and that of desquamation, not so regular; it is, also, more dangerous.

*Scarlatina Maligna.*— In this variety, patients are frequently attacked so severely, that they expire before any of the local symptoms have time to exhibit themselves; but they are most usually attacked with coldness, and shivering; languor and debility; nausea and vomiting; quick, small, and depressed pulse; extreme sore throat; brown, or black, incrustations soon appear on the teeth, tongue, and lips; the eyes injected, the face swollen, and purple; the eruption is very late, and irregular, in its appearance, and of a livid hue; it may appear, and disappear, several times; in some cases, the whole inflammation seems to collect in the throat, eyes, and ears, preventing deglutition entirely, destroying hearing, and sight; the acrid matter, which issues from the throat, runs out at the nose, excoriated the upper lip; and down the alimentary

canal, the absorption of which, produces colliquative diarrhoea, and excoriated anus, all of which, produces a depressed state, laborious respiration, delirium, comas; the consequence of which, is death,

The duration of malignant cases of Scarlatina is very variable, sometimes lasting a few hours only, and, in others, several days.

Sequelae.

Dropsy is the most frequent, and important of the sequelae of scarlatina. It is more frequent after mild, than severe cases; owing, it is supposed, to patients exposing themselves to the open and damp air before the new skin is sufficiently hardened to resist the vicissitudes of the weather; therefore, patients (no matter how mild the case may be) should be confined to their rooms, for three or four weeks; or until desquamation is entirely completed, and the new cuticle sufficiently hardened. It is more frequent in winter than summer; also, after extensive

than moderate desquamation. The effusion may take place in the cellular tissue, or, in any of the serous sacs. It may take place in any of them, or, all of them at once. Anasarca is the most common form in which it appears; but not the most fatal. The other forms of Dropsy are oedema of the lung, Hydrothorax, Ascites, Hydropericardium, and Hydrocephalus; all of which occur most frequently in the order in which they are above named.

The symptoms which precede Anasarca, for a day or two are languor, anorexia, puerishness, nausea and vomiting; and, costiveness; at first the pulse are not very frequent, but, are irregular, in a short time they become more frequent, considerable thirst, and dry skin, the urine is altered and scanty, or, entirely suppressed for a while, the face becomes pale and looks chuffy. This form of Dropsy is so very mild at times, that it is

with difficulty, that you can discover it.

Anasarca alone, is not dangerous, but the effusion may take place almost suddenly, in the subcutaneous cellular tissue, and in different other parts almost simultaneously, and cause death in a short time; for, an effusion, to much extent, either in the head, lungs or pericardium, is apt to produce death in a short time, if not remedied; and, if in all of them at once, it would be much worse.

Partial asphyxia is a symptom of Hydro-pericardium; dyspnoea is a prominent symptom of Oedema of the lung, and Hydrothorax; violent headach, dilatation of the pupils, convulsions, or, palsy, are symptoms of Hydrocephalus.

The pathological cause of scarlatinous dropsy has created considerable discussion; some contend that the disease of the kidneys, which is produced by Scarlatina, is Bright's disease; while others contend that this is not plausible, for Bright's

disease of the kidneys is almost incurable by any means; and that the kidneys are only in a highly congested state, which produces this result, and is generally, easily managed. The urine is more scanty than in health, but the patient voids it often; it is supposed, because it is hotter and more irritating than usual, which causes the bladder to contract, and expel its contents, even, when the quantity is very small. In mild cases of dropsy, the appearance of the urine is not greatly changed; but, in severe ones, it is frequently of a brownish or blackish color, which is caused by blood being in it. M. Legendre states, that in many cases, he analyzed the urine; and, that it was always coagulable by heat and nitric acid; though the precipitate varied in quantity, and appearance, according to the color of the urine, and the length of time from the invasion of the Anasarca. The color of the precipitate, is said not to be of a pure

white color, as in Bright's disease, but of a dirty brown, or ash gray tint; Several authors state, that they have, undoubtedly, traced the origin of Bright's disease to scarlatinous dropsy, and, that in many post mortem examinations, they have discovered the characteristic renal lesions, that are in it; but others, to rebut this argument, could argue that the predisposition already existed, (like in Phthisis Pulmonalis), and that the excitement produced in the kidneys by the Scarlatinous Dropsy, caused it to develop itself at that particular period.

Diagnosis.— It is usually very difficult to distinguish Scarlatina from some of the other eruptive fevers, by the symptoms which precede the eruption.

The most reliable symptoms before the appearance of the eruption, are high fever, very frequent pulse, some redness and soreness of the fauces, and a knowledge that the disease is prevalent at that



time in the community; but, even there will not do to depend on, and consequently, no opinion should be given, till the eruption comes forth, which is so very characteristic of the disease, that it will scarcely ever be mistaken for any other.

The characteristics to distinguish Scarlatina from Rubella are the following, Viz. The absence of cough, watery eyes, running from the nose, and sneezing, all of which are the most predominant symptoms in the early stages of Rubella, but scarcely ever attend in a very high degree in Scarlatina; by the eruption appearing in 24 hours in Scarlatina, and in Rubella, not till about 72 hours; by the difference of eruptions themselves, for that in Scarlatina usually appears suddenly, and is often completed during the first day; in Rubella, it appears slowly, so much so, that it is not apt to be completed under two days; in Scarlatina the eruption commences in minute points, or dots, which speedily become so

numerous, and crowded, that the surface appears unusually red, like that produced by a blushing; in Rubella, the eruption is elevated above the surface, and collected into semicircular clusters, leaving interstices of healthy looking skin between them; in Scarlatina, it is of a bright scarlet tint, in Rubella of a darker color; by the absence of sore throat in Rubella, and its severity in Scarlatina, in addition to the extreme high fever, and quick pulse. Even after such distinct, characteristic differences; it is strange to tell that these two diseases were not distinguished till about two centuries ago. Morton speaks of it under the name of Morbili Confluentes, and Hoffman calls it, by a similar mistake, Rubella Rosalia; and the malignant form was called by Cullen, Synanche Maligna. Dr. Withering was the first to point out the characteristic differences, clearly and distinctly.

The distinctions between Scarlatina, and Roseola, are not always well marked; some say, the difference of the eruptions is not sufficient in many cases, to distinguish them. In Roseola, the eruption is rose colored, the patches more regular in shape, and, of a much smaller size, than in Scarlatina; the absence, or very slight degree of the anginous inflammation in Roseola; but the most important characteristics of all, are, the very slight degree of febrile reaction, and the pulse, instead of being double in frequency, (as they are in Scarlatina,) are scarcely above the natural rate; and, the skin is but little hotter, than in health. Roseola is not contagious, and of a more chronic form. Dr. F. A. Thompson, says, that the eruption, in Roseola, commences first on the extremities.

Prognosis.— The fatality of this disease is very variable during different years, and in different places, owing, it is supposed to the favorable, or unfavorable tendency of the predisposing, and exciting causes of this disease;

Therefore, the prognosis must be based in part on the variety of the case, and the character of the prevailing epidemic at that time, and place.

Scarlatina Simplex, generally terminates favorably, unless, it assumes one of the other varieties.

Scarlatina Anginosa is always dangerous to some extent. If the attack commences with very high fever, quick and vibrating pulse, the eruption very late in coming out; and scanty, when it does appear, and of a livid appearance; the throat very highly inflamed, colligative diarrhoea, great irritability, and delirium; a fatal termination may be expected; but on the other hand, if the general symptoms are mild, the eruption comes forth in due time, and the brain is not affected, a favorable prognosis may be given.

Scarlatina Maligna, as the name itself shows, can not be considered in any other light, than very unfavorable terminations, to be the consequence.

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 Treatment.— If it can be so, the patient should be in a room, that can be well ventilated; the temperature of which, should be regulated according to the nature of the case. The clothing, in most cases should be thin, and light. The diet should be of the antiphlogistic nature, easily of digestion, and the quantity small. Cleanliness should be closely observed in every particular. Scarlatina Simplex, requires but very mild treatment. The antiphlogistic treatment in respect to diet; if inclined to be costive, use mild laxatives, such as Magnesia, Oil, &c; if the skin be very dry, and they are annoyed with itching, oil it. Keep them confined to their rooms for three or four weeks, or, until desquamation is entirely completed, in order to prevent Dropsy.

Scarlatina Anginosa, and Maligna, being much ~~severer~~ than the preceding, should be treated more actively, and more promptly than the preceding.

but, this disease, being a self limited one, we can,  
 at our best, do no more, than to keep it in its  
 proper boundaries. Treat the bowels, and  
 skin, as in the simple variety; and, be certain,  
 and avoid, all drastic purgatives; for the  
 bowels, in this disease, frequently have a chol-  
 eratic tendency, any how; therefore, any remedy  
 that would be calculated to excite them much,  
 should be avoided; keep the skin cool, and  
 the fever reduced, as much as possible; by  
 sponging with water, and vinegar, often;  
 in connection with thin clothing, and ventilated  
 room; if delirium occurs, apply cold to the  
 head; and some say, apply leeches to the throat;  
 for in some cases, it is thought, the tumefaction  
 of the throat, prevents a free flow of blood  
 from the head, which causes the delirium;  
 if depletion is actually necessary in any case  
 cups or leeches are much the safest to the part;

for resection might create too much debility;  
 therefore, avoid it, if possible, in all cases; if the  
 throat be highly inflamed, and ulcerating,  
 cleanse it, with a solution of salt; but, a  
 solution of the Nitrate of silver, (about 20 grs. to  
 the ounce of distilled water,) is more highly  
 recommended than any other preparation;  
 apply warm poultices externally, <sup>the</sup> best of which,  
 is made of pepper tea, and meal; but if the  
 patient be small, and you cannot keep the  
 poultice on, fry the pepper in grease, and  
 anoint with this several times during the  
 day; some say, apply leeches, or blisters to the  
 throat, but the internal, and external,  
 inflammations may meet, and cause death;  
 if gangrene is about to, or has commenced, the  
 preparations containing pepper, and the salts  
 containing Chlorine, have both been very high-  
 ly recommended, used, either as gargles, or with mops;

during the whole course, mild diaphoretics should be occasionally administered, unless the skin keeps moist; viz. Nut. Spis, Cit. and Antimonial wine; some recommend the acid preparations to be used during the whole course of the disease.

Scarlatina Maligna, as has already been stated, is very fatal, frequently beyond the reach of all remedies, but we must try to do something, as long as life lasts; administer stimulants, such as Ammonia, Brandy, Wine, Quinine, &c; till you get them out of the depressed state, that it usually commences in, and then use the treatment for Scarlatina Anginosa.

Dropsy. In mild cases, the treatment should be mild purgatives, and diaphoretics; such as Bitartrate of Potash, warm bath, &c; the diet well regulated, and close confinement to the bed; but, in severe cases where there is danger of effusion taking place in some vital part, active treatment is



very essential; the inflammation, if there be much,  
 should be arrested; and if we suspect any effu-  
 sion, we should promote the removal of it,  
 by bleeding copiously, administering drastic  
 cathartics, (such as Galap and Cream of tartar,)  
 and, by administering mercury, till the gums  
 are slightly touched; this, in all common  
 cases, will suffice; cathartics and diaphoretics  
 should be persisted in, until entire recovery  
 ensues. Professor Bowling, uses the Cream  
 of tartar and Galap; and the carbonate, or acetate  
 of Iron, on alternate days, for this disease.  
 Prophylactic.— I believe, that Belladonna, is the only  
 medicine, that has yet, been discovered, that is thought  
 to act as a prophylactic, in Scarlatina, and this,  
 is doubted by many, yet. Hahnemann was the  
 first, who asserted that it possessed this Prop-  
 erty. The administration of it, has to be persis-  
 ted in for some ten days, before it will have the

desired effect, and, if it entirely abates, and then commences anew, you should resume its use with renewed energy. It is generally administered thus; ʒjss. to an ounce of distilled water; dose ʒjtt. twice a day, to a child one year old; and, an additional drop for every additional year. I could adduce many statements, both, for, and against, the prophylactic property of this medicine, but more, I think, in favor, than against it; but I deem it unnecessary. There could be no impropriety in giving it a fair trial, for it may do good, and can do no harm, if properly administered.