*Billard* and *Ollivier d'Angers* have often met with these small hæmorrhages, but were unable to perceive any bad effects from them.

**Therapeutics.**—On account of the insignificancy of the bleeding, it does not seem advisable to resort to cold-water injections or the introduction of styptics for its premature arrest. It is best to wait till it stops spontaneously; the warm water-baths, however, should be omitted so long as it continues.

(5.) Inflammation of the Breasts (*Mastitis Neonatorum*).—We conclude the affections of the female genitals with mastitis neonatorum, although it does not exactly belong here, for it occurs as often in new-born boys as in girls. To comprehend this peculiar process, observable only in the first few weeks of life, it is necessary to premise that the breasts of most new-born children, when slightly pressed, will discharge a small quantity of thin milk, which, after eight to fourteen days in the male child, disappears forever, but in the female till the first pregnancy.

According to *Guillot's* investigations, it is neutral or alkaline, but becomes acid if allowed to stand, and then separates into two parts. Microscopically, colostrum corpuscles are found in it in great abundance. It does not by any means taste sweet, but somewhat insipid, or even salty, of which I have frequently convinced myself.

This temporary secretion of milk makes the breasts of the new-born child as disposed to inflammation as those of suckling women. Pressure or a bruise, which, during the delivery, may be unavoidable, suffices to induce inflammation and suppuration of the breasts. Meddlesome midwives are often to blame for this affection, for they make the inexperienced mothers believe that the milk has to be assiduously squeezed out. Redness and swelling of the gland result from this operation; and at length, on touching the breasts, the child sets up a cry of pain, the swelling increases, and fluctuation is finally felt at some place; and, when the abscess bursts, a large quantity of thick pus escapes. Suppuration lasts for a few days, after which the abscess closes, the gland remains for some time indurated, but, after a few weeks, complete *restitutio in integrum* has taken place. In cachectic children who suffer at the same time from thrush and diarrhœa, the erysipelatous redness will extend over a large portion of the thorax, and, after spontaneous or artificial opening of the abscesses, large patches of cellular tissue will slough off, and fistulous ulcerations will remain for a long time. The only bad effect of suppurative mastitis in girls is, that the nipple and even the whole gland may shrink up, when the mamma, thus altered, will be partially or totally unable to perform its function at the time when the duty of lactation begins.



**Therapeutics.**—A rational prophylaxis is the main indication. If the glands are swollen, but not yet reddened and painful, the transition into suppuration, in most cases, may be prevented, if all pressure and irritation are carefully avoided, and the occlusion of the lacteal ducts obviated by inunctions of olive-oil. To accomplish the first indication, a fine piece of oiled linen is laid upon the breast, and over this some lamb's-wool. In this manner we may almost always succeed in reducing the œdema, and in bringing about a normal condition of the gland. But, if it nevertheless suppurates, the oiled linen is none the less useful, but the lamb's-wool should be changed for bags of dry, warm bran, because the ripening of the abscess is accelerated by them. In puncturing the abscess, the nipple should be avoided, for the cicatricial contraction resulting from the wound will invariably pull it down and deform it, and this, in the after-life of the girl, may exercise a very unfavorable influence upon the nursing of her children. The incision should be in the direction of radial lines from the nipple as a centre. After the pus has escaped, plain, moist, warm compresses are applied, by which crusts are prevented from forming, and the lips of the wound from prematurely closing. In otherwise healthy children the wound will close in a few days; in atrophic children, where collapse is vastly accelerated by the suppuration, the pus becomes flocculent, and thin, and the wound remains open until death.

## CHAPTER VII.

### DISEASES OF THE SKIN.

All the diseases of the skin occur in *children*, and most of them indeed *much more frequently* than in adults. As, however, in the plan of this work, a knowledge of special pathology, and also of the cutaneous affections, is presumed to have been already acquired, we limit ourselves to the consideration of those morbid alterations of the skin which are almost exclusively observed in children; or, if they also occur frequently in adults, require in children, on account of the greater delicacy of the skin, a different treatment. Some of the diseases of the skin have already been described in former chapters, for example: seborrhœa capillitii, page 6; sclerema, page 67; cancer aquaticus, page 97; the eruptions during the first dentition, page 107; in abdominal typhus, page 187; nævus vasculosus, page 242. Other markedly cachectic eruptions will be treated of with the ca-

chexiæ, syphilis, and scrofula, and thus we have only remaining for this section the acute exanthemata, and a few chronic efflorescences.

(1.) Scarlet Fever (*Scarlatina*).—Scarlet fever, as, in fact, all acute contagious exanthemata, is not to be regarded as a simple cutaneous affection, but more as a general disease, of which the morbid alteration of the skin may certainly be looked upon as the most striking symptom. It has always been the subject of attention from authors, to such an extent, indeed, that *Canstatt* collected a list of one hundred and ninety-one works upon this subject, which had been published before 1846. Since that date several dozens of works upon it have been added to the list. This large number of treatises is due to the ease with which it is observed, its frequent occurrence, and to the peculiar fact that almost every epidemic furnishes some slight modification, which in former epidemics was but little and imperfectly observed. To simplify the study of this affection, we will first present a description of a regular scarlet fever, and all the variations and complications will follow in a special section.

### A.—*NORMAL SCARLET FEVER (SCARLATINA LEGITIMA).*

**Symptoms.**—Legitimate scarlet fever runs through three tolerably sharply-defined stages: (1), incubation and premonition; (2), eruption and efflorescence of the exanthema; and (3), its disappearance, with final desquamation.

1.) The Stadium of Incubation and Premonition.—The incubation lasts from the day of infection till the appearance of the febrile chill; thence the precursory stage is reckoned. This period is by no means alike in all children; in most instances it lasts from six to eight days. Accounts of very great deviations from this are to be accepted with the utmost caution, for it is very seldom possible during an epidemic to determine the day of infection with absolute certainty. The opportunities for infection, by means of personal intercourse, especially with still-desquamating convalescents, or by transmission through a third person, are so variable and difficult to be controlled, that one may well doubt the statements which vary considerably from the general average, six to eight days.

So long as it is not known that the children are infected, no symptoms are usually observed during the period of incubation. But, when the parents have once ascertained that their child has been exposed to the contagion, from that hour they observe a host of symptoms, most of which are of a subjective nature, and furnish a more positive proof of parental anxiety than of medical acuteness. Some few cases, however, do in fact occur where the children feel unwell from the moment of infection, are depressed, sleep restlessly, and have less appetite, till finally distinct febrile symptoms indicate the commencement of the precursory stage.



The real premonitory stage embraces a period of from one to three days. The symptoms which appear during it are always so marked that the relatives notice them, yet are by no means on that account always the same. They do not, as a rule, possess much that is characteristic. Slight chilliness, hot and cold flashes, or a shivering chill, heightened temperature of the skin, very rapid pulse, severe thirst, anorexia, nausea, and, when the fever appears, sudden vomiting, are the ordinary phenomena. There is one symptom, especially during the prevalence of an epidemic, which makes the eruption of a scarlet fever more than probable, and that is a slight angina, occasioned by general redness and swelling of the whole posterior part of the mouth, palate, and fauces. The additional cardinal points for the diagnosis of a scarlet fever are remarkably hot breath, great frequency of the pulse, a burning-hot skin, and severe vespertine exacerbations, which may become aggravated into convulsions and delirium.

After these symptoms have lasted one, or, at the longest, three days, the eruption begins to break out, and with it the second stage.

2.) The Stage of Eruption and Florescence. — The exanthema first appears upon the neck and face, then spreads rapidly over the whole body, and in twelve hours the eruption is at its height. It begins by the appearance of barely-visible, impalpable, small red points upon the neck, quickly followed by a marked erythema. When the erythema does not uniformly cover the whole body, and occurs only in the form of large, red spots upon white, normal ground, then this kind is described as scarlatina variegata; when the whole body is reddened, as scarlatina levigata. These two forms cannot be entirely separated, for often the one is observed on some parts of the body, while the other is seen upon other parts, and still more frequently the scarlatina variegata at the climax of the disease becomes scarlatina levigata.

Previously-healthy, well-nourished children become, in the true sense of the word, as red as "boiled lobster;" the feebler the patients, the less intense will be the erythema. The erythema is darkest in the vespertine exacerbations, and during bodily exertions or crying, and least intense when the children are uncovered and become cool.

Normal, simple scarlatina lasts fully four days. During the first two days the redness of the skin and general symptoms reach their climax; in the next two the local as well as the general subside.

Simultaneously with the eruption of the exanthema, the anginous

difficulties become considerably aggravated; still, the angina of scarlet fever is never as severe and painful as a simple tonsillitis with marked tumefaction and incipient suppuration. The so-called scarlet-fever tongue is also most characteristic after the eruption. Its root and centre are covered white, its borders and apex colored dark red, the papillæ filiformes are slightly swollen, and give it a granular appearance, on account of which, and the similarity of color, the name of "raspberry tongue" has not unaptly been bestowed upon it. Occasionally the papillæ are so intensely swollen that they also project boldly backward like red points, where the white fur has already formed, and thus make the tongue appear villous.

During the first days the temperature of the skin is very high—higher, according to the sense of touch, on those places which are reddest. I once found it in the axilla, on the first day of the eruption, to have risen to 107° F. The pulse is likewise very high, and the thirst great. The profound general depression, which sometimes becomes so serious, before the eruption of the exanthema, that the patient seems perfectly moribund, subsides after the eruption has appeared.

*Heim* formerly claimed that scarlet-fever patients emitted a peculiar odor. The odor is described as very offensive, and has been compared to brine, old cheese, or even to that of a *menagerie*. Possessing extraordinarily acute olfactory nerves, I have with all carefulness sought this supposed specific odor in many patients, but have never yet been able to detect it. True, very many children smell unpleasantly, but that is due to the circumstances that the parents will, under no consideration, consent to have the linen of the children and bedclothes changed; they even set them upon the chamber-pot in bed, and often will not touch them with a wet sponge for more than a week. From this there results a mixture of odors, to which fæces, urine, and perspiration, contribute the chief component parts. This so-called specific odor disappears in every instance so soon as the anus and genitals have been properly cleaned, the linen changed, and the children placed in a fresh bed.

It is possible that, in *Heim's* time, scarlatina was accompanied by such an odor; in our time it is not the case.

Toward the fourth day, all the local and general symptoms subside considerably. The angina disappears entirely, the exanthema fades, the fever is limited to the vespertine exacerbations which are growing feebler, the children sit up, begin to amuse themselves, and call for food.

3.) The Stage of Desquamation.—The erythema begins to fade on those places where it was first observed, on the neck and breast, and disappears last from the lumbar region and inner surfaces of the thighs, where the last traces may be seen up to the sixth and seventh day from the commencement of the eruption. Previous to the desquamation, a profuse perspiration and tolerably severe itching break out in most cases, after which the epidermis becomes cracked, and is cast off here and there in large scales or laminæ. The new epidermis during the first few days is of a feeble rosy-red color and has a singular smoothness, but soon assumes the qualities of that just cast off. The exfoliation progresses upon the fingers and toes on a grand scale. It is here sometimes peeled off in continuous masses like glove-fingers. A similar process of desquamation also takes place on the mucous membranes. The patients hawk and expectorate, without much difficulty, a turbid phlegm, the tongue likewise casts off its epithelium, the urine becomes opaque and contains enormous quantities of epithelium from the various sections of the uropoëtic system. Lastly, several large, muculent stools, of a putrid, penetrating odor, are also evacuated.



The desquamation usually begins directly after the exanthema has begun to fade, but may, however, be retarded for fourteen days. This happens especially when the recovery is interrupted by some intercurrent process, for example, dentition or a catarrh of the bronchi, or of the alimentary canal, etc. The more intense the erythema, the more rapid and thick will be the desquamation.

This is the picture of *legitimate scarlet fever*. Its variations are numerous, and can never be exhaustively described. They may be best regarded from the following points of view: (1.) Incompleteness or variations of form of the exanthema. (2.) Modifications in the participation of the mucous membrane. (3.) Intensity of the general affection; and (4.) Anomalous localizations.

### B.—*VARIATIONS OF SCARLET FEVER.*

1.) Incompleteness or Modifications of Form of the Exanthema.—Erythema of the skin and angina are the principal symptoms necessary to constitute a perfect scarlet fever. When one of these two is absent, then we have the variation of an incomplete scarlatina, indicated according to the absence of the one or the other: (1), scarlatina sine angina; and (2), scarlatina sine exanthema.

ad 1.) This form is observed tolerably often. The rash may break out perfectly, run a regular course, the desquamation may take place at the right time and properly, and yet the patients do not complain of any difficulty in deglutition and the tonsils are not swollen, scarcely reddened. The general symptoms are here never of especial severity, and the affection of the mucous membrane is always slight.

ad 2.) However easy it may be to diagnosticate the first variety, it is by no means so easy to detect the second, for it is, indeed, possible to mistake it for a simple angina, which children may also acquire during an epidemic of scarlet fever. The characteristic indices in scarlatina angina are: the diffused redness, the raspberry tongue, the rarity of suppuration of the tonsils, and the severity of the fever, all of which symptoms, however, may also occur without scarlatina, in simple angina of a nervous child. Angina of scarlet fever can only, then, be diagnosticated with certainty when the same individual has already, on a former occasion, been treated for a simple angina, and a marked difference in the form of the two fevers is perceived.

Many authors assert that a child may also desquamate completely after scarlatina without exanthema. I have never yet observed this, and regard it more prudent, in real desquamation, to assume the existance of an eruption, although of but a few hours' duration.

Between these two forms there are, naturally, a number of intermediate ones. There are whole epidemics where the exanthema is comparatively severe, the angina slight, and conversely, epidemics where the angina produces very severe symptoms, while the exanthema is visible but for a short time, and only on some parts of the body.

Regarding the form of exanthema, we have, first of all (1), *scarlatina variegata;* (2), *scarlatina levigata.* In the former, red patches, of the size of a silver dollar up to that of a hand, first appear, which may remain separated from each other by a streak of healthy integument. In the latter, the whole skin, from the face to the feet, becomes scarlet, in which case the desquamation is always extremely intense. At the acme of the exanthema the first form will, in fact, run into the second.

When the exudation of the cutis is considerable, a countless number of minute tubercles will arise on the surface of the body, owing to which the integument feels rough, like a goose's skin.

These nodules originate by enlargement of the papillæ of the skin. This kind is called *scarlatina papulosa.*

Lastly, when the exudation is still greater, the effusion will gather into vesicles of the size of poppy-seeds, which are scattered in countless numbers over the whole body. They contain an alkaline turbid fluid, and an extensive desquamation ensues after these have ruptured.

In some epidemics these vesicles stand so closely together that they coalesce, a condition that has been denominated scarlatina vesiculosa, pustulosa, pemphigoida. Miliaries usually form only in very well-pronounced, severe cases.

2.) Modifications in the Participation of the Mucous Membrane.—That scarlet fever is no cutaneous, but a general disease, is



seen principally from the numerous affections of the mucous membrane that accompany it.

On the usual places, in the cavity of the mouth, the morbid lesions vary extremely in intensity. The palate and tonsils are either only simply reddened, or reddened and severely swollen, or in malignant epidemics, under unfavorable external circumstances, may become covered with grayish-white membranes, forming angina diphtheritica. Most frequently the diphtheritic membranes occur upon the tonsils, and may be partially detached by gargling, when the mucous membrane beneath will be seen reddened, eroded, and after a few hours becomes covered again with new pseudo-membranes. The odor from the mouth is very offensive, deglutition is difficult, and a fetid mucus flows from the nose when the diphtheria extends upward into the choanæ. The adjacent submaxillary and cervical glands are then always swollen and occasionally suppurate. The affection of the general system is always uncommonly grave, and collapse ensues rapidly when the diphtheritis becomes gangrenous; along with which the odor from the mouth becomes intolerably putrid, great difficulty in deglutition and respiration, delirium or coma, come on, and these are soon followed by death.

The angina likewise shows variations in regard to its extent. In benign epidemics, it is confined to the palate and tonsils, but, when the diphtheritic form appears, extends also to the Eustachian tubes, nasal passages, Highmorian cavities, pharynx and larynx, by which, according to the affected parts, deafness, coryza, dysphagia, and dyspnœa, supervene. Epidemics with diphtheritic, and, still more, gangrenous angina, always belong to the malignant.

3.) Intensity of the Affection of the General System.—Our predecessors assumed, (1), an erethitic, (2), a synochal, (3), a torpid, and (4), a septic scarlatina. Although this division into different forms cannot always be strictly carried out, for often several of them are observed during the course of the same case, still it must be acknowledged that the character of the general reaction may be very different in different epidemics. To this variation, that seen individually is yet to be added. In general, it may be assumed that the stronger and healthier the child was before it was attacked by the scarlet fever, the more synochal or violent will be the reaction of its organism; and the feebler and more cachectic, the more septic will be the symptoms.

By erethitic scarlatina is understood a morbid condition like that we have presented above as a normal scarlet fever. The eruption and the local and general phenomena appear with no dangerous severity, and the termination is therefore always favorable. Still, such a result cannot always be predicted from the character of the pre-

cursory stage and eruption, for the character of the fever may change at any time.

The synochal, inflammatory form is distinguished by the rapid appearance of the disease, violent fever, intensely-developed exanthema, accompanied by miliaries, considerable angina, and cerebral phenomena, sleeplessness, delirium, headache, and intolerance of light.

In some epidemics, the torpid or the nervous form is predominant. In this case the disease begins from the very first with great prostration, vertigo, muttering delirium, syncope, and coma. The pulse is extremely rapid, but small, and readily compressed. The angina is disposed to take on the diphtheritic form. The exanthema breaks out only imperfectly on some parts of the body; the extremities are oftener cool than warm. The tongue becomes dry, as in typhus-fever patients; in fact, even profuse diarrhœa comes on, and the patients usually die very soon after, or between the second and fourth day of the disease. No local causes sufficient to explain the death, as a rule, are found at the autopsy, so that we have to assume the influence of a supposed scarlet-fever poison upon the blood and nervous system. When children survive this stage of the disease, they are still liable to suffer from its sequelæ, and the convalescence in all cases goes on very slowly.

The septic form may be looked upon as the highest grade of the disease in which the eruption usually does not break out at all, and the diphtheria of the mouth soon becomes gangrenous, death ensuing in the shortest time it ever occurs in scarlatina, and preceded by the formation of petechiæ, profuse hæmorrhage from the nasal mucous membrane, from the bowels, and from the kidneys.

4.) Anomalous Localizations.—The local lesions are not always limited to the skin and mouth. In some epidemics other organs become involved. Thus it is reported of some epidemics, where many children, at the climax of the disease, were attacked by pleurisy or pneumonia, and succumbed to them. In others, the children died suddenly under tetanic convulsions and severe œdema; even purulent effusion in the brain was found at the autopsy. Sometimes the intestinal mucous membrane participates in a high degree, especially at the commencement of desquamation, and profuse intestinal catarrh, or dysenteric diarrhœa, with very painful tenesmus, comes on. But the most frequent of all anomalous localizations is that upon the kidneys, by which acute Bright's dropsy is produced. This has already been treated of in detail on page 443. In some epidemics it occurs very early in the disease; in others it is hardly observed at all. In the latter epidemics, in Munich, it was one of the greatest rarities, and did not appear even among the poorest class, where the want of



all care and attention would lead us to expect it with great certainty In other epidemics half, and even more, of all the patients became dropsical, notwithstanding the best of care and nursing; and, although it cannot be denied that a judicious treatment might possibly be capable of warding it off, still it must be confessed that the main cause is to be looked for in the character of the epidemic.

Where the angina is considerable, very generally tumefaction of the cervical lymphatic glands, and occasionally parotitis, supervene. More details concerning this affection are to be found on page 115, in the section which treats of metastatic parotitis. From the same source a coryza or an otorrhœa may also become developed by the disease of the mucous membrane, particularly the diphtheritic form, extending into the nares, or, by implication of the Eustachian tubes, induce an otorrhœa interna, which may result in perforation of the tympanum.

Lastly, *metastases* on the subcutaneous cellular tissue, with profuse suppuration, are also observed, and in the torpid and septic form gangrenous bed-sores quickly come on.

The *sequelæ* of a grave scarlet fever are very numerous. Those most frequently observed are chronic serous effusions into the pleura or peritonæum after Bright's disease, imbecility, chorea, paralysis, deafness, blindness, and noma, in cachectic children improperly cared for.

The differential diagnosis of scarlatina and measles will be given presently, when we speak of measles. Neither pathological anatomy, nor the chemical investigations of the blood, nor of the excretions, furnish any clew regarding the nature of scarlatina-poison. No constant morbid alterations, with the exception of tumefaction or diphtheritis of the tonsils, are usually found in the cadaver.

**Etiology.**—Scarlatina originates by contagion. It adheres strongest to the scales of the integument which were thrown off during desquamation, and for that reason, also, does infection occur most frequently at this time, and *not* during the florescence of the exanthema, during which it is most possible to transport the disease with the patient, and thus limit its extension. On the whole, the epoch with which the capacity for infection begins and terminates is not yet positively established. Instances are related where children infected others during the precursory stage, and some again where infection took place long after desquamation had been completed.

The contagiousness is not equally declared in all cases; in some it is so eminent that all the children of a family fall sick as soon as the fever has broken out in one; in others it is so mild that the majority of the family remain well, notwithstanding frequent intercourse. *Stoll*, *Harwood*, and *Miquel*, have performed numerous inoculations