The spontaneous course of all the forms is, although tardy, almost invariably favorable. A hernia prolapsed through the unclosed inguinal canal is an unfavorable complication, as it is thereby prevented from closing, and the absorption of the hydrocele is retarded. In almost all the other cases spontaneous absorption of the effused fluid takes place in the course of time, although often not till after many months. A thickening of the tunica vaginalis propria only remains behind. Absorption occurs even in the rare cases of hydrocele which communicate with the peritoneal cavity; the inguinal ring generally becomes closed when the lower extremities are more freely exercised.

Treatment.—Since almost all hydroceles, in children who have not yet passed beyond the first year of life, get well spontaneously, it is only a question of promoting this cure by Nature, with appropriate means; those most generally regarded as such are dry warmth, aromatic fumigations, astringent fomentations of ammonia and vinegar, wine, diluted tincture of iodine, etc., and finally compressing the tumor by adhesive plaster or collodium. The congenital open hydroceles heal quickest, when their contents are forced back into the peritoneal cavity and retained there by a truss. The simplest and surest remedy, after all, is acupuncture. This may be performed with any plain sewing-needle. The scrotum is made tense over the tumor with two fingers, and then it is punctured several times in succession. A drop of the serous fluid follows each punctuer, but, while the external openings in the skin instantly close again, the perforations in the tunica albuginea remain open much longer, and the serum now escapes into the other textures, producing an œdema of the scrotum which, after a few days, is spontaneously absorbed; the external and internal lamellæ of the tunica vaginalis have in the mean time become so firmly consolidated that no future effusion can occur. This little operation may subsequently be repeated without any harm, if the first trial be not entirely successful.

Hydrocele in older children, and that of the spermatic cord, disappear also without any surgical interference, by the simple use of iodine locally.

D.—*FEMALE GENITALS.*

(1.) Malformations.—Malformations of the female sexual organs, in general, are rarer than those of the male, and with few exceptions are only discovered at the time of puberty, for the symptoms which they occasion first appear with pubescence.

In order to thoroughly comprehend these malformations, it is necessary to learn from embryology that the uterus, Fallopian tubes, and vagina, are developed in such a manner, from the canals of Müller,

that the lower part of the latter is converted into the canalis genitalis, and that a transverse indentation then follows, by which it is divided into two portions, the uterus and the vagina. For this reason all these malformations may be arranged, according to *Veit*, in two classes: the first originates through a defective development of one or both canals of Müller; the second through an abnormal union of the two canals in all other respects perfectly developed.

First class: (a.) The canals of Müller have been entirely arrested in their development, and therefore neither uterus nor vagina exists. The external genitals terminate in a short *cul-de-sac*. (b.) The vagina is present, of a normal length, but the uterus is absent, or it is only rudimentarily developed. (c.) Vagina and neck are of normal size, but the body of the uterus, owing to the defective coalescence of the commencing portions of the canals of Müller, is divided—uterus bicornis—atrophic, and terminates in two atrophic oviducts. (d.) Only one of the canals of Müller is deformed, or totally absent, by which the uterus unicornis originates. The corresponding ovary in this case is mostly normally formed; on the whole, however, the ovaries in deformity of the uterus are generally also defective.

None of these malformations give rise to any symptoms in children, and, as they produce no external alterations of form, remain also undiscovered. But, with the appearance of the menses, various disturbances come on, and a menstruatio vicaria becomes established in some other part of the body.

Second class: (a.) The uterus is well developed, but its cornua are divided—uterus bicornis. (b.) The division runs through the whole organ, two vaginal portions project into the single or also double vagina, in which case even two hymens may exist. (c.) Externally no alteration of form whatever, or only a superficial groove, can be detected on the uterus, but its cavity is divided by a central septum into two perpendicular, adjacent compartments, uterus bilocularis.

Even these malformations have no unpleasant influence upon the development of the child, and are almost always only accidentally seen in autopsies. A divided vagina and double hymen, however, will not escape detection.

The conditions described as malformations of the external genitals usually are not really congenital, but form in the course of years from originally normal genitals. This is especially true of the enlarged clitoris, and the elongated labia majora, the so-called "Hottentot's apron." A partial closure of the external labia occurs besides, in small girls, who have suffered from severe deep diphtheritic ulcerations of those parts, and were not treated with a proper amount of cleanliness and care.

(2.) Catarrh of the Genital Mucous Membrane (*Fluor Albus, Leucorrhœa*).—**Symptoms.**—By fluor albus we understand such an augmented secretion, by the vagina and vulva, that the discharge makes its appearance in drops upon the labia majora, and may flow down upon the perinæum and thighs so as to soil the linen, and, drying, forms large crusts upon the labia. A secondary redness and swelling are thereby produced, and in summer, if the parts are not kept clean, will result in ulceration of the external genitals and adjacent parts.

At first the secretion is thick, bright yellow, homogeneous, but subsequently, toward the end of the disease, or in scrofulous girls, from the very beginning is viscid, muculent, filamentous, poor in cells, very much like the catarrhal mucus of the nose. If ulcerations have already formed, the blood derived from that source becomes mixed with the mucus and gives it a brownish color. It is not possible in little girls to decide the place of origin of this secretion, whether it comes from the uterus or vagina, for the hymen is always swollen and a dilatation of the vagina by the aid of small specula is very properly reluctantly resorted to. The rapid course of leucorrhœa in children shows plainly that the discharge comes from the mucous membrane of the vagina and not from that of the uterus, whereas blennorrhœas of the uterus in the adult are well known to last for years, notwithstanding the most persevering treatment.

If the crusts which agglutinate the external genitals are soaked off, and the vulva, external labia, and hymen are examined, they will be found œdematous, reddened, and painful to the touch. Urethritis, which manifests itself by the flow of pus from the urethra, and by severe pain on micturition, is sometimes, but not frequently, present. Older girls complain also of pain about the genitals, and walk, especially when excoriations are present, with outspread legs, in order to avoid friction as much as possible.

The course of leucorrhœa is always chronic, and I cannot recall a single instance that got well under six weeks; still, there is always a better prospect of recovery than in adults. But, in children with advanced tuberculosis and hectic fever, I have seen it persist till death, in an undiminished degree, and, at the autopsy, that warty granular condition of the vagina, which we so frequently observe in old leucorrhœas of the adult, was found.

Causes.—It certainly cannot be denied that infection through gonorrhœal virus occurs even in children a few years old. An unfortunate superstition exists among the public, that gonorrhœa of the male organ disappears when it is brought in contact with a hymen, and upon this belief many unchaste seductions are committed. Whoever has frequently examined and watched these unfortunate children will

have noticed the singular, embarrassed, shy feeling they are affected with. If the simple question be put to them, where did the disease come from, ingenuousness vanishes, and they either protest their innocence with remarkable perfidious vivacity, or are thrown into a state of visible embarrassment, and timidly answer, in an undertone, that they know nothing about it. If nothing strange can be perceived in the conduct of the child, it may be assumed with tolerable certainty that no infection has taken place, and a spontaneous or mechanical origin must be regarded as probable. If condylomata are present upon the labia majora and around the anus, there is no longer any doubt that a true infection has taken place.

Leucorrhœa originates spontaneously, particularly in scrofulous and tuberculous children, living in damp houses. It is also produced mechanically by the introduction of foreign bodies, or from oxyuris gaining admission into the vagina, or lastly by onanism. The funnel-shaped condition and marked tumidity of the external genitals, so urgently insisted upon in medical jurisprudence as a symptom of rape having been committed, can only be of value after frequent repetitions of the act which make the condition well marked. No permanent alteration of form, not even any decided contusion or tumefaction, can ever originate from the simple contact of the glans penis with the hymen.

Treatment.—It is immaterial in the treatment whether the leucorrhœa has originated spontaneously or from gonorrhœal infection. In both cases cleanliness and daily baths render very important service. Those produced mechanically get well quickest—after a piece of wood, a bean, glass bead, or some similar substance, has been removed. These objects, however, are often concealed behind the hymen and are not easily found. The redness and swelling will disappear in a few days.

When leucorrhœa is caused by oxyuris, the cure is about as easily effected by properly syringing the rectum daily with cold water, and the vagina, on account of its greater sensitiveness, with warm water. The prognosis is much worse when onanism is the cause of this disease. On account of the pain it causes, the girls do indeed stop masturbating for a time, but they begin their pernicious practice again as soon as the irritation and pain have subsided, and thus constant relapses are produced, which can only be prevented by the strictest surveillance, which has to be continued unceasingly day and night.

Leucorrhœa that has originated from contact with gonorrhœal contagion lasts at least six weeks, and may persist for many months. The inflammatory affections, redness, pain, and swelling, are at first so severe, that the child is not able to walk, and the discharge rapidly

excoriates the labia and thighs. The disease is also most obstinate, even when not gonorrhœal, in very scrofulous or far advanced tuberculous children, in whom it lasts for years, and, when hectic fever comes on, will continue till death.

To robust, healthy children, in whom the disease was produced by infection, laxatives, jalap, senna, aloes, and neutral salts, may be given for a long time with advantage; cachectic individuals, on the contrary, must be treated from the very commencement with tonics, iron, cinchona, and meat diet.

The local treatment, on account of the smallness of space of the infantile genitals, is limited to zealous injections of cold or warm water, and the introduction of a piece of lint into the vulva at bedtime. Much benefit is derived from soaking this compress in a solution of alum (ʒ j to water ℥ j) or of tannin (ↃJ to water ℥ j). Sulphate of iron and nitrate of silver are indeed also efficacious remedies in leucorrhœa; they, however, totally spoil the linen, and are therefore very reluctantly resorted to by economic mothers.

In scrofulous children, sea-baths and the waters of springs containing iodine (Heilbronn, Kreuznach), likewise cod-liver oil, render the best service. Cutaneous diseases, eczema, impetigo, and prurigo, existing upon the external genitals, must be removed as quickly as possible by cleanliness and desiccating ointments, for they are constantly bathed by the vaginal discharge, and the two evils act injuriously upon each other.

(3.) Diphtheritis and Gangrene of the Female Genitals.—*Diphtheria* rarely if ever occurs sporadically, but only in badly-ventilated hospitals, foundling-houses, and orphan asylums. In this country it is in general rare, and is most frequently encountered during and after malignant epidemics of measles, when it also comes on in the overfilled, damp tenement-houses. Diphtheritis is no local, but a general disease, as has been already elucidated in the chapter on croup, and as is seen from the fever, rapid collapse, and generally fatal termination.

The disease begins like simple fluor albus, with redness and swelling of the vulva, but violent fever, hot skin, frequent pulse, and increasing thirst, soon supervene. If the labia majora are now separated, the mucous membrane will be seen covered with islands of white membrane. In shape they are sometimes circular, sometimes again very irregular, from the coalescence of several islands. At first it is not easy to remove them; they, however, soon disintegrate into shreds, and leave behind them yellowish-gray bases, upon which, after the first shreds have fallen off, new membranous exudations quickly appear. The parts of the mucous membrane free from these exudations

are tumid, and of a dirty-red color. The odor of the sanious discharge is very offensive and persistent. The general state of the system indicates a grave disease, the fever assumes a typhous character, the ichor finally emits a gangrenous odor, the false membranes and the subjacent tissues also become gangrenous, and death ensues in a few days from the commencement of the disease.

Gangrene of the vulva is caused either by diphtheria, or comes on like noma, in children who have just passed through a severe febrile disease, such as typhus fever, small-pox, scarlatina, or measles. Sometimes it comes on so rapidly, and without any subjective symptoms, that the attention of the relatives is first attracted by the gangrenous odor. This leads to a careful examination, when a few gangrenous vesicles, as a rule, are found upon the internal surfaces of the labia majora, which soon burst and give exit to a gangrenous ichor. In other instances, where the mortification has invaded the deeper structures of the labia, the latter will become œdematous, assume a bluish color after the pains have existed for several days, and finally burst, when a large gangrenous surface will make its appearance. The mortification is mostly moist, spreads rapidly, and ultimately terminates in death. Besides the local destructions, catarrh of the mucous membrane of the air-passages, and frequently also pyæmic emboli in the lungs, spleen, etc., are found in the cadaver.

Therapeutics.—The treatment of these serious diseases is very unsatisfactory. Internally, carbonate of potassa (ʒ j daily) is recommended as a specific in the diphtheritis; usually, however, the fatal end cannot be averted even by this remedy. The stimulating treatment should be resorted to as early as possible, especially in gangrene. Topically, the parts should be pencilled with concentrated mineral acids, or a strong solution of corrosive sublimate. The latter exercises a marked favorable effect upon the diphtheria, while in gangrene it has invariably proved inert in all those cases that I have observed.

(4.) Hæmorrhagia Vaginæ (Bleeding from the Vagina).—In a new-born girl, or in girls a few days old, a slight vaginal hæmorrhage is observed in some rare cases. Usually, the bleeding is insignificant, and a few drops only ooze out from between the labia during the day. The breasts often swell up at the same time, and on moderate pressure will give exit to a few drops of milky fluid.

Vaginal hæmorrhage never becomes profuse, and as such is not dangerous; but, in the two cases that I have had the opportunity to observe, profuse intestinal catarrh and atrophy ensued in a few days, a condition which, after all, may perhaps more justly be attributed to the want of the breast of the mother, than to the preceding hæmorrhage.

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-