the vascular tissue beneath,[1] a small ulcer will be found, which has the characters of a chancroid, characters which apply to a chancroid ulceration of whatever size, wherever situated, originating from natural contagion or from inoculation. These characters are: a rounded, sometimes oval margin, abrupt, perpendicular edges, looking as if they had been cut out by a sharp-edged punch, sometimes everted. The ulceration is rather deep considering its extent; in very rare instances, shallow, like herpes; the bottom is irregular, velvety, grayish-yellow, covered by a pultaceous, adherent substance resembling false membrane, or wet wash-leather, composed of partly-destroyed elements of the skin and pus, with perhaps some irregular, pale granulations. The whole is usually bordered by a pink areola. Under favorable circumstances, there is no surrounding inflammation, there is no hardness under or around the ulcer, which rests on a perfectly soft base. The suppuration is abundant, rather thick and creamy, mixed with organic detritus, not generally tinged with blood. There is little or no pain. Such a description applies to a type case which has never been irritated mechanically or chemically. This single ulcer runs through its stages of increase, stationary period, and repair, provided it is allowed rest and is not irritated, and pursues a natural course, as follows:

Course of Chancroid.—It increases in size for one or two weeks, preserving its characteristics, and reaching a variable size, often not larger in diameter than a quarter of an inch. Of this size it remains for a period of perhaps two weeks, undergoing no appreciable change; or there may be no stationary period, repair setting in at once after the ulcer has reached a certain size. Finally, repair is announced by a more creamy, laudable condition of the pus, a sloping of the abrupt edges, and a clearing up of the cavity of the ulcer, which becomes rosy, granular, and gradually cicatrizes from the edges toward the centre. During the whole period of its existence the chancroid furnishes auto-inoculable pus. The old theory, that after repair was well advanced the secretion ceased to be poisonous, is no longer tenable. Truly the degree of virulence is lessened with advancing repair, but Fournier has recently been able to obtain occasional positive results by auto-inoculation from chancroids which were nearly cicatrized.

This important fact, that the secretions of chancroid are contagious until the cicatrix is formed, has but two exceptions: 1. When gangrene attacks a chancroid, its discharges are not contagious, nor does the granular surface left by the separation of the slough any longer afford a poisonous secretion; 2. Certain very old chancroids, usually such as have been of considerable size, and are situated in positions where they are kept irritated and prevented from healing, perhaps for

[1] Fournier, in a carefully-observed statistic of fifty-two cases, where the patient would acknowledge but one sexual contact for the previous four or five months, found twenty-four developed within the first four days, forty-one within eight days, others later, the sore being often quite large when discovered.

years, sometimes lose their poisonous properties finally, and become simple chronic ulcers, kept open by contact of irritating discharges, muscular contractions, and motion of the parts on which they are situated. Such ulcers are found in the anus and rectum of the male, and in the vaginæ of old prostitutes—p. 486 (*e.*).

The scar left by chancroid varies with the depth of the ulcer. It may be so faint as shortly to disappear, leaving no trace; or, again, may remain indelible, as a seamed and puckered, unsightly scar, of a size proportioned to the previous ulceration.

But this mild and simple sequence of event in chancroid is far from being constant. All sorts of variations from the natural type occur: in (*a*) initial form, (*b*) shape, (*c*) number, (*d*) size, (*e*) duration, (*f*) pain, (*g*) condition of base, (*h*) relapse, and finally the complications of: (*i*) vegetations, (*j*) syphilitic chancre, (*k*) inflammation, (*l*) gangrene and gangrenous phagedena, (*m*) phagedena, (*n*) bubo, (*o*) lymphitis.

(*a.*) Varieties in Initial Form.—Usually chancroid of a mucous membrane presents itself from the first as an ulcer, but occasionally the initial pustule may be seen. This breaks, disclosing the characteristic ulcer, or, occasionally on the skin, does not break, but dries into a scab. The scab increases in size by additions of pus from beneath, and covers the ulcer; but the pus which may be squeezed from the sides, by pressure upon the loosely-attached crust, is auto-inoculable, and if the crust be removed true chancroid is disclosed. The French call this form "ecthymatous chancroid." Again, the chancroid pustule may originate in the orifice of a sebaceous gland of the scrotum, or penis, and be mistaken readily at first for simple acne, or the lesion may resemble a small boil at its commencement (follicular chancroid). The primary lesion may be a papule surmounted by a pustule, or, still more rarely, a bulla (Fournier). These latter forms are exceptionally rare.

(*b.*) Varieties in Shape.—The usual round or oval form of chancroid is subject to exception. If a wound be inoculated, the chancroid takes the form of the wound. So of a fissure, as is often beautifully seen in chancroid of the anus, such a chancroid being frequently multiple, standing off in rays from the puckered centre, or extending up irregularly into the gut, perhaps for several inches. Two neighboring chancroids may coalesce, producing one sore of irregular shape, with borders composed of segments of circles. The ulcer may undermine the frænum, or follow around the sulcus behind the corona glandis. It may cicatrize on one side, and advance on the other, or finally assume any variety of shape from the modifying influence of gangrene or phagedena.

(*c.*) Varieties in Number.—Chancroid may be unique, or any given number may coexist. Sperino, in practising syphilization, was in the habit sometimes of inoculating in eighty places at once, since he found that, by so doing, the size of the resulting ulcers was smaller. Chan-

croid is often multiple from the first, when several abrasions are simultaneously inoculated during the sexual act; or, starting unique, may become multiple to any extent by auto-inoculation, especially inside the prepuce; anal chancroid is usually multiple. It is not uncommon with a tight prepuce to find half a dozen small chancroids situated just on the preputial margin, or the whole rim may be one ulceration. Usually, when chancroid is multiple from the beginning, each ulcer is small.

(*d.*) Varieties in Size.—The size varies from that of the head of a pin to enormous phagedenic surfaces, covering half the belly.

(*e.*) Varieties in Duration.—A chancroid untreated never lasts less than a month. The larger the size the slower the repair, other things being equal. Gangrenous sores may continue for months, and phagedenic serpiginous chancroids, as a rule, for many months, exceptionally for a number of years. Chancroids of the meatus urinarius, constantly irritated by urine, are very slow in getting well. Certain old chancroids of the rectum, which have partly cicatrized, forming stricture, may be kept open by local irritation, and perhaps never get well, although their secretions finally cease to be inoculable. The same may be said of certain old chancroids in the female vagina, which erode large portions of the walls of the canal and the labia, perhaps at the same time extending over the perinæum, and including the anus and rectum. These also finally cease to progress, but remain open for years, as simple chronic ulcers, not auto-inoculable, perhaps surrounded by hardened cicatricial tissue, attended by little or no pain or inflammation; perhaps resting on a hard base, looking pultaceous or sometimes dry and red without granulations. These ulcers are kept from healing by the condition of the patients, mostly middle-aged prostitutes, broken-down hospital cases, often suffering from syphilis at the same time, and by the contact of urine and the movements of the parts; the hard, unhealthy base of the ulcer proves also a decided obstacle to healthy action in the sore. This variety of ulcer has been best described by Boys de Loury et Costilhes.[1] These ulcerations in the female vagina are often mistaken for tertiary syphilitic serpiginous ulcers, especially if the patient have syphilis at the same time. The distinction is often difficult, even impossible, except by studying the history of the ulcer. Syphilitic ulcer will be found to have commenced as a tubercle, having no connection in point of time with sexual intercourse, and there will often be some tuberculization of the edges of the sore. Tubercular syphilitic ulceration, once started, may become phagedenic, just as well as chancroid; and the contact of urine, the habits of the patient, motion, the callous condition of the base of the sore, etc., may prevent anti-syphilitic remedies from exerting such a marked beneficial influence as might have been expected, so that diagnosis becomes exceedingly difficult. Should

[1] "Des Ulcerations chroniques, ou Chancres chroniques des Parties génitales de la Femme," Paris, 1845.

some of the poisonous secretions, however, still remain upon the ulcers, auto-inoculation, if it takes, will at once remove all doubt, and this test may be employed. A negative result, however, does not prove that the lesion was not a chancroid at its commencement, and the probability is always in favor of such a supposition. Phagedena alone does not destroy the inoculability of the discharge. Some authors describe these ulcers as a variety of lupus.

(*f.*) Varieties in Pain.—Chancroid may be almost entirely painless, only attended by some itchy, prickling sensations. Any irritation applied to it, however, occasions pain at once, so that clinically, instead of being absent, pain is usually a diagnostic symptom of chancroid, serving to distinguish it from syphilitic chancre. All sorts of irritating and many simple stimulating dressings are liable to cause pain, sometimes even cold water (Fournier). The position of the sore on the end of the penis, which usually hangs down, erections, which pull upon its edges, contact of urine, retention of pus on the surface, all these causes serve to inflame a chancroid and give rise to pain. In two pathological conditions pain is often very severe in chancroid, when it is attacked by gangrene, or by phagedena, and when it is advancing rapidly.

(*g.*) Condition of the Base (Induration).—The chancroid when not irritated reposes upon a perfectly soft base. When irritated or inflamed, an induration is caused, sometimes slight, sometimes extensive, recalling the hardness around a boil. This is an accidental and not a natural phenomenon, and is an important distinguishing mark between chancroid and syphilitic chancre. The base of herpes, excoriations, abrasions, vegetations—in short, of any lesion about the genitals—is liable to indurate if irritated or inflamed. Sometimes this induration resembles syphilitic induration very closely, but usually it is easily distinguishable. It is an inflammatory hardness, the tissues are evidently glued and matted together, the edges of the induration lose themselves gradually in the surrounding tissues, and do not end abruptly as in syphilitic induration. There is more pain on pressure than in the latter. The induration never precedes ulceration as in syphilitic chancre, and, finally, the feel itself is different, very unlike the woody, cartilaginous, elastic feel of syphilitic induration. Besides inflammation from any irritating cause, contact of urine, friction, position (chancroid of the meatus urinarius almost invariably indurates, as do most often chancroids under a tight prepuce, which has become phimotic from inflammation), many substances commonly applied as dressings to chancroid are directly instrumental in causing hardness of the base; all caustics, acid, or alkaline, especially if applied sparingly, and perhaps most particularly nitrate of silver, solution of corrosive sublimate, or chromate of potash (Fournier). In fact, there are so many natural, accidental, and medicinal causes for induration, that it is rather surprising that any

chancroids escape them all and remain soft to the end, as many of them certainly do.

(*h.*) Relapse.—A chancroid may have fairly entered the period of repair, or even be far advanced in it when, suddenly, perhaps from irritation, often without appreciable cause, it relapses, resuming all the characteristics of chancroid, and advancing a second time for a variable period. More rarely a relapse may occur a second or even a third time.

COMPLICATIONS OF CHANCROID.

Of all the complications of chancroid—inflammation, vegetations, phimosis, paraphimosis, lymphitis, erysipelas, gangrene, phagedena, simple bubo, and virulent bubo—not one is peculiar to chancroid, except the last. Each and all of the others may complicate any herpetic, simple, inflammatory, or even syphilitic lesion of the genitals, but naturally they are oftener found with the more virulent sore—chancroid. This fact must be constantly borne in mind.

(*i.*) Vegetations.—These papillary growths may complicate chancroid, as they may any other lesion (inflammatory, syphilitic, or gonorrhœal), especially of the prepuce or around the anus (for Vegetations, *see* page 21).

(*j.*) Syphilitic Chancre may complicate chancroid by appearing alongside of it, or on the same spot as *mixed chancre* (which *see*, p. 526).

(*k.*) Inflammation, spontaneous (from plethora, debility, drinking), mechanical (from friction, erection, position), chemical (from contact of urine, lack of cleanliness, inappropriate dressings), is a frequent complication of chancroid. Especially is this true when the ulcer is sub-preputial, if the prepuce be long or congenitally tight. Phimosis and paraphimosis are often encountered with chancroid, lymphitis is very liable to occur (with enormous œdema of the prepuce, perhaps of the whole penis), and possibly erysipelas, while the retained discharges and the tension of the parts predispose strongly to sloughing and phagedena. An inflamed chancroid gets painful at once. It indurates, and may become livid, its secretion grows thinner and more bloody, while its ulceration deepens. Inflamed chancroid is very liable to be attended by suppurating bubo. Abscess may form in the thickness of the prepuce, and, opening, remain indefinitely fistulous. With phimosis pus may be retained and burrow backward, sometimes in a narrow tract at the end of which an abscess forms, opens, furnishes inoculable pus, and remains fistulous. This burrowing may sometimes go on to an enormous extent. Vidal saw a case where the whole skin of the penis was separated up to the root of the scrotum. The integument of any portion of the body may undermine from retained chancroid pus, by a species of subcutaneous phagedena. In patients who are run down constitutionally, chancroid sometimes pursues a course of slow, chronic inflammation. Such an ulcer is painful, surrounded by a red areola, with perhaps a hard base

and undermined border. The base looks pultaceous, discharges a thin, perhaps sanious, secretion, which often dries into a scab. Chancroids of this description may increase in size and become phagedenic or remain stationary for a long time. They are sometimes attended by paroxysms of feverishness, with symptoms of gastric disturbance.

(*l.*) Gangrene and Gangrenous Phagedena.—Gangrene is a complication not confined to chancroid, as it may be engrafted upon other lesions of the penis. It is of two kinds: total (self-limiting), or progressive (phagedenic). The first-mentioned variety commonly accompanies a high degree of inflammation, as in connection with inflammatory phimosis or paraphimosis, where the tension of the parts is great, and they suddenly and in totality fall into gangrene. In this way the whole prepuce may be lost, artificial circumcision being neatly performed by the separation of the slough. The whole glans penis may slough away, or a swollen and inflamed prepuce, retaining the pus of the chancroids within, perhaps suddenly becomes blackish green over a greater or less area, a slough forms, separates, letting the head of the penis through, leaving behind a seemingly double-headed, unsightly member, the remains of the prepuce below becoming hardened, œdematous, sometimes greatly increased in size by chronic inflammatory hypertrophy. Total gangrene rarely attacks chancroid, except where the ulcers are sub-preputial.

Besides the immediate exciting cause (great inflammatory tension), the predisposing causes are any debilitating agencies, malarial or other cachexiæ, old age, alcoholism, etc. Total gangrene of the whole chancroidal surface at once destroys it just as certainly as does the thorough application of an efficient caustic. In both cases alike neither the slough nor the pus formed beneath it in the natural process of its elimination possesses any poisonous, inoculable properties. After the slough has fallen, a healthy, granulating, non-virulent ulcer is left, which usually goes on at once to repair, with rapidity proportionate to the vitality of the individual. But just as an imperfect application of caustic to a chancroid only produces a partial slough, and does not do away with the poisonous properties of the sore, since the virus is secreted by all portions alike, and if any is left the whole is repoisoned, so there may be spontaneously progressive gangrene of the phagedenic sort, attacking a chancroid not thoroughly destroying the secreting surface, and consequently not interfering with the inoculable properties of the pus. Under these circumstances a black slough forms on the surface of the sore, but it does not separate; pain continues, and a new slough forms or the old one progresses; and so on, in a phagedenic manner, sometimes slowly, sometimes rapidly, often large portions of skin and underlying tissue being destroyed before the sloughs finally separate, and leave healthy surfaces beneath. This variety of gangrene constitutes one (the less common) form of phagedena, and is responsible for many of the

extensive mutilations accompanying chancroid. With forming or advancing gangrene there is intense pain, and always some general constitutional disturbance, fever, etc., which does not obtain in true phagedena.[1]

The physical signs of gangrene, when attacking a chancroid which is visible, are similar to what is observed in gangrene elsewhere. The ulcer first begins to look grayish, the patient suffering great pain; then it becomes violet, finally greenish black, while the discharge grows thin and fetid. A line of demarcation finally forms, surrounded by an inflammatory areola, and, if the slough includes the entire ulcer, its separation leaves a healthy granulating surface behind.

(*m.*) PHAGEDENA is molecular gangrene. But molecular gangrene is not able to destroy the poisonous surface rapidly enough to make the ulcer a healthy one; hence phagedena, as applied to chancroid, signifies large extension of the ulcer with preservation of its specific (inoculable) properties. Phagedena, most commonly found with chancroid, is not confined to this variety of sore. Syphilitic chancre is sometimes phagedenic (Rollet thinks only in the gangrenous form); different ulcerated syphilides and scrofulides occasionally become phagedenic.

Phagedena advances superficially, or in depth, or both at once. It is pultaceous in type, or, more rarely—as detailed above—gangrenous. The latter form, often largely destructive, is comparatively rapid; the common form (pultaceous, superficial, serpiginous, ambulant) is exceedingly slow. Phagedena advancing on one side often gets well with proportionate rapidity on the other.

Clerc has established that a chancroid never commences phagedenic, but always becomes so secondarily, after having existed for a while uncomplicated. Chancroidal phagedena seems often to be arrested by coming into contact with tissue of a different order from the one it is attacking. It shows a predilection for cellular, connective tissue, as in undermining the skin of the penis. Belhomme[2] gives a striking instance of a phagedenic serpiginous chancroid of the skin stopping suddenly on reaching the mucous membrane. This cannot, however, be always counted on, but the tendency exists, as is well shown by the fact that vessels, nerves, and glands, are often dissected out, and spared by the advancing ulceration. The corpus spongiosum, corpora cavernosa, and testicles, may be bared by phagedena, but themselves remain untouched. Fascial expansions, and fibrous tissue generally, may be expected to oppose the destructive march of phagedena; but sometimes nothing is spared, all the tissues being eaten through indifferently—by the variety of phagedena which destroys in depth (mainly by slough).

Phagedena attacks virulent bubo perhaps as often as it does chancroid. It seems, however, to spare all except virulent buboes.

[1] Cases of this sort are not uncommon in hospitals.
[2] "Du Chancre phagédénique et de son Traitement," Thèse de Paris, 1862.

The serpiginous (*serpere*, to creep) phagedena (unlike the gangrenous form) is attended by not very great pain, and no constitutional disturbance; there may be slight headache, *malaise*, etc. As it commences, the surrounding skin reddens, the borders of the ulcer swell and undermine. The true characters of chancroid are retained by the sore throughout, the base is uneven and (sometimes with exuberant granulations) covered by the same grayish, adherent, false-membranous-looking material, whence the name pultaceous chancroid. The edges are sharply cut, gnawed, uneven, abrupt. The discharge is thin, sanious, and inoculable to the end. The edges are often undermined, thin, purplish, perhaps œdematous. Pain of a burning character at the edges indicates advance of the process.

This form of phagedena lays bare the penis, sometimes the testicles, and may travel up over the abdomen, and to any extent farther. Usually, however, the largest, most persistent chancroids originate in bubo (which see), but the characteristics of the ulcer are the same, whatever its origin. No definite duration can be assigned to phagedena. The chronic serpiginous form, untreated, always lasts many months, sometimes many years. The longest case recorded (Fournier), commencing in the groin in a virulent bubo, was still present as an open ulcer of the knee after fourteen years, having healed up behind as it advanced, and this, indeed, was not untreated, but had been under Ricord's care for several years.

The course of phagedena, like that of chancroid, may be continued by successive relapses. Perhaps after cicatrization is nearly complete, phagedena recommences without evident cause, and the whole cicatrix reopens.

The causes of phagedena are (1) general and (2) local.

1. *General.*—Whatever depresses the vital force—bad hygiene, intemperance, misery, digestive troubles (Ricord), scrofula, lymphatism, scorbutis, malaria. Chronic alcoholism and old age are prominent as general causes.

2. *Local.*—Lack of cleanliness, phimosis from retention of pus, fatty substances as dressings, particularly mercurial ointment, which Ricord considers a very active cause, all sorts of local irritation, friction, etc. Sperino,[1] Salneuve,[2] Rollet, and others, have inoculated from phagedenic chancroid, producing only simple chancroid; and Sperino, with other syphilizers, has shown that the same pus inoculated on different individuals produced in some simple, in others phagedenic sores, while confrontation—that is, examining the woman from whom the man received his sore, or *vice versa*—has frequently revealed a phagedenic sore derived from a simple one. Hence the conclusion: There is no special phagedenic virus. Phagedena is not a property belonging to chancroidal pus;

[1] "Studi clinici sul Virus sifilitico," Turin, 1863.
[2] "De la Valeur séméiologique des Affections ganglionnaires," Thèse de Paris, 1852.

it is rather a property of the tissues of the patient—an individual idiosyncrasy. This fact is substantiated by daily experience, for hetero-inoculations [1] with phagedenic pus have rarely produced more than a simple sore, while auto-inoculation of the same pus is not unlikely to be attended by phagedena. Again, certain individuals are recorded as having had chancroids on two different occasions, both times phagedenic.[2] In some instances, however, we find ourselves unable to detect any cause of phagedena, which may attack patients apparently in the most robust health, where none of the general or local causes mentioned above seem to have been at work. Treatment will be considered under treatment of chancroid.

(*n.*) Bubo and (*o.*) lymphitis will be described after the section on treatment.

Diagnosis of Chancroid. — The diagnosis of chancroid is with herpes, balanitis with excoriations, exulcerated abrasions, syphilitic chancre, simple ecthyma, ulcerated mucous patch, ulcerated (tertiary) tubercular syphilide of the glans penis or prepuce, epithelioma (p. 22). The distinguishing peculiarities of the four most common of these lesions—syphilitic chancre, chancroid, herpes,[3] ulcerated abrasion—will be exhaustively considered side by side in the diagnostic table following syphilitic chancre. Of the others, the ulcerated mucous patch rarely presents the same depth of ulceration, or tendency to spread, and mucous patch furthermore is apt to coexist with other similar lesions of the mouth or anus. Discharge from mucous patches is in a measure auto-inoculable, but does not of course produce typical chancroid. Finally, tertiary syphilitic ulcerations of the glans or prepuce often resemble chancroid so accurately, that no physical characteristic is wanting. Usually, however, the edges are harder, as is the base, the ulceration more irregular in outline, the tendency to eat deeply more marked, the pain and inflammation less. The discharge is not auto-inoculable. With any one of these lesions there may be local inflammation and consequent suppurating bubo, or even lymphitis, but, in any case, if a bubo suppurate and its pus be found auto-inoculable, it has derived its origin with absolute certainty from a chancroid, and from a chancroid only. In any case of doubt, in presence of a suspicious sore, there remains one infallible method of diagnosis; namely, auto-inoculation.

Auto-inoculation is most safely practised in one of three situations: under the nipple, where Boeck has shown that chancroid naturally runs a mild course, over the insertion of the deltoid, or on the outer part of the thigh. In all of these localities the artificially-produced sore is not liable to be complicated by bubo, on account of the distance of the

[1] Inoculations upon one individual from another.

[2] Negroes suffer more than whites from phagedena, as indeed they do from chancroid, bubo, syphilis, or even gonorrhœa as a rule.

[3] Legendre ("Mémoire sur l'Herpes de la Vulve," Archiv. de Méd., 1853) has brilliantly described the difficulty of diagnosis in some of these cases in the female

lymphatic glands, nor is it likely to accidentally inoculate surrounding parts. Of course after an inoculation has fairly taken, and served its end as a crucial diagnostic test, it should be promptly destroyed by a drop of acid. In certain cases it is absolutely impossible to arrive at a diagnosis without consulting this test, as where the chancroid cannot be seen—sub-preputial chancroid with phimosis, intra-urethral chancroid, anal chancroid resembling fissure. In intra-urethral chancroid, the auto-inoculability of the pus is sometimes the only diagnostic symptom; in other cases there is a painful spot in the urethra during erection, and a lump that may be felt from the outside; possibly virulent bubo accompanies it, or, in rare cases, there may arise a peri-urethral abscess in connection with urethral chancroid. Such an abscess opens, furnishes auto-inoculable pus, and remains fistulous (Ricord, Hélot).

Successful auto-inoculations have been made with pus, derived from irritated syphilitic chancre, secondary lesions, especially mucous patch, or in suitable subjects may sometimes be made with pus, from gonorrhœa, simple abscess, fluid around vegetations, pus from a pustule of scabies, etc., and even a pustule may be produced, by simply scratching the skin of certain individuals with a clean, new lancet, going through the motions, but inoculating nothing. Pustules and ulcerations produced by any of these methods need not lead to error. They are not chancroids, and never have been proved to be such, through the production of characteristic chancroid by their hetero-inoculation. And, indeed, even in the first inoculation of these fluids, the chancroidal ulcer, as above described, cannot be produced. An ulcer, indeed, may form, and an ulcer whose pus may be feebly auto-inoculable, if the patient be in a condition favorable to suppuration, but the pustule is usually an abortive one, tending to dry up and scab, the ulcer is small, does not spread like chancroid, nor does it possess the well-known characteristics of the latter. Syphilitic chancre is only auto-inoculable after it has been irritated and made to suppurate freely, and so of the other substances mentioned above; the thicker the secretion is in pus-corpuscles, the more likely is it to occasion a slight ulceration by auto-inoculation, sustaining Van Roosbroeck's theory of the contagious properties of all pus. Then, on the other hand, in certain individuals, any scratch, however made, will fester and produce pus, but it would be difficult to confound such an ulceration with chancroid. In short, these cases of exceptional auto-inoculability of other secretions than that of true chancroid will rarely lead to error. They may serve to feebly uphold preconceived theories, but not to deceive the earnest searcher after truth. The real error to which the well-informed student is exposed, is that of inoculating from the secretion of a chancroid, which has been gangrenous, and deciding against chancroid, because the inoculation did not take, and perhaps, on this account, concluding that his patient has syphilitic chancre, or making the other error of inoculating from a mixed

sore,[1] and wrongfully deciding that there is no syphilis because auto-inoculation takes. Hence the caution to be remembered: chancroids attacked by total gangrene are no longer inoculable, and an ulcer reproducing itself by inoculation may possibly be a mixed sore. Another caution is equally important: only practise auto-inoculation of a phagedenic chancroid under the nipple of a patient. There is always a chance that the new sore, produced upon a subject already predisposed to phagedena, may itself take on the same morbid action, but the chance is less under the nipple than anywhere else, except on the face.

Prognosis.—Chancroid does not endanger life, except very occasionally, from such complications as severe erysipelas, or extensive, sloughing phagedena, by opening a vessel or exciting peritonitis. Practically it may be said that chancroid does not kill; even the immense chronic ulcers of serpiginous phagedena eventually get well.

Certain results of chancroid, however, must not be forgotten. Extensive cicatrices left by phagedena may prove annoying by their subsequent contraction, and the actual destruction of the penis by phagedena practically unsexes the man. Then urethral chancroid is inevitably followed by more or less stricture of that canal at the seat of the lesion. So, also, may permanent phimosis be produced by the cicatrices of chancroidal ulcerations at the orifice of the prepuce. Chancroids of the pockets on either side of the frænum may, but very rarely do, eat into the urethra, and result in artificial hypospadias. Extensive adhesions of the prepuce to the glans penis may occur after chancroidal phimosis, as indeed after the simple inflammatory form.

CHAPTER II.

CHANCROID.

Prophylactic Treatment.—Local Treatment of Chancroid.—Local Treatment of Phagedena.—General Treatment of Chancroid.—Bubo; simple; virulent.—Treatment of Bubo.—Lymphitis; simple; virulent; syphilitic.—Treatment of Lymphitis.

Prophylactic Treatment.—As a rule, chancroid does not come under the surgeon's notice until it is already advancing and beyond the reach of any abortive measures other than actual destruction by caustics. But, on the other hand, it not infrequently happens that a crack or abrasion on the surgeon's finger becomes inoculated in handling chancroids, and then any prophylactic treatment short of caustics becomes valuable. Abortive treatment applied to chancroids naturally acquired is not as effective as against the same produced artificially by inoculation. All the

[1] Inoculation of a preëxisting tubercle-papule, or syphilitic ulceration, with the pus of chancroid, as well as mixed chancre, should be remembered as possibilities.

stronger mineral and some of the vegetable acids, caustic alkalies, and certain salts—as the sulphate of iron, chromate of potash, in solution in water, so weak as not to attack the epidermis—prevent the development of the chancroid if applied over the artificially inoculated point for a considerable time—about two hours—within a period of three to six, and occasionally twelve to twenty-four hours after inoculation has been practised (Rollet). The longer the time which has elapsed after the introduction of the poison the longer must the preventive solution be locally applied to render it inactive, and, naturally, if any portion (as by oblique puncture) has been introduced beneath the epidermis, this epidermis must be removed in order to allow the fluid to exert its power. According to Rodet and Rollet, a concentrated solution of citric acid yields the best results.

Treatment of Chancroid.—Once present in its character of true chancroid, no treatment yields as satisfactory results as the entire destruction of the ulcerated surface by an efficient escharotic, thus artificially imitating Nature, which sometimes at once destroys the poisonous character of the sore by total gangrene of the secreting surface. Any active caustic may be used, but among them three hold the most prominent places, as being easily manageable and least painful; these three are: nitric acid, sulpuric acid, and the red-hot iron. The latter is often objectionable as greatly exciting the patient's fears, but indeed needlessly so, for the actual cautery is perhaps the least painful of all; the idea, however, is repulsive to a patient. The caustic alkalies deliquesce, and are unmanageable, besides paining more than the acids; the latter remark holds good of the Canquoin, Vienna paste, etc. In applying a caustic, every portion of the sore should be thoroughly and absolutely destroyed, and all existing sores, should there be more than one; for, should any ulcer secreting virus be left active, it will speedily reinoculate the raw surfaces left by the separation of the eschars, and the result would be other chancroids, by auto-inoculation, larger than those first operated upon. Hence the rule: If cauterization be decided upon, burn every portion of every ulcer, no matter what its size. If there be sub-preputial chancroid, with phimosis, the folly of burning chancroids of the preputial rim is at once apparent. The same may be said of burning sores on the glans, or prepuce, if urethral chancroid exist.

To apply nitric acid, all that is necessary is to clean off and dry the ulcer, and place upon its surface a drop of nitric acid, with a match or glass rod, holding the surface exposed until the drop has partly dried, or until the pain has nearly ceased; then, to insure success, again to dry off the surface and apply a fresh drop. It is necessary to have a moistened sponge ready to absorb immediately any portion of the acid which may be running over upon the sound skin. Finally, the surface is washed, dried, covered with dry lint, and left to itself. The eschar