commissure of the vulva are the usual sites of chancres. In these situations their transformation *in situ* to condylomata, mucous patches, and other secreting lesions of systemic disease is readily effected in consequence of the heat, moisture, and friction to which they are here exposed. In women the deformities of the genital region, venereal in origin, are commonly of exaggerated type, and, as a rule, in fetor, in abundance of secretion, and in volume they far exceed the corresponding lesions of the other sex.

Chancres of the vagina are rare; when they occur they usually escape observation. They are probably more common than is set down in the statistics of the malady. Chancres of the mucous envelope of the cervix are usually visible on its anterior limb. They are reddish or empurpled excoriations with an engorged areola; their face is often covered with a pultaceous and adherent film. In the genital chancres of women the inguinal glands usually escape involvement.

Extra-genital chancres are not of rare occurrence in the larger cities, and, as already pointed out, may be recognized in every region of the body. The most frequent sites are the lips, fingers, nipples, anus, tonsils, tongue, nares, thighs, arms, and toes. They result from the contacts incidental to kissing, sucking, biting, vaccinating, the smoking of pipes, the nursing of children at the breast, the practices of sodomy, digital explorations and operations of the accoucheur, physician, and surgeon, and from many accidents of daily life. They belong, without exception, to the types of chancre already described, invariably following periods of incubation, occurring with well-marked induration, and accompanied by adenopathy of the glands in the vicinity

of the infected part. Some are densely indurated fissures (nipple, anus, lip); some are indurated dry papules (as after vaccination, biting, tattooing); some are flattish plaques of a dull-red hue, or ulcers covered with an ashen paste (tonsils, tongue, uterus); some are irregularly shaped tumor-like masses (lips); some, finally, are simply symmetrical ovoid thickenings of normal tissue (finger, toe, hang-nail, etc.).

Number of Chancres.—The initial lesions of syphilis are seldom multiple; most often they are single. If dual in number or more numerous, they are, as a rule, multiple from the beginning. In these cases the inference is just that there has been a simultaneous accidental inoculation of all such points at a given moment. The non-auto-inoculability of the secretion of the initial lesion forbids its multiplication upon the person of an individual once infected, even as the result of an accident. The auto-inoculability of the pus of the "soft chancre," on the contrary, offers abundant opportunities for its spread from one point to another of the subject of the disease, and at the same time furnishes ample supplies for infection at any given moment in several points simultaneously. It follows that while in exceptional cases a patient may exhibit at one time two or three initial lesions of syphilis on his person, he never compares in multiplicity of chancres with, for example, a woman whose labial sores have supplied a pus streaming over the perineum where fifty, and even a hundred or more, soft chancres may at times be counted.

Induration of Chancres.—The specific induration of the initial lesion is one of its constant features. This sclerosis is recognized by the sense of touch in varying

degrees as a distinctly defined thin plate or sheet of inelastic tissue let in beneath the excoriation, ulcer, etc., or as a dense mass with the hardness of ivory or cartilage, varying in size from a split pea to that of a pullet's egg, and even to masses still larger. At times the sclerosis is so dense as to suggest the hardness of marble. All these grades of induration are in part correlated to the degree of irritation to which, after its complete evolution, the chancre is subjected. The situation of the chancre is a factor determining in part the extent of the induration, as chancres of the vagina are proverbially less indurated, and those of the muco-cutaneous borders (lips, preputial orifice, etc.) more conspicuously sclerotic, than others. The induration may precede or follow (much more often the latter) the evolution of the chancre, or it may first be observed at the moment of detection of the sore itself. The very late occurrence of induration in a chancre is usually a portent of good, as a delay of from twenty to thirty days after the appearance of a lesion supposed to be a precursor of syphilis usually negatives the expectation of that disease. The sclerosis may disappear before the healing of the chancre, or, what is quite common, may persist long after the involution of the latter, and even long after the occurrence of general symptoms. Occasionally one may recognize the pigmented, pigmentless, or sclerotic, keloid-like relics of induration six months after infection, and even after all symptoms of general syphilis have for the time disappeared. Sooner or later the induration always wholly disappears, and for the most part leaves behind it no traces of its existence, these facts seeming to bear no relation to the future of the patient. The so-called "relapsing indurations" are

usually syphilomata, evidences of general syphilis, so-called "tertiary gummatous infarctions of the genital region."

The Portent of Chancres.—While it is true that every initial lesion of syphilis signifies that a syphilis, mild or grave, will ensue, it does not follow that from the number or the appearance of chancres a prognosis may be made as to the severity or the reverse of the ensuing disease. An exceedingly insignificant looking ham-colored spot in one individual may be followed by the most malignant form of the disease, and may lead to a syphilis of the second generation that may destroy in succession the fruits of a wife's pregnancies; while a group of three gigantic masses of sclerosis, each with excavations of an ulcerative type, may be followed by even meagre results. The reason for this disproportion may be found, as some allege, in the activity of the germs present, but it is more probably due to the kind of soil in which those germs are implanted.

Duration of Chancres.—Chancres may persist until the evolution of systemic syphilis. They may, however, be resolved and disappear almost wholly at an earlier date. When persisting still later, they are always changed to conform to the type of the general symptoms of the disease, and are in reality no longer chancres, but condylomata, granulating mucous patches, gummata, etc. When persisting to such a late stage, they usually announce the fact by significant changes, such as elevation of the surface, tumefaction of the mass, softening of the sclerosis wholly or in part, and hypersecretion.

Termination.—Chancres may terminate by complete resolution. However numerous and formidable in

appearance, they rarely result in any mutilation of the part in which they have been seated. The simplest lingering traces of their existence are either moderately pigmented patches, such as occur on the skin of the penis in young subjects with very dark hair and eyes, or, as a sequence of such pigmentations in that class of individuals, even non-pigmented plaques as large as the original chancre, being, in fact, pigmented spots whence the pigment has slowly been removed. Chancres seldom leave scars, for the reason already given, namely, their indisposition to undergo ulceration. In this respect they are strongly distinguished from soft chancres, which, as a rule, suppurate and ulcerate, and often leave punched-out scars as relics of their ravages. When syphilitic chancres actually leave scars, these are always the result of ulceration, and this ulceration is the fruit of some accidental complication of the local disease. Thus, the chancre of the urethra lies just where the stream of urine several times in the day necessarily passes over its entire face, and, this fluid being in a high degree irritating in consequence of the urinary salts it contains, the chancre often secretes quite freely, and may leave an odd-looking scar at the tip of the glans penis, this organ, after all is healed, looking as though it had lost its apex, while the external urinary meatus has for a distance of perhaps half an inch or more a "reamed-out" aspect. Deeply-cauterized and filthy chancres, as well as those of "mixed" type, may leave small cicatrices. It follows that in making examinations for the army and navy and for life insurance, the non-discovery of scars upon the progenital region of men does not prove that they have not had a preceding syphilis, and the actual discovery of such scars in the

progenital region is by no means conclusive that the subjects of the same have been syphilitic.

Diagnosis.—The diagnosis of the initial lesion of syphilis is made chiefly by a careful study of the symptoms already detailed. By the recognition of these special characters, rather than by the exclusion of the symptoms of other diseases, is the end best reached.

The chancroid or "soft chancre" is usually a pustular lesion, and is represented either by an unbroken pustule surmounting its characteristic sharply-cut ulcer, or, after the rupture of the pustule, by the pus-bathed ulcer itself, circular, oval, stellate, or linear in outline. However engorged its base, the latter is never indurated save in the "mixed" variety. There is no period of incubation, and, though at times single, the lesions are usually multiple and often exceedingly numerous, scores forming in extreme cases. The adenopathy of chancroid is represented usually by a single though occasionally by a double bubo. Rarely many buboes occur of a distinctly inflammatory type, with a tendency to suppuration and the production in the lips of the wound, when there is spontaneous bursting of the gland-abscess, of a chancroid by secondary infection. The purulent secretion of the chancroid is practically indefinitely auto-inoculable—a fact accounting for the multiplicity of the lesions in many cases. Chancroids are usually genital in situation; rarely are they extra-genital, with the exception, particularly in filthy women, of the anus. The floor of the chancroidal ulcer is usually covered with a more or less tenacious slough resembling wet chamois-skin, and presenting in this particular a marked contrast with the shallow, scantily secreting, indurated, and sloping edges and floor of the initial lesion of

syphilis. Lastly, the accidents of sloughing, phagedena, and enormous involvement of the skin and the subcutaneous tissues of the thigh in ulcerative and burrowing sinuses are almost unknown in syphilis of the cleanly, and are by no means of very rare occurrence in chancroids of all classes of patients.

The lesions of *herpes progenitalis* are very readily differentiated from syphilitic chancres. The former are transitory, lasting at the longest for but a few days—a feature of prime importance in establishing a diagnosis, for any so-called "herpetic lesions" followed by ulcers lasting for ten days are probably not such, and should be viewed with great suspicion. Herpetic lesions in the progenital region are essentially vesicular, and are visible either as vesicles or as the relics of vesicles in the form of very superficial reddish plaques, where delicate and lightly-tinted crusts appear, or as slightly raw and tender, finger-nail-sized spots, furnishing a serum sufficient in quantity to moisten an applied bit of cotton. Their cause, further, may often be determined without great difficulty (venery, pollutions, gastro-intestinal derangements such as constipation, chills, gouty attacks, etc.).

Balanitis.—In this affection, as in herpes progenitalis, the disease, as distinguished from all varieties of chancre, is always short-lived and yields readily to treatment. In typical lesions the mucous membrane of the sac of the prepuce and of the glans penis becomes reddened, tumid, and in extreme cases of a deep purplish hue, with superficial excoriations of the external layer of the membrane in plate-like, finger-nail-sized plaques, which can be studied best in a well-marked case of blennorrhagia of the conjunctival membrane. There are distinct sensations of itching and burning in the part, and the odor of the secretions is usually nauseous in consequence of the altered character, in this part, of the secretion from the glands of Tyson. There is no induration, no glandular complication, and never ulceration. The disorder is usually relieved, when not complicated, in the course of a few days by the application of a stimulating vinous lotion aided by astringents, a thin layer of absorbent cotton being interposed between the two folds of membrane in contact.

Verruca Acuminata ("Venereal warts," Moist warts, Condylomata, etc.).—Filiform, papilliform, single or multiple, often numerous, vegetations may develop, for the most part in the progenital region of the two sexes. These warty growths are usually pedunculated, but at times are flattened. They secrete a mucoid fluid of offensive odor; this fluid in syphilitic subjects is highly contagious. The growths vary in size from a pin-head to compound masses as large as the fist and even larger. As distinguished from chancres, they are never indurated, they rarely ulcerate, they are not accompanied by adenopathy, and they survive for periods of time far outlasting the life-history of even persistent initial lesions of syphilis. They may occur in virgins, but they are more common in the subjects of venereal disorders, as also in those suffering from leucorrhœal and other pathological fluids bathing the genital region. Rarely they have an extra-genital site, such as the face. In males they are apt to form in the sulcus behind the corona glandis, about the frænum, in the external orifice of the urethra, and over the scrotum; in women, chiefly about the fourchette and the labia. They are readily recognized by their resemblance to the comb of a cock, by the absence

of ulceration and of induration of the base, and, when wiped clean, by their florid aspect and their readiness to bleed when scraped or cut away.

Epithelioma of the genital organs occurs most commonly after the middle periods of life in both sexes—ages when chancres are decidedly of less frequent occurrence than at others. In men the most frequent site of the disease is the glans penis, where a circumscribed, flattened papule, verrucous elevation, or shallow erosion may occur. The period of duration of these lesions is for most cases far greater than that of either chancre or gumma. The base of one or two of these primary growths may become indurated and the neighboring glands may enlarge; but the inactive, often slightly hemorrhagic or crusted papule or warty growth seated upon an infiltrated tissue, with an ulcer forming only after a long evolution of the primary symptom of the disease, is not to be mistaken for a chancrous lesion. When actually ulcerating, the resulting ulcer is of the type of the epitheliomata of the skin in general, with serous, scanty, or bloody secretion, everted edges, and excavated, often eroded, floor. For women the region of preference in the progenital forms is the clitoris, where the lesions above described may occur occasionally with striking deformity of the parts. The non-inflammatory, often scarcely colored thickenings, erosions, warty growths, etc. of both labia and clitoris, in women past the menopause, are all to be separated from chancrous changes.

Molluscum epitheliale of the genital region in young persons, especially those of the male sex, is characterized by the occurrence, on the scrotum chiefly, of split-pea-sized, yellowish-white, waxy-looking, and imbedded or

projecting bodies, usually exhibiting at one point or another of their globular surface a whitish or blackish punctum representing the occluded orifice of a sebaceous gland. They may be few in number, but often they are exceedingly numerous, studding the region affected with isolated but closely approximated lesions. They are never ulcerated, indurated, inflammatory, nor the seat of evidence of any acute process. It is impossible for the trained physician to mistake them for chancres, but the error is occasionally made by young and timid lay patients, who, having for good reasons become anxious about exposure to disease of the affected part, discover for the first time, on careful scrutiny, the molluscous bodies, and are filled with terror at the sight. There is never any glandular complication of these simple lesions, and in any doubtful case the expression of the cheesy mass from the orifice of the gland would establish the diagnosis.

Lichen planus of the genital region, particularly in the male sex, is at times liable to be mistaken for chancre. But the lesions are always papular, dry, and flattened at the apex, with a singularly characteristic polygonal outline, often very sharply defined. They are never seated on an indurated base, are not accompanied by glandular enlargement, are not eroded nor ulcerated, and are usually multiple, with at times marked invasion of the skin of the lower belly and the adjacent region of the thighs. An interesting feature of lichen planus of the genital region is the grouping of the lesions in lines, so that at times half a dozen or more of the small crimson, reddish, purplish, or dull leaden-hued papules stretch in a direct line from one point to another over the dorsum of the glans penis, in the skin of the organ. Angular as well as rectilinear figures, and even odd-looking

cockades, may thus be formed. Lichen planus lesions of the genital region are often the seat of intense itching, and may be well scratched with the evidences of such traumatism upon and about them. They commonly persist for a period of time much longer than that limiting the continuance of chancres.

Psoriasis of the genital region is exposed in well-defined disks covered, as a rule, with large-sized laminated scales, the disks varying in size from a pin's head to that of a silver dollar and even larger. They occur upon the skin of the penis and the scrotum, with frequent involvement of the pubic region, lingering near the line of the hair and projecting beyond the latter upward and downward. The absence of secretion, of induration, of ulceration, and of glandular complication, and the frequent presence of the disease in other regions of the body, suffice to determine its character.

The late gummatous ("tertiary") lesions of general syphilis occurring in the genital region are exceedingly liable to be mistaken for chancres. Here the diagnosis rests upon the discovery, elsewhere upon the person, of the relics of a preceding syphilis, the frequently obtainable history of such a disease, the well-marked tendency of the late deposits of syphilis to ulcerate and spread by serpiginous destruction of the tissue involved (a rare complication of infecting chancres), and often upon a history of persistence of the gummatous thickening or ulceration for a time longer than that required for the fullest evolution of both chancre and general consecutive syphilis. The chancres of the syphilized, previously described, are often illustrations of this singular process, suggesting the origin of the mucous patch in the mouth of the tobacco-chewer, and in doubtful cases only the most careful study will suffice to distinguish between the two.[1]

Pathological Anatomy of Chancres.—As the syphilitic chancre is like and unlike all other cutaneous and mucous lesions, and as the eruptions of syphilis are like and unlike all cutaneous affections, so the minute anatomy of chancres resembles that of many other pathological formations. Under the microscope one finds granulation-cells within reticulated fibrous meshes, and cell-infiltration partially or wholly blocking up the lumen of the vessels. Where erosions have occurred, naturally the epidermis is in various degrees removed, and the papillæ, with little or none of the rete left, are exposed or are even in great part removed. The characteristic induration of the chancre is due in part to new-formed connective tissue and in part to epidermal thickening. It is highly probable, however, that the lymph of the part is profoundly affected by a special ferment produced by the bacilli responsible for the disease, when the latter first multiply in exterior regions of the body. The absence of dense induration of chancres of the vagina and the cervix points conclusively to the fact that induration is a condition of site rather than of infarcted vessel or of multiplying connective-tissue fibres; and the extreme indurations seen at the muco-cutaneous margins of the body point equally to the action in those regions of a special influence upon the effective germs of the disease.

Treatment of Chancre.—Persistent efforts have been made from time to time to set aside the possibility of

[1] For a tabulated summary of the diagnostic differences between chancre and other genital lesions, consult the section devoted to the subject of *Chancroid*.

syphilis following chancre by the radical destruction of the latter. The reasonableness of success in these efforts is on *a priori* grounds so great that in all probability they will never be abandoned wholly, but the actual results have thus far been disappointing and, for reasons that need not here be set forth, are enveloped in considerable doubt. The destruction of chancres by chemical agents and by the actual cautery has repeatedly failed not only to relieve the local symptoms, but also to prevent the occurrence of general symptoms. The same may be said of total excision of the primary lesion, and even of total excision of both primary sore and all the glands in the neighborhood involved in the disease. When the chancre, as is usual after cauterization, exhibits increased induration of its base, even though it may not be affirmed that the ensuing disease is the graver for the complication, it is certainly true that the chancre is less manageable than before. In some cases exceedingly grave destructive ulceration following gummatous deposits has occurred in patients where these attempts have been made with all possible precautions to jugulate the disease in sound men. In this connection it must not be forgotten that even experts may be deceived in the recognition of both the chancres of syphilis and the lesions closely resembling the latter; and this possibility of error should not be ignored by the practitioner who is reasonably judicious. There is still a division among authorities on the question whether the initial sore is merely a local point from which, after sufficient multiplication, the microbe of the disease or its toxine is swept through the general economy, or whether the chancre is the local expression of an intoxication generalized at the outset.

All chancres should be treated by strict observance of the requirements of hygiene. The affected part should be cleansed with warm water and soap, after which washings in hot borated solutions should be employed. In the event of tenderness or pain, as in the case of chancres of the pendulous portion of the penis, the part, when practicable, may be immersed in hot solutions of boric acid often each day, or even in extreme cases for hours at a time. After drying, the chancre should be well dusted with powder, such as boric acid (or boric acid and talc, 1 part to 4, when the acid itself is at all irritating), europhen, aristol, hydronaphthol (1 part to 100 of fuller's earth), calomel (or 1 part of the latter to 3 or 4 parts of starch), or iodoform when the odor of the drug can be tolerated, and especially in the case of painful, intractable, or irritable chancres. When erosions form, having a raw, reddish, slightly secreting surface, and also when ulceration occurs, it is generally well to paint the surface of the sore, after the washing and before the application of the powder, with a solution containing from 1 to 2 grains of the bichloride of mercury in the tincture of benzoin. The drying, over the eroded surface, of the gum thus medicated is usually not unpleasant to the subject of the disease, and is also cleanly, protective, and efficient as a parasiticide. After all applications have been made, the surface, when practicable, should be guarded from contact with neighboring parts, not with a view to the prevention of autoinfection (which in these cases is not to be feared), but in order to set aside the possibility, always great, of irritation of the sore. In the instance of chancres which may be by this means sufficiently well dressed (sac of the prepuce, frænum, etc.), when practicable, it is well to

draw the foreskin well over the interposed lint. As a rule, when the chancres are large and tender the male organ should be wrapped in a thick jacket of mercurialized wool and be brought up in the line of Poupart's ligament before the clothing is readjusted. Elastic or other ligatures should never be fastened about the penis.

In women the labia, when similarly affected, should be separated by antiseptic cotton, and for chancres of the cervix pledgets of lint, after dressing the part, should be pushed against the os with tampon supports. For these chancres the mercurialized benzoin lotion is an excellent application. Lotions often useful when chancres prove irritable under other treatment are the ordinary black wash, pure or diluted, and applied by the aid of moistened pledgets of lint; tannic acid and red wine, 1 part of the former to 30 of the latter; in some cases the lead-and-opium wash. As a rule, all salves and unguents are to be discarded in the management of chancres. The chief exception to the rule is furnished by lesions which secrete a fluid gluing the dressing so tightly to the part that when the lint which has been applied is removed no little pain is experienced and slight hemorrhage ensues. In this event, after the applications described above, the sore should be dusted, and then there should be applied lint on one face of which (that next the chancre) has been smeared carbolized vaseline.

In the management of chancres of the urethral orifice a bit of medicated lint may be introduced into the gaping orifice if required; but the most important of the measures to be followed is the immersion of the penis, whenever practicable, in a basin of warm water at the time of each urination, as by this means the urine is in a measure

diluted at the time of its traversing the sore. Weak solutions of the nitrate of silver, employed not as a caustic agent, but with a view of making a satisfactory dressing of an eroded surface, may also at times be used with advantage.

The question whether the treatment of syphilis should be begun at the date of recognition of the chancre or at the time of the appearance of symptoms of general syphilis is considered elsewhere. Internal medication, however, of a patient affected with a chancre which has been recognized as indubitably an initial lesion of syphilis is by no means necessarily the treatment of that syphilis. Infecting chancres are peculiarly responsive to a properly-directed treatment by internal medicine, and the refusal to employ the latter is unwarranted when the diagnosis is practically assured and the lesions are either painful, portentous, or the source, as is often the case, of much mental distress to the patient. Mercury by the mouth is in these cases the one efficient remedy. It should not be ordered unless the diagnosis is satisfactorily established. In the majority of all cases coming under the management of experts the diagnosis is practically ensured from the first, either as the result of confrontation (discovery, in the person from whom infection was received, of lesions capable of conveying the disease) or of the recognition of classical features of an initial sclerosis in the person acquiring the sore.

It should not be forgotten, then, that the mercurial treatment of this period is a treatment directed to the chancre, and not to the as yet undeveloped disease to which the chancre points. If this be borne in mind, the end is readily reached. The metal should be used