relations of the course of the disease, the infection, the heredity, etc., from this standpoint. Of course when we go into the details of the pathological processes to demonstrate the specific changes in the cells and tissues, the varieties of their growth, their viability, their death, the changing reactions upon chemical processes, etc., in a satisfactory manner, as all can do so readily with the bacillus of leprosy, we miss the possibility of demonstrating at every step the constant presence of the bacteria, and for the solution of such detailed questions we are almost completely confined to analogy."

CHAPTER III.

THE INITIAL LESION OF SYPHILIS, OR CHANCRE.

Logical accuracy as well as simplicity and perspicuity of language require the abandonment of the terms "hard," "indurated," and "infecting chancre," as applied to the initial lesion of syphilis, which should be simply called by the name of *chancre, syphilitic chancre, initial lesion of syphilis*, or *primary syphilitic ulcer*. If the name "Hunterian chancre" be retained, it should be applied exclusively to the less frequent form of chancre which Hunter designated, and which is characterized, in addition to the induration common to all forms of chancre, by a degree of ulceration that involves the whole thickness of the skin or mucous membrane. The term "infecting chancre" is really not objectionable as some think, since there is reason to believe that it is for a time the local expression of syphilitic contagion. Diday quaintly remarks, when a man contracts syphilis, the chancre that can properly be called infecting is the one upon the woman who gave him the disease.

For a comparison of the frequency of the initial lesion of syphilis with that of the chancroid, the reader is referred to the first chapter of the second part of this work, where the remarks upon the seat of the chancroid are also applicable in the main to the sore under consideration. The following table exhibits the seat of 471 chancres in men, comprising all that were observed at the Hôpital du Midi in the year 1856:

Chancres	on the glans and prepuce,	314
"	on the skin of the penis,	60
"	on various parts of the penis,	11
"	involving the meatus,	32
"	within the urethra (not visible on forced separation of the lips of the meatus, but recognized by palpation, inflammation of the lymphatics, etc.),	17
"	on the scrotum and peno-scrotal angle,	11
"	of the anus,	6
"	of the lips,	12
"	of the tongue,	8
"	of the nose,	1
"	of the pituitary membrane,	1
"	of the eyelid,	1
"	of the fingers,	1
"	of the leg,	1
	Total,	471

In 130 women affected with true chancres at the Antiquaille Hospital, Lyons, where wet-nurses are admitted, M. Carrier found the seat to be:

	Times.
The labia majora,	43
" entrance of the vagina,	12
" meatus,	14
" nymphæ,	10
" fourchette,	7
" sheath of the clitoris,	3
" anus,	12
" buttocks,	1
" thighs,	1
" under lip,	6
" upper lip,	4
" labial commissures,	1
" nostrils,	2
Both breasts,	3
The right breast,	1
" left breast,	5
Regions not determined,	5
Total,	130

By comparing these tables with those on pages 376, 377, it is seen that the seat of chancres is still more extensive than that of the chancroid, since it embraces the face and buccal cavity, where the last-mentioned ulcer is rarely met with in practice, but where the syphilitic virus is often inoculated from a secondary lesion in the contact of mouth with mouth, etc.

Among the rarer situations of a chancre, should be mentioned the walls of the pharynx, where a certain aural specialist of Paris is said to have inoculated several of his patients by means of a Eustachian catheter which he neglected to cleanse. A remarkable instance came under our observation of a chancre concealed beneath the upper eyelid, showing no signs of its presence externally, even upon the free margin of the lid. The patient applied to me for disease of the eye, and on everting the upper lid I found a superficial excoriation which bore a striking resemblance to a chancrous erosion, and just in front of the ear on the same side was an indurated ganglion. The genital organs were sound. I exhibited the case and stated my diagnosis to my class at the College of Physicians and Surgeons, and under expectant treatment secondary symptoms made their appearance after the usual period of incubation. The man was a stupid Irishman, made his living by slaughtering sheep, was married, and I never could obtain any clue to the manner in which he contracted the disease.

Has the chancre a period of incubation? This is an important question, since it involves two others of great practical interest: 1. Whether the chancre is a local or constitutional lesion; 2. Whether its abortive treatment can prevent systemic infection. As I have shown in another chapter, the chancre produced by inoculation of the secretion of secondary symptoms undoubtedly has a period of incubation, amounting on the average to more than three weeks. Again, in three cases of artificial inoculation of the secretion of a chancre, performed by Rollet,[1] Rinecker, and Gibert, the period of incubation was 18, 25, and 24 days respectively. In clinical observation, the same difficulties obtain as have already been mentioned with regard to the chancroid, but many careful observers have noticed the fact that, as a general rule, advice is sought at a later period for a chancre than for a chancroid, and the interval between contagion and the appearance of the ulcer is represented by patients as longer in the former than in the latter. Diday made minute inquiry of twenty-nine persons whose chancres were of recent origin, who appeared to be trustworthy, and certain of the facts which they stated who had been exposed but once, and who had no previous connection for at least a month, and found that the average interval between the sexual act and the appearance of the sore was fourteen days.[1] M. Chabalier, in an examination of ninety cases of chancre, found an average period of incubation of from fifteen to eighteen days; and states that the chancroid, on the contrary, is visible within thirty-six to forty-eight hours after contagion.[2] M. Clerc has especially insisted upon the presence of incubation as diagnostic of the chancre, and has reported several cases which were preceded by a period of incubation of thirty days.

[1] Arch. gén. de méd., avril, 1859, p. 409.

A gentleman of this city, of high social position, whom I know so intimately that I can vouch for the truth of his statements, visited Paris, unaccompanied by his wife, and, while under the influence of wine, for the first time during fifteen years of married life had connection with a woman of the town. This was on the eve of his return to America, and his subsequent remorse and anxiety were so great that on his voyage home he examined himself daily with the greatest care to see if he had contracted any disease. His prepuce was very short, so that the glans was habitually uncovered, and no lesion was likely to escape observation, yet he found nothing until the day of his arrival home, the thirty-fifth after exposure, when he noticed a slight excoriation upon the internal surface of the prepuce. He showed it to his family physician, a "homœopath," who told him it was a mere abrasion, which would heal in a few days, and that he might with safety have connection with his wife. As the promised cicatrization did not take place, on the fourth day after his arrival he applied to me, and I found a superficial chancre with well-marked parchment induration and attendant indurated ganglia. Since then he and his wife have had several attacks of general syphilis.

Castelnau reports a case communicated to him by the physician of a venereal hospital, who was himself the subject of the observation, in which a chancre appeared thirty-three days after an impure intercourse.[3]

Fournier[4] relates a number of cases of comparatively long incubation, amounting to 28, 21, 39, 28, 21, 21, 40, 29, 23, 25, 21, 34, 28, 30, 30, 30, 27, 35, 42, 45, 21, 42, 42, 30, 42, 35, 48, 21, 33, 40, 25,

[1] Gaz. méd. de Lyon, mars 1, 1858. [2] Thèse de Paris, No. 52, 1860, p. 111.
[3] Annales des maladies de la peau et de la syphilis, t. i., p. 212.
[4] Recherches sur la incubation de la syphilis, 1865.

28, 34, 28, 30, 35, 17, 36, 37, 21, 30, 70, 25, 28, and 30 days. The longest incubation that we have ourselves observed was 50 days.

But further evidence on this point is unnecessary. There can be no question that the initial lesion of syphilis, as of other infectious diseases, possesses a period of incubation, upon an average of from two to three weeks, and sometimes extending to five, six, or even, in rare instances, to eleven weeks; and this fact leads to the important conclusion that

An interval of two weeks or more between the last exposure and the appearance of a suspicious sore upon the genitals, renders it extremely probable that the latter is a true chancre.

To ascertain its shortest limit is attended with more difficulty, since the virus is sometimes deposited in a wound or abrasion occurring at the time of coitus, and, in consequence of inattention to cleanliness or other accidental causes, remaining open until the development of the chancre, so that it is impossible to say precisely when the simple is transferred into the specific ulcer. The inoculation of the same point with the chancroidal and syphilitic poisons will also explain why in some instances the initial lesion of syphilis appears to be developed in some cases earlier than in others, since the action of the former virus commences at once and gives rise to an ulcer which may be perceived by the patient in the course of two or three days, and which masks the later development of the chancre.

When inquiring into the incubation of a venereal ulcer, the surgeon must be on his guard. A patient applies to him with a sore and says he was exposed three days before. The careless surgeon chimes in with the idea of the patient that the sore was thus recently contracted, and, on the ground that there has been no period of incubation, pronounces it a chancroid, forgetting to ask the patient when he was exposed before this last time! Such inquiry will often elicit the fact that the previous exposures have been frequent and closely approximated, and that at which of them the inoculation took place is a "conundrum." If the sore prove to be a true chancre, it was certainly not at the last one—three days before—that the mischief was done.

Symptoms.—The following table, prepared by M. Bassereau,[1] of the chancres which preceded 170 cases of syphilitic erythema, will indicate the various forms which a chancre may assume, and afford some idea of the comparative frequency of these forms in the milder cases of the disease, of which the more severe instances exhibit a larger proportion of excavated ulcers:

Superficial erosions,	146
Circumscribed ulcers, with abrupt edges, involving the whole thickness of the skin or mucous membrane,	14
Circumscribed phagedenic ulcers, with a pultaceous floor, involving the tissues a short distance beyond the skin or mucous membrane,	10
Total,	170

[1] Op. cit., p. 140.

It appears from this table that the chancre has no exclusive form, but that it most frequently assumes one which differs widely from the chancre type as formerly described by many authors. The frequency of the superficial form of chancre excited my attention several years before I had met with any description of it in books, and the first cases which came under my notice were mistaken for mere abrasions until the appearance of secondary symptoms corrected the diagnosis.

The superficial form of chancre is most marked on the internal surface of the prepuce, by which it is protected from the air and friction, and kept free from scabs; and it is in this situation that it is most frequently met with. It has generally a circular or ovoid, but sometimes irregular, outline. Its floor is but slightly, if at all, excavated, and occasionally is even elevated above the surrounding integument by the subjacent induration. Its surface is smooth, often looking as if polished, destitute of the consistent and adherent exudation of the chancroid, and of a red or grayish color; or, at times, it is dark or even black, owing to molecular gangrene.

Moreover, there is a frequent feature of the chancrous erosion which I have often observed, and which was first described by my friend, M. Clerc, of Paris, who gave several admirable representations of it, which I here reproduce in the chromo-lithographic plate. I refer to a "kind of false membrane, presenting some resemblance to the diphtheritic patches which characterize certain forms of syphilitic symptoms occupying the mucous membranes." It is entirely distinct in its appearance from the membrane covering a chancroid, but the difference is better seen than described. I can only say, that it usually occupies only the centre of the chancre, that its edges shade off into the reddish circumference, that it is of a translucent, slightly greenish, and pultaceous appearance, unlike the dull or yellowish-gray membrane which covers the whole surface of a chancroid. M. Clerc believes that this diphtheritic layer is a *constant* feature of a chancre during the early stage (first two weeks) of its existence. I cannot regard its presence as thus invariable, but it is certainly very frequent, and is well worthy of careful observation.

The secretion of this form is a clear serum—free from pus-globules, unless the sore has been irritated—which may often be seen issuing from minute pores, after the previous moisture has been wiped away. It has no surrounding areola, and leaves no cicatrix to mark its site. Barely one-third of the chancres in Bassereau's 170 cases left any visible traces aside from induration. When situated upon the external integument, as the sheath of the penis—where most venereal ulcers are chancres—and exposed to the air, it becomes covered with scabs, which give it the appearance of a pustule of ecthyma, or a patch of scaly eruption, and which may readily lead to an error in diagnosis. The characters of the chancrous erosion are also modified by the application of irritants, or by a want of cleanliness; its secretion may become purulent, and its surface

resemble that of the chancroid; but its normal appearance may be restored by applying a water-dressing for a few days.

Frequent as is the chancrous erosion, it must not be regarded as the exclusive form of chancre. Diday believes that it is due to inoculation from a secondary, and that the excavated chancre is produced by inoculation from a primary lesion, but this distinction will not hold. Between this form and the indurated excavated ulcer, known as the Hunterian chancre—which was so long and so erroneously supposed to be the especial harbinger of general syphilis—there may exist many gradations, which it is unnecessary to describe in detail. Ulcerative action may go beyond this point, and terminate in phagedæna; but, generally, it is limited by the plastic inflammation of the surrounding tissues, as is evident from an examination of the edges of nearly all the forms of chancre, which are sloping, somewhat prominent and adherent, unlike the abrupt and detached margins of the chancroid. If phagedæna occur, the destructive process is usually limited to the induration (neoplasm), and, on the final healing of the ulcer, it is surprising to see how little mischief has been done to the normal tissues.

Multiple Herpetiform Chancres.—Under this title Dubuc first called attention to a variety of syphilitic chancre liable to be mistaken for herpes. These chancres have a diameter of a line or less; they look like small round excoriations, of a deep-red, sometimes coppery hue, which bleed readily and have a very slight induration of their bases. The induration often increases at a later period. From five to fourteen chancres may be observed upon the prepuce or glans. In their first stage the diagnosis is difficult; but the absence of itching and burning, their dark color and their chronicity are points which aid in distinguishing them from herpes. Another important feature is that their surface is very smooth and shining. Moreover, induration of the inguinal ganglia is soon developed. The duration of these herpetic chancres is, according to Dubuc, a month or six weeks. In exceptional cases, in which the chancres are not close together, they remain separate during their whole course. In the majority of cases they are closely grouped, and, after remaining for several weeks in the herpetic form, they unite and form a single chancre.

Anomalous Appearance of the Initial Lesion of Syphilis.—The chancre is subject to various modifications. One of the rarest is that described by Dr. P. A. Morrow[1] as "*diphtheroid of the glans.*" In the case which he had under his care, and which I had the opportunity of observing, "the anterior four-fifths of the glans penis was covered with a glistening grayish-white coating of a leathery consistence, simulating in all its physical characteristics a diphtheritic exudation. This coating was of uniform thickness, raised about

[1] On a rare form of initial lesion, Diphtheroid of the glans penis: Report of a case, with remarks. P. A. Morrow, M.D. Arch. Dermat., N. Y., 1876, vol. ii., p. 383.

two lines above the healthy mucous membrane, and covered the entire surface of the glans, except a narrow zone embracing the corona.

"The edges of the coating were abruptly raised, and the line of demarcation between its border and the healthy tissue was distinct and unmasked by an inflammatory areola. This appearance was suggestive of a white membranous hood drawn over the head of the penis, with a slit-like opening for the meatus in front. So evenly and smoothly was it moulded over the glans that the contour was perfectly preserved. A sensation of a smooth, greasy feel was communicated to the finger passed over the surface. There was absolutely no erosion—its epithelial coat seemed to be continuous with that of the healthy mucous membrane, which limited its circumferential border above. Its base was supple, with no trace of induration. Its surface was moist and glistening, with no appreciable secretion. It was intimately adherent, and could not be detached from the tissues which supported it without leaving a bleeding base." It was painless and indolent; it appeared several weeks after coitus, and was followed by secondary symptoms.

In three cases which I have seen at the New York Dispensary, the lesion was developed in round or oval patches, less than an inch in diameter. In one case the patch was continuous with an indurated nodule. The lesion disappeared slowly, leaving the parts normal or slightly pigmented. For reasons given in my published reply[1] to Dr. Morrow, I do not consider this a diphtheroid condition of the initial lesion. I regard it rather as a form of scaling or dry chancre, the "*papule sèche*" of Lancereaux. In this lesion the syphilitic cells are developed in the superficial tissues of the glans, which are thereby thickened and assume a leathery appearance. The whitish color is probably due to the close packing of the cells.

Infecting Balano-posthitis.—Under this title Mauriac has described a form of initial lesion which is liable to be mistaken for simple balano-posthitis. In this lesion the mucous membrane of the prepuce is thickened, and has a deep red color, and is slightly excoriated either partially or completely. The glans may be superficially thickened, and is generally hyperæmic and eroded. Retraction of the prepuce, which may be somewhat difficult or quite impossible, best displays its infiltrated condition. The induration may be evenly distributed or irregular; its localization may be marked in the fossa near the frænum, in which case there exists merely an indurated nodule. The course of the lesion is chronic, but it yields readily to internal treatment. The lesion consists of an infiltration of the submucous tissue with hyperæmia; in other words, it is a combination of cell-infiltration and hard œdema.

Induration was recognized at a very early period in the history of

[1] Notes on a rare appearance presented by the initial lesion of syphilis. R. W. Taylor, M.D. Arch. Dermat., N. Y., 1877, vol. iii., p. 5.

syphilis, first by Torella, in 1497, by John de Vigo,[1] Gabriel Fallopius,[2] Leonard Botal,[3] and Ambrose Paré,[4] as a prominent symptom of the sore which precedes general syphilis; nearly forgotten by subsequent writers, though occasionally mentioned, as by Nicholas Blegny,[5] it again assumed importance in modern times from the teachings of Hunter,[6] Bell,[7] and especially Ricord, and is now justly regarded as the most characteristic feature of a chancre, when seated upon a person exempt from previous syphilitic taint.

The induration of a chancre is a peculiar hardness of the tissues around and beneath the sore. Simple inflammation may occasion an effusion of plastic material and consequent engorgement about any sore; but specific induration is of an entirely distinct character. The latter is formed, as the French say, "*à froid*," that is, without inflammatory action; the deposit takes place in the absence of all symptoms of inflammation, "pain, heat, redness, and swelling;" and so silently, so insidiously, that the patient is often ignorant of its presence, or discovers it only by accident. No event is more common than for a surgeon to be consulted by a man who states that he had a sore a few weeks ago, "which did not amount to much;" he "burnt it with caustic and it healed up;" but he has recently found that it left a "lump" behind it. This "lump" is a specific induration and denotes that the constitution is infected. A gentleman applied to me for phimosis—neither congenital nor inflammatory—which occasioned no inconvenience except an inability to retract the prepuce. He was not aware that he had had any venereal trouble, but on examination of the parts, a mass of induration as large as an almond was perceptible to the touch and even to the sight—so great were its dimensions—situated about the furrow at the base of the glans. The phimosis was simply due to the mechanical obstruction presented by the induration to the retraction of the prepuce, and this difficulty alone induced him to seek advice. Frequently, also, patients apply to a surgeon for treatment for general syphilis, and honestly declare that they have never had a chancre, though the previous existence of such, and even its very site, are unmistakably indicated by the remaining induration.

Again, specific induration and inflammatory engorgement differ in their objective symptoms. The boundaries of the former are clearly

[1] "Nam ejus origo in partibus genitalibus, videlicet in vulva in mulieribus et in virga in hominibus, semper, fuit cum pustulis parvis, interdum lividi coloris, aliquando nigri, non nunquam subalbidi, cum *callositate* eas circumdante." (JOHN DE VIGO, *Practica copiosa in Arte Chirurgica, etc.* Rome, 1514, lib. v.)

[2] Tractatus de morbo Gallico, Patavium, 1564.

[3] Luis Venereæ Curandæ Ratio, Paris, 1563.

[4] "S'il y a ulcère à la verge et s'il demeure dureté au lieu, telle chose infalliblement montre le malade avoir la varole." (Paré's works, first published at Paris, 1575, Book 19th.)

[5] L'art de guérir les maladies vénériennes, etc., Paris, 1673.

[6] Ricord and Hunter on Venereal, 2d Am. edition, Phil., 1859, p. 286.

[7] Treatise on Gonorrhœa Virulenta and Luis Venerea, London, 1793, vol., ii., p. 19.

defined, while the extent of the latter cannot be limited with nicety; the one terminates abruptly, the other shades gradually into the normal suppleness of the part; the first is freely movable upon, the second adherent to, the tissues beneath. The difference in the sensations they impart to the fingers is still greater; specific induration is so firm, hard, and resistant, that it is often compared to a "split-pea"[1] or mass of cartilage; the softer and doughy feel of common inflammatory engorgement requires no description. It is hardly necessary to say that there is no incompatibility between these two pathological conditions which can prevent their coexistence, and hence arises, in in some few cases, a difficulty of diagnosis. The effect of simple inflammation, however, subsides, in a few days, or in a week or two at farthest, and lays bare the specific induration, which may, for a time, have been buried beneath it; and under all circumstances reference may be made to the neighboring ganglia, the induration of which is equally constant and significative with that of the chancre.

In the masses of induration of considerable size to which the above description chiefly refers, the adventitious deposit occupies the skin or mucous membrane bordering upon the edges of a sore, and also the cellular tissue beneath it. There is another but less common form of induration in which the deposit is confined to the mucous membrane alone, and does not involve the cellular tissue beneath. It most frequently occurs in connection with the superficial chancre, and is called the "parchment-induration," because it imparts to the fingers a sensation as if the erosion rested upon a thin layer of that material. Readily perceived in most cases, in others it may escape notice, especially to one not familiar with it.

The situation of the chancre influences to a certain extent the degree of development of the induration; which for instance, is generally but slightly marked and of the parchment variety in certain regions, as at the margin of the anus; while, on the contrary, it is fully developed in the furrow at the base of the glans and upon the upper lips. Some authorities have gone so far as to maintain that induration is entirely dependent upon the seat of the sore, and have instanced the uniformity with which all venereal ulcers upon the lips are indurated, in proof; but, as before stated, this objection to a quality of venereal poisons has been effectually exploded by recent experimental inoculations, in which chancroids with a perfectly soft base have been developed upon the region in question.

Ricord believes that the development of induration corresponds with the supply of lymphatic vessels; that the former is most marked where the latter are most abundant; and that the induration consists in an inflammation of the capillary absorbents with effusion into the intervening tissue.[2] The investigations, however, of Auspitz and

[1] Benjamin Bell usually has the credit of the comparison of induration to a split-pea, but reference to his work shows that he uses the term as indicative of the size of a chancre, and not of the consistency of its base. He says: "A real venereal chancre is seldom so large as the base of a split-pea, and the edges of the sore are elevated, somewhat hard, and painful." Op. cit., vol. i., p. 19.

[2] Leçons sur le chancre, p. 86.