was bitten on the mamma by her lover during the sexual act; a fourth of a woman bitten on the chin by her lover under similar circumstances, and a fifth was a policeman who was bitten on the finger by an arrested prisoner. Some years ago I had under my care a gentleman who contracted syphilis on the left nipple from the bite of his mistress inflicted during copulation. Similar cases have also been reported by Johnson,[1] and Rollet also collected a number. The cases of three workmen contracting syphilitic chancres of the lips by drawing through their mouths and biting off pieces of a ball of thread, which was also similarly used by a fourth companion who was syphilitic, have been reported by Poray-Koschitz.[2] Instances of infection by means of feeding-bottles, spoons and towels, are on record, and Rohé[3] reports a case in which contagion probably resulted from a lead-pencil which had been used by a syphilitic.

The danger of the communication of syphilis in the surgical operation of skin grafting is well shown in the following case, reported by Deubel:[4] A man, forty-nine years old, had very large intractable ulcers, following gangrenous erysipelas. Forty-five dermo-epidermic grafts were applied to the outer half of the ulcers, of which thirty-three became adherent. Several days after, grafts taken from the buccal mucous membrane of a rabbit having failed, Deubel applied on the inner half of the wound thirty-three grafts taken from several persons. The patient had never had any venereal disease.

After this operation, the following occurred: Upon the inner half of the wound, cicatrization having taken place with rapidity, an ulceration of gray color of the size of a ten-cent piece appeared, and in three days the whole wound was one vast ulcer again. For more than three months these ulcerations partly healed, then a roseola and mucous patches of the mouth followed. It was then learned that one of the persons, from whom the skin grafts were taken, the patient's own son, was suffering from secondary syphilis. This case conveys its own lesson to surgeons.

General Syphilis always follows a Chancre.

In the great majority of cases of acquired syphilis (excluding those of hereditary origin), general symptoms can clearly be traced to a preceding chancre. Thus of 826 patients with general syphilis who were treated at the Hôpital du Midi in 1856, the previous existence of a chancre in 815 was established beyond a doubt, either by examination or by voluntary confession; in 9, there was strong reason to suspect it; and in the remaining 2, the disease was evidently due to hereditary taint. Of 267 cases of secondary syphilis observed by

[1] British Med. Journal, Aug., 1860.
[2] Centralblatt für Chirurgie, No. 41, 1875.
[3] Chicago Med. Journal and Ex., July, 1878, page 15.
[4] Annales de Dermat. et de Syphil., tome iii, 1882, p. 129.

Fournier,[1] the same fact was proved in 265. Of 198 cases of syphilitic erythema under the care of Bassereau,[2] either a chancre or unquestionable traces of one were seen in 170; in 19, the patients confessed to the fact, although no evidence of it was found upon their persons; 4 acknowledged having had a gonorrhœa; 5 declared that they had had no preceding lesion. Thus we find that in a total of 1291 cases, general syphilis was undoubtedly preceded by a chancre in all except 22.

These statistics agree with the experience of all physicians, that, as an almost invariable rule, syphilis *evidently* originates in a chancre; and the small number of cases in which the existence of the ulcer cannot be established renders it extremely probable that there are no exceptions to this law, especially when we take into account the following considerations:

Chancres are capable of spontaneous cicatrization, and all traces of them may disappear in time, even without treatment.

They may occupy unusual situations, where their presence may readily escape notice, or be almost impossible to detect; among which the interior of the urethra, vagina, cervix uteri, and the buccal and rectal cavities deserve special mention.

Exceptional cases almost invariably rest upon the testimony of patients alone; and are the more frequent, the later the lesion presented in the order of succession of syphilitic symptoms; in other words, the longer the time which must have elapsed since contagion took place. For instance, cases are rare in which a patient with syphilitic erythema does not confess that he has had a chancre; on the contrary, they are not infrequent when the general lesion is syphilitic rupia, tubercles, orchitis, or periostitis. This fact leads us to suspect that the defective memory of patients will explain some apparent exceptions to the rule.

From various motives, patients often conceal facts within their knowledge.

With perfect memory and unquestionable honesty, patients are incompetent witnesses upon subjects which involve medical knowledge, which they do not possess. The superficial chancre—the form which so frequently precedes general syphilis—is so indolent and so insignificant a sore, that it may readily pass unnoticed, or, if seen, be mistaken for a mere abrasion. I have met with several instances in which patients bearing this form of chancre in plain sight upon their persons were entirely ignorant of its presence, or thought it of no consequence.

A chancre may be overlooked by the patient because seated elsewhere than upon the genitals—the exclusive seat of venereal ulcers in the estimation of the public—or may not be discovered because concealed within the vagina, or beneath the prepuce when phimosis is present, or when the glans is never uncovered. In many instances

[1] De la contagion syphilitique, Paris, 1860, p. 15.
[2] Op. cit., p. 103.

married men have applied to me with chancres, and within a few months their wives have exhibited the early symptoms of general syphilis, without having noticed or suspected the presence of a chancre, which undoubtedly existed, but which fear of exposing the husbands prevented my searching for. In other cases where an examination has been made, I have found chancres of which the patients were entirely ignorant.

Again, chancres sometimes occur within the urethra beyond the reach of vision, where an unprofessional person cannot be expected to be aware of their presence from the slight discharge, pain in micturition, and induration, which may constitute their only symptoms, and which may be obscured by a coexisting gonorrhœa.

I repeat, therefore, that when we consider in how great a proportion of cases general lesions are known to have been preceded by a chancre, and when we reflect upon the numerous sources of error attending the testimony of patients in apparently exceptional cases, it is infinitely probable that a law which is known to be commonly true, is in fact invariable, and that general syphilis always follows a chancre.

Syphilis pursues essentially the same course, whether derived from a Primary or Secondary Symptom; in the latter case, as in the former, the initial lesion is a Chancre.

This proposition may almost be said to be self-evident, for who would ever dream that a case of scarlet fever, measles, or small-pox would vary in its symptoms according as it was contracted from a person in the early or the late stage of the same disease? We are surprised, therefore, when we look back only a few years to the time when some of the most eminent authorities maintained that contagion from a chancre would indeed produce a chancre, but that contagion from a mucous patch would produce a mucous patch, etc.; equally surprised must we be at the incredulity with which this proposition was met on its first announcement, in 1856, by Dr. Edward Langlebert, at a meeting of the Société Médicale du Panthéon, of Paris.[1] Langlebert's paper, however, contained no adequate proof and was nearly forgotten, when the subject was again taken up by Rollet,[2] who adduced such an amount of evidence in favor of this proposition as to leave no doubt of its truth. It is unnecessary at the present day to dwell upon this subject; suffice it to say that, as shown by many cases of artificial inoculation, the results of syphilitic contagion are the same whether the matter be taken from a primary or a secondary lesion.

[1] Proceedings of the above Society for 1856, p. 8. See also a letter from M. Langlebert to M. Diday, Gaz. méd. de Lyon, July 1, 1859.

[2] Arch. gén. de méd., Paris, fev., mars, et avril, 1859.

Syphilis has a Second Period of Incubation (between the appearance of chancre and the development of general lesions) which although subject to some variation, is not indefinite in its duration.

It was at one time erroneously supposed that the first manifestations of syphilis might make their appearance at any period subsequent to contagion and to the development of the initial lesion; hence that a man who had once contracted a chancre was never safe, no matter how long a time had been passed without any further evidence of the disease. It is now known that if general manifestations are ever to appear they will show themselves within a comparatively limited period.

In studying any case or series of cases with reference to this point, the following conditions should be observed:

1. That the date of the infecting coitus or of the appearance of the chancre should be known.

2. That the patients have not been subjected to treatment which may delay and, in the opinion of some, entirely prevent the appearance of general lesions.

3. That they have been under the observation of some one competent to discover the earliest manifestations of general syphilis.

These conditions were carefully fulfilled in fifty-two cases observed by Diday,[1] who arrived at the following results:

No. of Cases.	Interval in Days.	No. of Cases.	Interval in Days.
1	25	4	47
1	28	4	48
1	33	3	50
2	35	1	52
3	36	1	54
1	37	2	56
4	38	1	57
1	39	2	58
1	40	1	60
1	41	1	63
1	42	1	70
1	44	1	105
10	45	—	
2	46	Total, 52	

It appears from this table that the shortest period of incubation was 25 days, and the longest 105 days, but that the latter was 35 days more than the one immediately preceding it. The extreme limits of variation are not widely separated (certainly not if compared with the variation from a few weeks to thirty years, which is given by some authors), and we find on examination, that in by far the larger proportion of cases, the periods of incubation terminated within two weeks of each other; thus in 38 of the 52 cases, or in about four-fifths, this period was from 35 to 50 days. Taking the average of the whole number, it was 46 days.

[1] Nouvelles doctrines sur la syphilis, p. 265.

Similar testimony is give by Bassereau,[1] Victor de Méric,[2] Fournier,[3] MacCarthy,[4] Sigmund,[5] Ricord,[6] and others.

The testimony derived from artificial inoculation (which has the advantage that all the steps of the process are under the direct observation of the surgeon) is essentially the same. Thus in 12 cases of inoculation of the secretion of a chancre, the mean length of the second period of incubation was 48 days; in 14 cases, in which the secretion of various lesions of the skin and mucous membranes was employed, it was 45 days; in 4 cases, however, in which the matter was taken from pustules, it was 82 days.

In my own practice, I have learned to regard the appearance of secondary symptoms between the fortieth and fiftieth day after the development of the chancre as almost certain, and I have never seen a case which was carefully watched, in which they failed to show themselves within three months. Ricord's limit of "six months" will certainly include the most extreme cases.

The conclusion at which we have arrived furnishes the strongest inducement in all ulcers of a doubtful character to defer general treatment, and keep the patient under careful observation until the time for secondary symptoms to appear is passed.

To sum up this whole matter:

A venereal ulcer which is not subjected to specific treatment (so called) *will usually, if at all, be followed by secondary symptoms within fifty days, and always within six months.*

It follows as a corollary from this proposition that

The earliest symptoms of general syphilis (except in cases of hereditary origin) *have been preceded by a chancre, probably within fifty days, and certainly within six months.*

I will merely add that the development of general syphilis is hastened by an elevated temperature, and by those causes which tend to depress the vital powers, as excessive or prolonged exertion, or a dissipated course of life; and that it is, on the other hand, retarded by the contrary influences, and also by the supervention of an acute disease, as continued fever, inflammation of the lungs, etc. It also appears to be earlier in women, in whom mucous patches are developed with great rapidity, sometimes even three weeks after the chancre.

[1] Op. cit., p. 176.
[2] Lettsomian Lectures, 1858, p. 31.
[3] Notes to Ricord's Leçons sur le chancre, 2d ed. p. 466.
[4] Thèse de Paris, 1844.
[5] Wien. Wochenschrift, 1856.
[6] Lettres sur la syphilis, 2d ed., p. 300.

CHAPTER II.

THE NATURE OF SYPHILIS.

In its nosological relations syphilis has been called a contagious and a virulent disease, a specific fever allied to the exanthemata, a disease of the lymphatics, a disease originating in a fungus, a purulent diathesis (Després), and a blood disorder.

Although these appellations, with the exception of the purulent diathesis, are applicable in a restricted sense, they are all of them more or less incorrect and unsatisfactory. It is true that acquired syphilis is communicable through the blood and certain secretions which are contagious, but this is only a comparatively minor feature of the disease.

The same remarks apply with even more force to the term virulent, since the only reason for using it is that virulent diseases, like glanders, farcy, and hydrophobia, are transmitted by means of a morbid secretion termed *virus*, and have periods of incubation. There is, however, no pathological resemblance, much less a relation, between syphilis and these diseases.

Though the adoption of the term "specific fever" in classifying syphilis is urged even by celebrated syphilographers, a careful examination and comparison of the course of syphilis and of the exanthemata shows only certain resemblances in prominent, but from a pathological view merely accessory features. Syphilis originates in a fixed contagion; the exanthemata likewise in a volatile or fixed contagion; they have periods of incubation; syphilis two, the exanthemata one, which are followed by constitutional disturbance and fever; syphilis in this feature being comparatively mild. Further, they all have extensive integumentary and mucous membrane lesions, which in the exanthemata are always inflammatory during their whole course, while in syphilis they are moderately hyperæmic and essentially proliferative. Here is a radical point of difference; the exanthematous eruptions are simply inflammatory, and if cell-proliferation occurs it is of a simple nature, a mere increase of the normal cells. The opposite occurs in syphilis; the inflammatory process is less active and always results in infiltration of new cells entirely foreign in their nature.

In order to complete the comparison which places syphilis in the group of specific fevers, it is urged by the chief advocate of this view, Mr. Hutchinson, of London, that the late or tertiary lesions of syphilis have their analogue in the sequelæ which sometimes follow the exanthemata, and, instead of calling them tertiary lesions, he would call them sequelæ. According to this view, syphilis ends with the