

LESSON XVII.

Résumé showing that the contagious property of syphilis is not an independent virus pervading all tissues, but is confined to the white blood, or tissue-building cells, and that the only peculiarity of such cells is a contagious influence which is not distinguishable by microscopical examination. That its effect is to induce hasty proliferation of cell material, and that the result of this is not primarily destructive, but causes disturbance through mechanical interference with processes of nutrition. The property of contagion, inherent in normal cell development; all troubles occurring after the contagious period of syphilis, which clinical observation has shown to be limited—necessarily considered as *sequela*. Mr. Hutchinson's views on this point; the views of Mr. Henry Lee and Mr. Lane. The *tubercular* eruption the first sequel of syphilis. Its characteristics and behavior. Syphilitic ecthyma; syphilitic rupia; no specific element in their composition. The lepra and psoriasis of syphilis not distinguishable from the simple forms except through effects of treatment, all caused by interference with natural functions of tissues. Evidences of this interference confined to the lymphatic channels. This view supported by Rindfleisch, also by effects of treatment, all alike requiring mercury and the iodide of potassium. Proposal to substitute the term *Period of Lymphatic Obstruction* for the old terms, *Tertiary* and *Quarternary Syphilis*. Reasons for claiming that this syphilitic obstruction is due to damage to lymph channels during the active period of syphilis.

THE SEQUELÆ OF SYPHILIS.

Syn.: Chronic or Late Syphilis, Tertiary and Quarternary Syphilis.—In following the natural history of syphilis, as portrayed in the preceding pages, it will be seen, that, wherever the syphilitic influence is recognized at a given point, culminating in a well-marked manifestation of syphilis, this, on microscopic examination, has been found to differ from the healthy surrounding structures, only by an excessive local proliferation and accumulation of cells, in no way distinguishable from normal germinal cells. It will also be seen that this local proliferation and accumulation, is favored by anatomical conditions, in localities long recognized, clinically, as the favorite seat of such manifestations.

The active period of syphilis, thus marked by excessive localized cell proliferation, was shown to be equally characterized by the contagious property attaching to

cells thus generated. Inoculation of the blood, and of the secretion of all open lesions, during the active period of syphilis, has been found capable of communicating syphilis promptly to healthy persons.

The physiological secretions—milk, saliva, mucous, urine, perspiration, tears, and the spermatic fluid—have not been proven to be agents of syphilitic infection. Where apparently so, in many cases, syphilitic lesions of the mouth or breast have been found, to account for the seeming inoculability of the saliva or of the milk. Repeated experiments have been made by inoculation of the spermatic fluid of a person proven to be in the active stage of syphilis, upon healthy persons, with absolutely negative results.* In this we find confirmation of our position, that the contagious property of syphilis is not an entity, an independent virus, pervading all the tissues and fluids of the organism, but that it is confined to the white blood or tissue-building cells. In this view of the matter we readily see how the physiological secretions above mentioned, which do not contain formative cells, are found also to be free from the contagious property of syphilis.

Thus far, the only distinguishing feature which has been recognized, between normal embryonal cells, and cells which make up the accumulations characteristic of the active stage of syphilis, is the possession, by the latter, of the contagious property. In other words, a *contagium*: the power of setting up in other cells, through simple contact, the same disposition to rapid proliferation, which the so-called syphilitic cells are known to possess. The direct result of this hasty proliferation, as far as we have yet been able to discover, is not a destructive action. It is, simply and only, what we should naturally expect from hastily generated normal material, in excess of the necessities of growth and repair. In representative, uncomplicated cases, it remains for a time, obstructing the tissues by its presence, and then through purely normal processes, (often of necessity set

*Dr. Mireur, of Marseilles. *Annales de Dermatologie et de Syphilographie*, No. 6, tome viii. 1877.

into operation by crowding of the newly-formed cells, prolonged pressure, and consequent innutrition, and also, from general causes), it undergoes fatty degeneration, and is in this way finally eliminated from the affected organism.*

Bäumler virtually supports this view † when he says of the active stage of syphilis, "If there are only a few local deposits, the elimination of the virus may be so much in excess of its production that the organism is gradually freed from it. This takes place in the majority of cases, and, at the expiration of eighteen months or two years, the infection is entirely exhausted."

Mr. Hutchinson, of London, in speaking of the contagious property which attaches to the emasculated white blood cell, which we call pus, says, "All living pus is contagious. . . . I mean," he further says, "that all pus cells possess the power of setting up, when transferred to another home, if that home be a suitable one, a kind of inflammatory action similar to that from whence they themselves had originated." ‡ This, we know, results in the almost immediate death of cells in localities so contaminated. In the case of the germinal cells, contaminated by contact with the syphilitic cells, however, this results in a hasty genesis of cells, a too rapid production, which prevents their highest development; they fall by the way, are heaped up, undergo fatty degeneration, and are, or may be, eliminated. Nor is it alone in diseased cells that a contagious property is claimed to reside. We have distinguished authority for saying that, in the normal development of epithelial structures, the property of contagion is an essential feature.§ If this be true, it at once becomes evident that the contagious property is not of necessity a virus; and it must, I think, be suggested, in this view of the matter, as equally evident,

* A fatty metamorphosis, entirely like that which occurs pathologically, occurs in the normal condition of the organism. Wagner, p. 305.

† P. 247 of Ziemssen's Cyclopædia, Am. ed., vol. iii.

‡ *London Lancet*, September 18, 1875, p. 409.

§ Text-Book of Pathological Histology. Rindfleisch. Am. ed., 1871, p. 100, § 83.

that the so-called virus of syphilis is simply the manifestation of a property or personal influence, inherent in all cells, whether healthy or degraded, and which is as subtle and intangible, as incapable of material demonstration, as the influence which one mind exerts over another. Is it not then possible, that the mischief which syphilis does, is rather the result of an interference with the normal processes, through hasty development, brought about by this influence, than of the action of a specific virus?

In any event this contagious property of syphilis ceases with the active period of the disease. After this has passed, the secretions of open lesions, and the blood, no longer contaminate. It may also be said, that, in by far the greater number of subjects of syphilis, (and more especially those who have been systematically and judiciously treated), they remain free from any farther sign of the disease. If this be so, then we may legitimately claim, that, at the termination of the active period of syphilis, just described, all subsequent troubles must be looked upon as *sequelæ*, and not as a stage of syphilis, any more than we should look upon dropsy as a stage of scarlet fever, or stricture as a stage of gonorrhœa. Mr. Hutchinson, who is recognized as one of the most advanced of the English authorities on syphilis, says: "What are called tertiary symptoms, do not constitute a necessary stage, and are rather to be regarded in the light of *sequelæ*, which may or may not show themselves."* Mr. Henry Lee (also a valued authority), in his Hunterian Lectures, delivered at the Royal College of Surgeons of England in 1875, presents the same view of so-called tertiary or late syphilis, thus: "The pathological changes in this class, occasionally, according to Mr. Lane's view, present themselves in patients, who have passed through the primary and secondary stages of syphilis, but in whom the venereal poison no longer exists, and therefore cannot be transmitted."

This is, I know, quite at variance with the usual

* *London Lancet*, p. 83, January 17, 1874.

teaching in this matter. The accidents following upon the active period of syphilis are usually represented, not as sequelæ, but as the direct result of the syphilitic virus, which had never been completely eliminated, but had remained in the system in a latent state. Authorities are quite agreed, however, in regard to the clinical fact, that, after a varying interval, of from one to forty or fifty years from the acquirement of syphilis, a new variety of lesions appears in certain cases.

These are often characteristic, although widely different in locality, appearance, and results. Occurring only in a small proportion of the subjects of active syphilis, they are thus shown, not to constitute an essential stage of the disease, but the accident of it. Thus the so-called *tubercular eruption*, like the papular eruption of acute syphilis, in some respects, is often mistaken for it, but differing, in that

1st, it never* occurs in less than six months, and rarely under a year, from the acquirement of the initial lesion;

2d, it is not symmetrical and generally distributed, but in patches, or groups, or single tubercles,

* I am aware that ulcerative lesions occur, though rarely, at the usual period for the papular eruption, that are accepted by some authorities as belonging to the later stages of the disease. I think, however, in all such cases, that the possible behavior of a papule or a lesion, resulting from the peculiar condition of the subject, will be sufficient to explain the nature of the accident without referring it to the so-called "tertiary stage;" or, if not, it will be found that the patient has had a previous attack of syphilis at a period sufficiently remote to account legitimately for the appearance of a tertiary lesion. The tubercle or its equivalent, viz., an accumulation of so-called *gummy* or germinal material, which is the result of a necessary previous stage, and lacks the contagious element, is the *first* of the accidents of the so-called tertiary stage—the sequel of syphilis. Notwithstanding that M. Cornil, in his recent excellent work on syphilis (p. 204), states that, "In the tubercles and gummata of the skin are seen the latest and deepest manifestations of cutaneous syphilis," yet he also states (p. 215) that "the very first symptoms of syphilis may be deep-generalized pustular or ulcerating eruptions," identical with those coming on after a period of many years (the *sequelæ*), "following immediately after the chancre."—*Cornil on Syphilis*. Am. ed., Phila., 1882. I do not hesitate to claim that such cases, where critically analyzed, will be found to be as rare, as where, in nature, fruit has the precedence of the blossom.—F. N. O.

3d, of deeper color, it is also more elevated—more juicy in appearance,

4th, while frequently ulcerating (and often extensively), it not unfrequently passes off without ulceration, and yet leaving well-marked cicatricial depressions on its site. This latter is the chief diagnostic point, independent of history or other associated lesion, of the tubercular eruption of syphilis. In other cases, under apparently the same conditions, an eruption, sero-pustular in character, may occur, the eruptive points varying from three to six or more millimetres in diameter, often sparsely scattered over the entire body, which soon become covered with thick yellow laminated incrustations, and these, when removed, discover only superficial loss of integument. This is known as the *Syphilitic Ecthyma*. And again, in still other individuals, one or many red spots may appear, which soon vesiculate and become covered with a dark sienna-colored scab, which accumulates in layers, and increasing in size, may reach even an inch or more in diameter, upon the removal of which sharply cut loss of tissue will be seen, not seldom involving the entire thickness of the integument. This is termed by authors the *Syphilitic Rupia*. Examination of all these lesions fails to discover any specific material or element in their composition. The microscope shows chiefly serum, lymph and pus cells, blood and epithelial débris. A depreciated condition of the general system, is always the precursor of such symptoms, especially marked in the rupetic variety. And yet again, eruptions may occur presenting appearances similar to simple lepra, or psoriasis, or eczema, oftentimes so nearly identical in appearance that only the test of treatment enables even the expert dermatologist to decide as to whether the disease is of simple or of syphilitic origin. Underneath the integument tumors sometimes occur, varying in size from a pea to a pullet's egg, in the cellular tissue, or in the substance of the muscular structures; often painless, seldom suppurating, except when subjected to prolonged and habitual pressure, often disappearing spontaneously and readily responding to suitable treatment. Tumors in

the bones, called *syphilitic nodes*, are also possible, occurring, like the previously described lesions of the cutaneous, cellular, and muscular structures, from accumulation of the so-called gummy material, at any time after a year or more from the occurrence of acute syphilis, and up to the latest years of life; painless or painful according as the periosteum is more or less rapidly distended or pressed upon by overlying tissues. Chiefly occurring on the anterior surface of the long bones, especially of the tibiæ, and on the external tables of the skull, occasionally involving the internal table and the diploe, and in such case sometimes disappearing spontaneously without involving the scalp, and without a trace of necrosis, but leaving distinct evidences of loss of bony substance through the influence of pressure by the material cause, the tumor. Similar tumors of bone may occur at any point throughout the bony system, producing disturbance by pressure on important structures.

Tumors in the various organs of the body, occur apparently from similar causes, and in the same irregular way in point of time, involving, in order of frequency, as follows: Testes, liver, kidneys, brain, lungs, heart, etc. In some cases walls of the blood-vessels are found infiltrated with the same material of which the tumors of syphilitic origin are found to be composed, and become obstructed, as in the brain, often causing fatty degeneration of the structures to which they are distributed. In some cases, cicatricial bands are found to develop in organs the subject of syphilitic tumors, and by contraction and consequent constriction, destroy the secreting structures, notably seen in the liver and testes of subjects suffering from the later effects of the syphilitic influence in these organs. It will thus be seen that the diseased conditions, enumerated as characteristic of chronic syphilis (the tertiary and quaternary syphilis of Lancereaux and other authors), are essentially different from true or acute syphilis, in date of appearance, mode and locality of development, and in the entire absence of the contagious syphilitic element. Microscopic examinations have brought to light the very important and interesting fact, that all

the various sequelæ of syphilis, are characterized by the presence of a peculiar material, which, from its physical properties, has received the name of "gummy material." This material has been proven, by repeated and exhaustive microscopical examinations, to be made up of gelatinous fluid, containing normal cells and nuclei, which do not differ in the least demonstrable degree, from the white blood cells and nuclei of a healthy person. Wagner, perhaps the most recent standard authority, says of this gummous material (which he terms syphiloma): "Microscopically syphiloma consists of cells, or nuclei, or both at the same time, so that sometimes the former, sometimes the latter, exceed in number. Young syphilomata, as well as the peripheral parts of the older ones, contain for the most part only nuclei, or nuclei and isolated cells; the older syphilomata, not yet very atrophic, consist for the most part only of cells, or of cells with few nuclei. The nuclei offer nothing characteristic. They are from 0.01 to 0.02 mm., large, round or rounded, or somewhat angular, and contain for the most part a distinct nucleolus. The cells resemble most uninucleate colorless blood corpuscles; their size varies, however, sometimes, between 0.01 and 0.03 mm.; some are even still larger."* Again Wagner (page 436) says: "The influence of syphiloma, on the organism, depends upon the fact, that the affected portions of the membrane and parenchymata, *are more or less incapable of function*; dependent partly on the deposit of cells, and especially of nuclei, upon compression or secondary atrophy of the gland cells, nerve fibres, ganglion cells," etc.

Bäumler, who fully adopts Wagner's views, says: "From the fact of the close resemblance of the cells which pervade the tissues, or occur in the form of young tissue growths, with the blood-corpuscles, it is evident that, however much, they (authors) may characterize syphilitic new formations, *they wholly lack specific microscopic characters.*" He also says: "Tumors of this sort (gummy), varying in consistency,

* Wagner's Manual of General Pathology, Am. ed., 1876, p. 435.

may develop in any organ in consequence of syphilis; but their favorite seats are in the subcutaneous cellular tissue, the skin, in and upon the bones, the liver, the testicles, the brain, the kidneys, and, especially in children, the lungs. According to Wagner's description," he further says, "they present the appearance of a grayish-red, soft, homogeneous mass, either without fluid contents or else yielding a scanty juicy-like mucus. They may occur as infiltrations of microscopic size scattered throughout the parenchyma of an organ; and even when they appear as sizable tumors, as large as a walnut or larger, they are not encysted nor sharply defined, but merge directly into the surrounding tissue." "The effects of a gummy tumor," says Bäumlér, "may extend to a great distance in case it has caused contraction of the calibre of some vessel, especially of a blood-vessel, which is particularly liable to occur when the tumor has its seat in the adventitia of a vessel. Fatty degeneration and wide-spread processes of softening may be the consequences of a tumor in itself insignificant, as occasionally happens in the brain. When situated in the skin, in the subcutaneous cellular tissue, upon mucous membranes and superficial bones, the gumma often makes its way to the surface, since in these situations it is not uniformly enclosed on all sides, but is exposed to unequal pressure. The entire infiltration then ulcerates." M. Cornil still later says of the histology of the "gummata:" "All the pre-existing cellulo-vascular tissue is thus infiltrated and crowded with cells, the enormous quantity of which, *strangles the normal tissue elements, and impairs the circulation.*"* It is reasonable to conclude, from the foregoing facts and views, that contraction of vessels, often plays an important part in causing the lesions of so-called tertiary syphilis: a purely mechanical matter quite independent of the influence of any virus. In passing, I desire also to call your attention to the statement of Bäumlér, "that gumma often makes its way

* "Cornil on Syphilis," Am. ed., Henry C. Lea's Son & Co., Phila., 1883; p. 207. Ibid., at pp. 208 and 209, illustrations are given of the manner in which these cells obstruct and obliterate capillaries and veins.

to the surface." I hope to be able subsequently to show how this occurs—not making its way, but progressing, by natural forces, in line of the natural physiological channels.

Ricord claims that tertiary lesions are not inoculable, and cannot be transmitted by hereditary descent. Bumstead states, in his last edition, after reviewing this matter, "Hence we consider the blood and the secretions in tertiary syphilis innocuous."* "Diday performed inoculations with the blood of persons in the tertiary stage of syphilis, and invariably with a negative result. Von Bärensprung states that from observation as well as experiment he is persuaded that so soon as the syphilis has passed into the destructive forms of its tertiary stage, it ceases to generate an inoculable virus," and, says Bäumlér, "clinical observation seems to confirm this view, both in respect to direct contagion and with reference to the inheritance of the disease."†

These authorities, together with Lee, Hutchinson, Lancereaux, and many others of our best clinical and scientific observers, thus agree, fully, on this very important point. What then, is there to show that the so-called "period of gummy products" (Lancereaux) is not simply a period of sequelæ, when they are found, practically, by competent observers, to be free from the contagious property, and when by scientific investigators it is shown that they are capable of producing, *without a virus*, all the lesions, without exception, which ever occur in the so-called tertiary or gummy stage of syphilis?—producing them, too, simply by interference with function of vessels and organs, not improbably through pressure, occasioned by the presence of abnormal, or excessive accumulations of material, which the most experienced and learned microscopists, cannot distinguish, from the normal elements of new formations.

If then we accept the lesions of the so-called tertiary stage (or the period of gummy products of Lancereaux)

* Venereal Diseases, Bumstead and Taylor, p. 448.

† Ziemssen's Cyclopædia, Am. ed., iii. 57.

as sequelæ, where shall we look for the causes of the undue accumulations of normal germinal material, at every point in the human organism, which are known to occur as a sequence of syphilis? Naturally, it appears to me, in interferences with the lymphatic channels, through which, according to Rindfleisch, the nutritive material exuded into the tissues, in excess of the necessities of growth and repair, is returned to the general circulation.*

According to the same distinguished authority,† “Luxurious new formations, catarrhs, and surface secretions of all kinds, must be produced when the lymph conveyance is hindered, and,” he further says, “we will find this position in pathology very frequently confirmed.” One thing is now admitted by all recent accepted authorities, namely, that all the surface secretions and new formations of the tertiary or gummy period, all the infiltrations and tumors, all the peccant elements which produce the varied lesions in the skin, in the cellular tissue, in the bones, in the viscera; by whatever name characterized, are but the various forms of infiltration or deposit of gummy material. If this is, as it would appear by the results of scientific investigation to be, nothing more nor less than normal germinal elements, thus retained at various points, then the only legitimate way of accounting for this retention, would appear to be through obstructions, “hindrances to the lymph conveyance,” which, Rindfleisch insists, is of itself sufficient, independently of any question of syphilis, to produce just such results as are known to occur in the so-called tertiary stage or period of gummy products.

And yet another circumstance would favor this view: clinical experience has shown conclusively that whatever the form or locality or name of a lesion, whether in the skin as a scaling eruption, or as a tubercular eruption, or as a heaping up of gummy exudation in scabs, with or without ulceration, or as an ulcerative

* Rindfleisch, *Pathological History*, Am. ed., 1871, p. 92.

† *Ibid.*, p. 93.

loss of tissue, or whether as a gummy tumor in the cellular tissue, in the bones, in the viscera, or in the brain and nervous system—one and the same treatment is adopted and found most efficacious and judicious for all, namely, *the administration of mercury and the iodide of potassium*. I have not heretofore objected to the term *gummy period* (so called only from the similarity of its products to the viscid material which it was believed to resemble), nor to the term *tertiary*, which is a purely arbitrary one; but it appears to me that we may now venture to substitute for these *the period of lymphatic obstruction*, as more scientific, because expressing the localization of lymphatic elements, which is proven to occur, and as suggesting the lymphatic canal system as among the possible causes of that localization. It appears to me that, inasmuch as it has been shown that the lymphatic spaces and vessels are primarily and chiefly affected and obstructed, during the active stage of syphilis, it is not unreasonable to infer that damage might have occurred to those spaces and vessels, during the active period of syphilis, which, if properly investigated, would lead to the true explanation of the failure of that system, to return to the general circulation, the germinal material exuded or developed in the tissues, in excess of the necessities of growth and repair, such as is practically demonstrated to have occurred in the so-called tertiary or gummy period of syphilis. There are various known facts and analogies which afford strong presumptive and circumstantial evidence that this view is the correct one. Among these we have, first, the fact, generally recognized, that the more severe and prolonged the secondary or active stage of syphilis the more certain and severe are the so-called tertiary or gummy manifestations.* Second, the results of treatment show, that the difficulty is not simply an aggregation or infiltration of material, which, when removed, restores the patient permanently, but that the conditions for its reproduction remain, and relapses occur.

* Hutchinson, *London Lancet*, January 31, 1874, p. 159.