PRACTICAL CLINICAL LESSONS

ON

SYPHILIS

AND THE

GENITO-URINARY DISEASES

VOL. I.

SYPHILIS AND CHANCROID

BY

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TO

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RENOWNED AS A TEACHER, DISTINGUISHED AS A SURGEON, EMINENT AS A CITIZEN, UNIVERSALLY BELOVED FOR HIS NOBLE NATURE AND HIS GENEROUS ACTS,

This Work,

WITH HIS CONSENT, IS GRATEFULLY AND AFFECTIONATELY DEDICATED BY ONE, AMONG THE MANY, OF HIS MEDICAL BRETHREN, WHO OWE TO HIM— NOW FULL OF YEARS AND HONORS —THE GREATEST MEASURE OF THEIR

PROFESSIONAL SUCCESS.

PREFACE.

For a number of years it has been my custom, to distribute, from time to time, to the students of the College of Physicians and Surgeons, short papers, of a few pages each, which were entitled "*Class-room Lessons.*" In these I endeavored to embody important principles, in the study of syphilis and the genito-urinary diseases. The lessons were intended to prevent errors, arising from inattention, or from misunderstanding of the statements made during the lectures in the college, and at Charity Hospital. This was rendered especially necessary, from the fact that my own views, on certain important points, differed, essentially, from those embodied in the text-books in general use. In the first place, on the subject of syphilis: I had been unable to accept the statements of all authorities, that it was a mysterious, instantaneous, poisoning of the organism, in defiance of all known physiological and pathological laws. A careful study of the matter, in connection with modern discoveries in physiology and pathology, had convinced me, that an explanation of all the lesions and manifestations of syphilis was possible, through known physiological and pathological processes, and that, the then universally accepted view of the supernatural advent and behavior of syphilis, was incorrect. This position was taken, in my lectures in the college, in 1868. In 1870, it was presented to the medical profession, in a paper before the Medical Society of the county of New York, and was followed by another paper, on the same subject, in 1871. Up to that time, no systematic effort had been made to explain the various manifestations of syphilis, on a scientific basis. In 1866, Beale had claimed, from his investigations of variola and the cattle disease, the

presence of a germinal cell, as a cause of syphilis. Beisiadecki, of Krakow, had published, in 1867, the results of his microscopical examination of infecting chancre, in which he showed a localized proliferation of cell elements in the lymphatic vessels, as a starting-point in syphilis, and claimed that this *might* afford an explanation, through which the general infection might be explained. I took up the matter at this point, and through the results of pathological and histological researches of accepted authorities in pathology and histology, in other fields, succeeded, as I believed, in explaining the various syphilitic phenomena throughout the entire course of the disease. A review of my papers, in the London *Lancet* of Nov. 9th, 1872, concluded with the statement that "these new views on the physiology of syphilitic infection are not based upon the results of any experiments or new facts, or on the unravelling of observations. They consist mainly of deductions drawn from a close and elaborate reasoning on the acknowledged features of syphilis in connection with the latest doctrines and hypotheses of certain pathological teachers." Starting with the disease-germ, derived from the degraded human germinal cell of Beale, supported by the microscopic examinations of Beisiadecki and Verson, as to the proliferation of new cell material at the site of syphilitic inoculation, and extending only in the line lymph channels; supported still farther by the clinical facts, in regard to gradual implication of lymph vessels and glands, by the known physiological processes in health, and under the influence of syphilitic infection, and also through the concurring testimony of such histological and pathological authorities as Chaveau, Beale, Schweiggerseidel, Stricker, Kolliker, Teichman, Kohn, Conhiem, Beisiadecki, and others, I was enabled to present a reasonable explanation of the course of syphilis, from its inception to its termination. It was scarcely to be expected, that such a radical departure from the views of the text-books, would be received without discussion; but the position taken was so amply supported by all known pysiological and pathological facts, that no opposing arguments were offered.

The first authoritative publication in America which followed, practically adopted and supported the new views thus: (Bumstead and Taylor, N. Y., 1869, 4th ed. page 443) "The secretions of syphilitic lesions are found to consist of a serous fluid containing numerous granules or molecules, *which are masses of protoplasm or germinal matter holding the contagious properties of syphilis.* These microscopic bodies are probably taken into the circulation by the lymphatics, and conveyed over the body. . . In the secondary period of syphilis these *cells* are very numerous, and the body may be covered with papules and tubercles *composed of them.* . . As the disease wanes . . the cells no longer have a tendency to reproduction which characterizes them in the early stages, but rather degenerate. *Hence we consider the blood and the secretions in tertiary syphilis innocuous.*" *

The same views of syphilitic infection were presented in the second edition of Berkeley Hill's work, by Berkeley Hill and Arthur Cooper, London, 1881 (p. 75), and erroneously attributed to Auspitz of Vienna (although in a foot-note the reader is referred, for further information on the subject, to my work on the Physiological Pathology and Treatment of Syphilis) thus: "The syphilitic virus enters the system by the absorbents. It first sets up plastic growth in the walls of the lymphatic vessels at the part where it is implanted. These walls thicken and throw off into their interior, *cells which contain the virus;* as these cells float along they convey the virus still further inwards. But the infiltration of successive parts of the walls of the lymphatic vessels also conducts the virus inwards. When a lymphatic gland is reached, the same proliferating process ensues in the gland, until the cells are sent off through the effersent ducts to other glands, and so on to the thoracic duct. Thence cells, containing the virus, are poured, direct into the circulation, by the veins, and are thus quickly carried to the several tissues of the body. *Then appear the signs of general constitutional infection.*"

* Italics my own.

Again, in the work of M. Cornil on syphilis (Paris, 1878), translated and edited by Profs. Simes and White, of the University of Pennsylvania, "with the consent and approval of the author," and published in 1882, this same view of the mode of syphilitic infection, is extracted from my book, preceded by a statement (p. 21) of opinion that, "*it presents fewer inconsistencies than any of the other theories;*" and on page 23, "that it seems impossible, in the light of certain well-known facts, to deny that the syphilitic poison gains access to the general circulation, *chiefly*, if not entirely, by the lymphatics;" and again, page 25, "the action of mercury in relieving the early symptoms, also becomes intelligible in the light of this theory, through its influence in hastening destructive metamorphosis and bringing about fatty degeneration; and its general undoubted tendency to relieve tissues encumbered with superfluous material. Small doses, most naturally, first influence newly-formed immature deposits, such as those due to syphilis, and hence the advantage of the modern treatment, which avoids salivation, due to the toxic action of the drug on the *healthy* tissues, and depends upon moderate, long-continued doses. The necessity for the use of iodide of potassium, in the later stages, with or without mercury, also becomes apparent, when it is remembered that iodine is the most powerful diffusible stimulant of the function of absorption. with which we are acquainted, and that also, it has a certain established value, in hastening tissue change, especially in unhealthy formations."

In view of the direct, or implied, approval of my position, by these recent eminent authorities in matters involving the nature, behavior, and treatment of syphilis, it has seemed proper that I should make use of every opportunity to advance these views, and to explain, on physiological and histological grounds, the various points in the diagnosis and treatment of cases of spyhilis and its sequelæ, herewith presented.

In the second place: Early in my clinical teaching, I had found myself unable to accept the conventional views, held by authorities on many important points in genito-urinary diseases. Especially as to the nature

and treatment of gonorrhœa and urethral stricture and the normal urethral calibre. As to the latter, I could not accept the standard universally taught, but claimed, from actual measurements, an individuality for every urethra, a *proportionate relation*, between the size of the urethra and the organ in which it is situated, and an *average* calibre, much greater than previously estimated. I also claimed, contrary to all previous teaching, a radical cure of urethral stricture, through *complete division*. These views, and others growing out of them, involving important questions in practice, supported by several hundreds of practical examples, defended in written and in oral debate, against eminent authorities in this country and in Europe, made it especially necessary for me to have a medium of communication with students, which could not be misinterpreted or misunderstood. With an especial view to this, the second volume of this work was suggested. No attempt has been made to make it a systematic general exposition of genito-urinary diseases. The aim has been, chiefly, to present clinical cases, selected as typical and practical, which have been subjects of observation and study, in my private practice, and in my cliniques, and such additional material illustrative of important practical points, and my own experience in the treatment of such cases, as I could readily command. When some learned and not too busy surgeon, in gathering, from every quarter, the material for a full and systematic treatise on genito-urinary troubles, meets the everyday experiences which have been presented in the foregoing pages, it is my ambition, that some points may be found among them, which will be considered worthy of preservation, in more pretentious form. Meanwhile, I trust that many surgeons may find, in the cases recited, and in the principles and treatment advocated, a key which will help to explain much that has heretofore appeared obscure, and difficult of management.

F. N. Otis.

New York, 108 West 34th Street, April 30, 1883.

CONTENTS.

LESSON VIII.

LESSON IX.

LESSON X.

LESSON XI.

LESSON XII.

LESSON XIII.

LESSON XIV.

LESSON XV.

LESSON XVI.

LESSON XVII.

LESSON XVIII.

LESSON XIX.

LESSON XX.

LESSON XXI.

LESSON XXII.

LESSON XXIII.

LESSON XXIV.

LESSON XXV.

LESSON XXVI.

LESSON XXVII.

LESSON XXVIII.

LESSON XXIX.

LESSON XXX.

PRACTICAL CLINICAL LESSONS

ON

SYPHILIS AND THE GENITO-URINARY DISEASES.

LESSON I.

Nature of Gonorrhœa—Of Chancroid—Of Syphilis—Infective Principle of Syphilis a living Germinal Cell—Its History dating back over 2000 Years B.C.—Syphilis never of Spontaneous Origin—Always Acquired from a Human Being suffering with Syphilis—Always Requiring a Breach of Surface for its Introduction—The Virus of Syphilis not an Irritant—The so-called Incubation of Syphilis—Its Practical Importance—Admixture of Syphilitic Secretions with Vicious Uterine Secretion a common cause of error in Diagnosis—The Initial Lesion of Syphilis due to a Localized Cell Proliferation—Not Necessarily resulting in an open Lesion—Clinical Cases illustrative of the Development of the Initial Lesion of Syphilis—Treatment by Excision.

GENTLEMEN: Through the light of modern teaching and experience, we recognize *three* separate and distinct contagious diseases resulting from venereal contact; viz., *Gonorrhœa, Chancroid, Syphilis.*

1st. GONORRHŒA.—A vicious, non-specific inflammation of mucous membrane, characterized by free purulent secretion without ulceration, chiefly occupying the urethra of the male, and the vagina and urethra of the female; exceptionally, the mucous surfaces of the bladder, the eye, the nares, the rectal and buccal cavities; usually, though not necessarily, of venereal origin; its contagious property transferred to sound mucous membrane without breach of tissue; its action immediately following contact; its vicious principle incapable of

transmission through the general circulation; its occurrence predisposing to subsequent attacks.

2d. CHANCROID.—An acute, contagious ulcer of venereal origin, whose contagious property is incapable of contaminating the blood, and hence can never establish a constitutional disease, nor be acquired by hereditary transmission; is characterized by an acute ulcerative action, with free suppuration; is commonly initiated through a breach of surface, but possibly occurs upon sound tissue; is usually multiple, and may occur repeatedly in the same individual.

3d. SYPHILIS.—A specific, contagious, constitutional disease, caused by the inoculation, upon any part of the human body, of a peculiar principle or *contagium* called the *Syphilitic virus*, which, after an indefinite period of apparent rest, or so-called incubation, produces, at the point of inoculation or entrance of the *contagium*, a characteristic lesion; this followed by another period of apparent rest, to which succeeds a group of well-established evidences of the contamination of the general system. The characteristic initial lesion is usually solitary; sluggish, and non-suppurative in its development; inoculable with difficulty upon the person bearing it; and as a rule occurs but once in the same individual.

During the course of clinical lessons which we inaugurate to-day, I propose presenting to you cases of each one of the above-named diseases, under a variety of circumstances and in different phases of their development. However ample the field from whence clinical cases are drawn, it is scarcely possible always to secure such a choice as will permit the pursuance of a rigidly systematic arrangement in their presentation; I shall, however, endeavor to select the cases so as to show you the consecutive manifestations or lesions of each disease, as far as circumstances will allow.

To-day I purpose presenting to you a number of persons exhibiting one or more phases of the most important of the three diseases just mentioned, viz., *Syphilis.* This disease is produced by the inoculation of a specific virus upon any part of the human body, as previously stated. Of the origin, nature or composition of

this virus—vital, physical or chemical—we know practically but little.

The microscope has been brought into requisition by distinguished experts through the last quarter of a century, with the expectation of isolating and analyzing this so-called virus, but it has eluded all search. Similar investigation as to the origin of such contagious diseases as variola, vaccinia, relapsing fever, and the cattle-plague,* have resulted in establishing the fact that a degenerated, living, germinal cell contains the infective principle or *contagium*, the so-called virus, through which these diseases are communicated. Beale was the first to claim that a similar origin would be found for syphilis, but he failed to make the actual discovery. As we proceed, however, it will be found that much valuable circumstantial evidence will be met, in corroboration of Beale's view, and afford a possible interpretation of the syphilitic processes in harmony with recognized physiological and pathological laws.

Of the history of syphilis so much has been written that I have not the time, if I had the inclination, even to epitomize the labors of syphilitic historians. I will briefly state that books have been written to fix its origin at about the fifteenth century, attributing it to the effects of excesses in camp at the Siege of Naples, 1494; others to prove that it originated in America, and was carried to Europe by Columbus at about the same period; others, again, and with more reason, assert that Moses, the great Jewish lawgiver, knew about it; and the dispute as to the bad eminence of having originated syphilis ran high, and higher, involving poets, historians and doctors, getting up no end of bad blood, until a recent time (1863), when a Frenchman, Capt. Dabry by name, in translating a very ancient record of Chinese medical lore, found this same syphilitic disease thoroughly described in its various stages as existing and flourishing over two thousand years before the Christian era.

Its antiquity, and its prevalence to a greater or less

* Beale on the Nature and Origin of Disease Germs.

extent in every known country, enable us safely to affirm that it has not been from lack of opportunities to study the development of syphilis that its constituent elements are unfamiliar to us. On the contrary, it has been observed with probably more care, with more scrupulous nicety, with more laborious and painstaking accuracy, than any other disease with which the human race are, or ever have been, afflicted. It has not only been studied and observed by the keenest, the most erudite, the most profound practitioners and philosophers the medical profession has ever produced, but it has been the altar upon which not a few have offered up their own bodies as subjects of scientific experiment, throwing health—even life itself—into the investigation of this foulest and most terrible disease. With the great John Hunter heading the list, fully half a score of recorded names attest the courageous self-abnegation, the grand enthusiasm of our professional brethren in the past, whose labors and sufferings furnish us to-day with all-important and indisputable facts concerning the evolution and development of syphilis. Through such earnest investigations, and by extended observation of the disease as accidentally acquired, it has been accepted—

1st. That syphilis is never of spontaneous origin; that no emanations from natural causes, no admixture of diseased conditions, no intermingling of necrotic elements, no combination of vicious indulgence, is capable of establishing this disease *de novo*. It has always and invariably as a starting-point a human being suffering with syphilitic disease. Every syphilitic has contracted his syphilis from some antecedent syphilitic—has received into his blood a virus or *contagium* which has circulated in the blood of another suffering with syphilitic disease.

2d. That for its introduction into the human system it requires a breach of surface—a solution of continuity; that it is not absorbed through sound tissues; that it is not acquired through inhalation. An entrance of the syphilitic principle always requires a pre-existing artificial port of entry. This may be accepted as an unvarying

rule as regards the *acquirement* of syphilis. The child may contract the disease *in utero* from the diseased blood of the mother. The mother may, it is claimed (not proven), become infected through the child in her womb, diseased by the influence of the male parent. These possible exceptions do not invalidate the spirit of the law requiring a breach of continuity for the entrance of the syphilitic virus into the human organism.

Though the constituent elements of the syphilitic virus are not known, this much we do know, viz., that the secretion emanating from a certain well-recognized kind of sore,—which we call the chancre, or the initial lesion of syphilis,—when introduced, by the aid of a lancet, under the cuticle, or applied to an abraded surface anywhere upon a healthy individual, produces, after a definite period and with absolute certainty, a lesion presenting similar characteristics, and is followed by certain other evidences of a contamination of the system which cannot be produced by any other known agency.

We know also that the aforesaid secretion in which the virus is hidden, when free from extraneous matters, is of a bland, unirritating nature in its local action upon living tissues; that, introduced through an artificial puncture or an accidental abrasion, it gives no immediate token of its power—it does not in any way interfere with the natural, rapid and complete healing of the wound. In this particular there exists a radical difference between the syphilitic virus and that of the local contagious ulcer called the *Chancroid*, and of the purulent secretion of a *Gonorrhœa;* both of which produce an *immediate* inflammatory action on the site of their initiation.

Given, then, a case in which the syphilitic virus has been introduced into the system through a puncture or an abrasion and has been succeeded by a complete healing of the wounded part, let us consider what follows.

1st. A period of incubation, so called,—a period of apparent rest; a period during which the subject of the experiment is entirely free from the least evidence of the introduction of the poison into his economy, either

at the point of inoculation, or through any constitutional disturbance or internal or external sensation of any description whatever.

No feature in the development of syphilis is of more practical importance than this period of apparent incubation. A failure to appreciate it is fraught with discomfiture to both physician and patient. Lulled into a false security by the healing of a lesion following an illicit venereal contact—even assured of freedom from disease by his medical adviser—many an unfaithful benedict returns to his marital allegiance, only to realize the disaster after an innocent wife has been infected with syphilis, and through her the disease, it may be, transmitted to a luckless embryo.

The period of apparent incubation, according to authorities, varies in different subjects from ten to seventy days. The causes of this variation are not well understood. It is supposed by some to depend upon the degree of activity of the particular specimen of virus inoculated; by others upon some peculiar condition or idiosyncrasy of the subject. The fact, however, that in the great majority of cases of experimental inoculation of the virus, from whatever source, the results are much more uniform, being seldom less than eighteen nor more than thirty-five days, would lead to the belief that other influences than quality of the virus or peculiarity of the individual affects the term of *apparent* incubation. Experiments in regard to the contagiousness of non-specific pus have demonstrated its erosive property under certain conditions. Secretions from a diseased uterus, and even from the Schneiderian membrane, are known to produce excoriation of sound mucous tissues and of integument, and even to set up a true ulcerative process. We may then easily admit the possibility of admixture of the simple non-irritating secretion from an intra-vaginal syphilitic lesion with secretion from a diseased uterus, capable of effecting a solution of continuity in sound tissue; the time required for such an effect varying with the degree of irritant power and the condition of the part to which it is applied. *Thus, in* the folds of integument upon the penis,

where heat and moisture are at the minimum, with even a decidedly vicious secretion, many days might elapse before the dry cuticle would be eroded sufficiently to afford entrance to the accompanying syphilitic poison; or, on the contrary, should the secretion be applied to the moist delicate lining of the prepuce, the solution of continuity would be greatly facilitated. Again, in case of fracture of the skin or mucous membrane, ulcerative action might be set up coincidently with the vicious contact; and yet in neither case would the lesion be due to or indicative of the presence of the syphilitic virus. And this fact, that the syphilitic virus *may* be associated in the same individual with vicious uterine secretions, and *also* with the specific secretions of chancroid capable of effecting a solution of continuity in sound integument or mucous membrane, naturally leads to frequent errors in diagnosis. There is, I repeat, absolutely nothing in the condition of the patient, at the point of entrance of the syphilitic poison, or at any other point, which can be considered a proof of syphilitic infection, until the termination of the (so-called) period of incubation. And this time is announced by a peculiar change in the condition of the tissues *at the point of entrance of the virus, and nowhere else;* this change, too, occurring equally whether an abrasion or ulceration has been previously established at this point by other causes, or when the healing has immediately followed the introduction of the virus. An exudation or development of cellular and fibro-plastic material takes place in the tissue at the point of entrance of the *contagium;* and this process results in an *induration* perceptible to the touch, and establishes a well-defined characteristic mark of syphilitic infection. This, under the microscope, is found to consist of lymphoid or germinal cells apparently accumulated and *proliferated in loco*, as a direct result of the syphilitic inoculation. The excessive localized proliferation of cell elements constitutes a marked feature in every stage of syphilis. Its first appearance at the site of entrance of the poison forms the initial lesion, or the first positive manifestation of the syphilitic influence. The

course and duration of the initial lesion varies in different subjects, in some cases appearing as a nodule covered by sound cuticle or mucous membrane, varying from a slight increase in thickness to a distinct cartilaginous nodule as large as a pea. It may remain stationary for a time, and then terminate in resolution—that is to say, undergoing fatty degeneration, become quietly absorbed; or it may take on a more active process, involving the destruction of the overlying tissue and an acute disintegration of its elements; carrying away with them a certain limited amount of the original cellular tissue involved in its meshes, and producing an ulcer-like lesion, but which, however, is independent of true ulcerative action; its secretion thin and serous, made up, not of pus, but of hastily generated cell material; its natural course sluggish, and but little influenced by local treatment; healing at last, *over* the induration, while the induration continues dense and characteristic, not unfrequently throughout the entire course of the constitutional disease.

Some of the points of interest in regard to the incubation and induration of syphilis, which I have briefly set forth, will be apparent in the cases which are now before you. From the first, James B., aged 23, we glean the history of an exposure about the 13th of August last, followed by a soreness of the "bridle" or frenum, which lasted for two or three days, from which time nothing especial was observed until the second week in September, when he noticed a "bunch" in the loose tissue of the frenum which became chafed about a week ago, and made a sore, and which grew gradually larger up to the present time. It is now, as you can see, about the size of a threepenny piece, shallow and smooth, presenting a fine granular surface with but little moisture. As you pinch it up between your thumb and finger, the induration of which I have spoken may be distinctly felt; and I present this case to illustrate the history of its origin, and which is classical for a single variety, and that you may test the induration, which is well marked,

In Case II., George W., a baker, aged 19, presents

three points of apparent ulceration, one upon the side of the frenum about the size of a split pea, and two a little larger, in the furrow behind the glans penis. George has no distinct remembrance of the time after exposure when these sores first appeared, but thinks about a week or ten days; has had them about a fortnight; has been to a physician, "who burned them with caustic" several times.

The true syphilitic lesion is usually, though not always, *solitary*, as in the case first presented. Here the existence of three points of lesion, and appearing within *two* days from exposure, militates against the idea of their syphilitic nature. You will also remember that the characteristic syphilitic lesion at the point of entrance of the virus is seldom less than 15 or more days. There is, however, a distinct induration about the base of these sores, little if any less than that which you recognize in Case I. But when I tell you that simple sores and even incised wounds become indurated by irritant applications, and you recall the patient's statement that these have been "burned out with caustic," you will realize the difficulty of making a clear diagnosis at present. We will advise a simple water dressing, and if the induration is due to the application of the caustic it will soon disappear.

Case III. We have here in a patient, 36 years of age, a mass of induration of the size of a hickory-nut, developed in the tissue of the inferior portion of an elongated prepuce. Phymosis, or closure of the preputial orifice, has resulted, and is almost complete. He complains, from this cause, of much difficulty in passing his water. On pressure, a gray, serous-looking fluid exudes from the preputial orifice; a shallow excoriation of its inner surface is observed when the prepuce is strained back. The glands of the groin are distinctly enlarged, but painless; a distinct papular eruption covers his chest, arms and back. The history of this patient develops an exposure two months ago—not for a month previous, and not since. Three weeks after connection he noticed a "hardness," about the size of a pea, inside the prepuce, which has been growing ever since. He has had no

trouble from it except the pain in passing water. This case appears to me a clear one of syphilis. If the induration and its history were not sufficient, we have positive proof in the additional evidence furnished by the glandular swellings and the coppery papular eruption—the significance of which I shall have occasion to refer to on a future occasion. An operation is here called for, to remove the indurated mass on account of the phymosis which it has occasioned. I shall, therefore, proceed to remove the entire prepuce by the introduction of a director upon the superior surface of the glans, and back as far as the fossæ; then passing along it a curved bistoury, I bring it out over the fossæ glandis, and, dividing the intervening tissue, remove the redundant mass, including the induration, with a single cut on either side, completing the incisions at the frenum.

You will observe that the hemorrhage here is very slight, no vessels of much size having been severed. Usually there is quite free bleeding from the vessels of the frenum, in such case requiring ligature. The operation will be completed by bringing the cut surfaces into apposition with a very fine silk thread, by the glover's suture, which I invariably use in bringing the cut edges together after a circumcision.

LESSON II.

Non-Auto-inoculability of Chancre—Exceptional Cases—Prevention of Constitutional Infection through Excision of the Chancre Denied—Rapidity of Infection through Germinal Material in Proportion to the Rapidity of the Cell Proliferation and Size of Corpuscles Diminishing in same Ratio—Syphilis Characterized by Comparatively Slow Proliferation—Infective Cells in Syphilis not necessarily Differing greatly in Size from Normal Germinal Cells—Differing only in Amount, Peculiar Aggregation, and Characteristic Infective Property—Gross Appearances of the Excised Chancre—Microscopical Examination—Beisiadecki's Observations in Twenty Specimens—Confirmation of the Claim that the Initial Lesion is Formed by Cell Proliferation, *in loco*, and not the Result of Inflammatory Action—The Open Lesion a Legitimate Result of Interference with the Vessels of Nutrition from Mechanical Pressure caused by the Cell Accumulation—Clinical Cases Illustrative of Characteristics of Chancroid.

In briefly characterizing the initial lesion of syphilis, in the previous lesson, I spoke of it as *non-inoculable upon the person bearing it.* This may be laid down as a rule where the *Chancre* (as this lesion is usually termed) has not been subjected to irritation sufficient to set up a purulent discharge. When pus is present, however, inoculation may result in an ulcerative lesion. In Case III., previously cited (p. 25), the lesion was apparently free from this complication, so that its removal will not be liable to inoculate the cut surfaces.

The effect of removal of indurated chancre by excision has been the subject of controversy, some authorities claiming that early excision of the initial induration may wholly prevent systemic infection. Auspitz and Kölliker, of Vienna, the former in 1877 and the latter in 1878, reported cases, in all numbering about 40, where such excision was believed to be effectual in preventing the occurrence of constitutional syphilis. It was even stated that in several of these cases enlargement of the inguinal glands was already well marked at the date of the operation. It is difficult to understand how such a claim can be seriously advanced when there is such

positive proof that the disease has already involved the lymphatic system beyond the site of the initial lesion; and when we consider the fact that the inguinal glands are involved, as a rule to which there are few exceptions, by the time the induration of the initial lesion is distinctly recognizable, we must deny, absolutely, even the possibility of the cure of syphilis through excision of the initial lesion alone. It is now beyond question that the infective principle of syphilis entering at a given point gradually invades the system—and as far as we are able to trace it by gross appearances and microscopic examination it is confined to the lymphatic vessels and glands until it enters the blood through the great lymph channels. Its presence, as has been previously stated, is signalized by local cell accumulations, producing the characteristic enlargement and induration, first at the point of inoculation, then of the adjacent lymphatic glands, and subsequently of every recognized lesion of the active stage of the disease. Inoculation of all or any of the juices or secretions of these lesions upon healthy persons will surely communicate syphilis to such persons. Such secretions, under the microscope, are found laden with cell material: germinal matter analogous to that which has been demonstrated by Beale, Chauveau, Burdon-Sanderson and others to contain the infective principle of variola, relapsing fever, the cattle-plague,* etc., previously referred to. The rapidity with which the infective germinal material is proliferated, would appear by the statements of the authorities just mentioned, to be in proportion to the malignity of the disease, and the size of the infective cells or corpuscles to diminish in the same proportion. It is not then remarkable that in a disease like syphilis, when its development is so gradual that months elapse before its climax is reached, the cell element should vary but little from the normal conditions. This would appear to be not improbable, for the closest microscopic investigations have failed to dis-

* Disease Germs, their Nature and Origin. Lionel Beale. London, 1872. Page 143, etc.

tinguish the diseased from the healthy cell material, and it is only by its abnormal amount and peculiar aggregation, together with its infective property, that it can be differentiated from the most healthy germinal matter. I will now call your attention to the gross physical characteristics of the initial lesion (Case III.) just removed by excision.

It has exactly the appearance and feel of a mass of cartilage, and the sensation transmitted through the fingers as the knife is drawn through it is the same as if cartilaginous material were divided. There is no appearance of vascularity. The preputial tissue in which it is imbedded, and in which it is freely movable, is apparently free from disease. The microscopical examinations of such indurations show that they are made up of cell accumulations which involve even the walls of the blood-vessels, and bear out very strongly the claim that they are not the product of an inflammatory process, but of a local cell proliferation at this point. Alfred von Beisiadecki, of Krakow, has given us the results of a very exhaustive microscopical examination of twenty specimens of this variety of indurated tissue.* He says: "The *induration* consists in a cell infiltration of the papillæ of the corium and subcutaneous connective tissue. The infiltrated cells are similar to those of dermatitis. They are round, have one or two nuclei, have a finely granular protoplasm, and separate the connective tissue equally. These fibres retain the normal size, are not infiltrated as in dermatitis; they are apparently denser and more resistant to chemical reagents. But the arrangement of the cells differs from that in dermatitis. In those places where a rich cell proliferation has taken place, and in their vicinity still more, we find that the neighboring tissues of the vessels, *as well as of their walls*, are abundantly infiltrated with cells. The walls of the capillary vessels of the papillæ are thickened, have a shining and rigid appearance, and *enclose numerous nuclei, which project even into the lumen of the vessels.* The adventitia of

* Archives of the Academy of Sciences of Vienna, 1867.

the arteries and veins is three times its normal thickness, *in consequence of the* presence of numerous round, spindle-shaped and branched cells. The calibre of the cells is diminished, but the vessels are permeable. If the induration still increases, we find in its vicinity an abundant proliferation in the adventitia of the vessels, and subsequently the adjoining connective-tissue cells enlarge and proliferate and anastomose with those situated in the adventitia by means of their processes."

"The induration is explained, however," he further remarks, "neither by the number of cells nor by their peculiar properties, but by the fact that while in *dermatitis* we have a proliferation of cells, and also a serous exudation which infiltrates the tissues and fibres, in the induration of syphilis we have a dry anæmic tissue, resistant connective-tissue fibres, considerably thickened walls of vessels. The dryness of the induration, which produces the hardness and also the anæmia, is caused by the *proliferation in the walls of the vessels*, which makes it difficult for the serum to leave the vessels, and also diminishes their calibre. And this," he says, "explains why the syphilitic induration breaks down into a molecular mass, and why resorption takes place so slowly."

Now, in contrast with the indurated tissue associated with and characteristic of the initial lesion of syphilis, I wish to direct your attention to another patient, Case IV., who presents a sharply defined ulcer occupying the central portion of the fossæ glandis, encroaching upon the glans and also upon the reflexion of the prepuce. It is fully as large as a dime, and, as you see, something like a figure 8 in form. The history given by the patient is that a little over a month ago he had a suspicious connection, and within a few days—he is not quite certain, but not more than five—he observed "two small festers" (pustules), which soon discharged and grew until they formed a single sore. He has made repeated applications of "blue-stone" (cupri sulph.), and thought he was getting better, when, a few days since, his right groin began to be swollen and painful, and he has come to us for relief.

On pressing this ulcer between the thumb and finger it is found to be quite free from hardness, although the caustic treatment to which it has been subjected would be likely to develop more or less induration. The edges are abrupt, the floor is irregular and covered with a yellowish débris composed of pus and disorganizing tissue; the surrounding border is red and somewhat swollen, and also quite tender, as you can observe by the shrinking from our very careful manipulation. We have here, then, judging from the history and appearance and condition, a characteristic example of the contagious venereal ulcer, previously referred to as second among the contagious venereal disorders, and called chancroid. If there was still a doubt as to its nature, it is dispelled by the inflamed and swollen condition of the right groin. We recognize by gentle palpation a small abscess of one of the inguinal glands, a not uncommon result of the chancroidal action. Pus from the chancroid, gaining access by ulceration to the interior of a lymphatic vessel, passes at once into the gland in connection with it, and through its contagious and destructive property goes rapidly on to the production of a virulent abscess, the pus of which is contagious and destructive equally with that of the chancroid. The chief characteristic of the chancroid, you will observe, is its destructiveness. It begins as a pustule, resulting from necrosis of tissue, set up by contact of a molecule of chancroidal pus. Throughout its existence its secretion furnishes pus which, brought into contact with healthy tissue, sets up a destructive action of greater or less activity. It is simply, only and always destructive, and without the destructive property it cannot be chancroid. It is the antithesis of the initial lesion of syphilis, which in its inception is a process of growth instead of dissolution, and in which loss of tissue occurs not by any virulent agent, but by such an accumulation of new material as to embarrass and finally to arrest the processes of nutrition, and in this way result, in instances like that of Case III., in an open lesion. The microscopic examinations of Beisiadecki, which have been amply verified by Auspitz, Verson, etc., prove this almost beyond question,

LESSON III.

The Cell Accumulation of the Initial Lesion of Syphilis in Harmony with what is proved to occur in every Lesion during the Acute Stages of the Disease—Cell Proliferation, *in loco*, always Sufficient to Explain Satisfactorily the Cause and Condition of the Lesion—Gradual Progress of the Infected Cells through the Lymphatic System until the General Blood Current is Reached—Practical Denial of the Views of Instant Infection, with Corroborative Proofs—Incubation of Syphilis—Different Modes of Transference of Syphilis—Most frequent Locations of the Initial Lesion—Communication by Direct Contact through the Act of Kissing, through Surgical and Gynecological Operations, etc.—Communication of Syphilis through Mediate Contagion or through any Material which has been in Contact with the Secretion of any Lesion of Active Syphilis—Directions for the Prevention of such Accidents—Eight Cases Illustrative of this Mode of Acquiring Syphilis by Medical Men.

The significance of the induration in the initial lesion of syphilis as thus explained is most important, and will be found to be in harmony with and typical of each and every manifestation or lesion throughout the active or acute stages of the disease. The cell accumulation which has been demonstrated to constitute this induration has been found to occur in the lymphatic vessels in communication with it, not infrequently recognized, like knotted cords under the integument, running to the lymphatic glands into which they empty, which in turn become depots for the proliferative process, and enlarge in the manner shown in Case III. (see page 25), and are claimed and proven to be characteristic of the presence and advance of the syphilitic disease. The induration associated with the initial lesion of syphilis, then, is the result of a gradual invasion of the tissues, commencing at the point of inoculation or contact of the syphilitic principle, or so-called virus, with an open lesion of the integument, or mucous membrane. It is a most significant and important fact that, since the microscope has been applied to the investigation of syphilitic disease, no lesion or manifestation of it has failed to present evidences of cell proliferation, *in loco*, suf-

ficient in amount to explain, in a satisfactory way, the cause of the lesion. It has also in the same manner been demonstrated that this localized cell proliferation and accumulation occurs in a methodical way, progressing steadily from its point of beginning, or first contact with the syphilitic virus or principle, gradually invading the lymphatic vessels and glands, until it reaches the great lymph reservoir, the *receptaculum chyli*, through which it reaches the general blood-current by the subclavian veins.* All this, it will at once be seen, is in direct opposition to the views formerly, and to a great extent still, held, viz., that the virus of syphilis enters the blood at the instant of inoculation, and that thus "the entire organism is affected at once."† Such a claim is purely theoretical and unsupported by a single scientific proof, while the evidences of a gradual infection, through the lymphatic system, are not alone met in microscopical examinations by distinguished scientists, but are confirmed by the clinical observations of every careful observer; each succeeding lesion or manifestation from the initiation to the termination of the disease adding corroborative proofs, not only by its physical characteristics, but by the date of its appearance.

THE SO-CALLED INCUBATION OF SYPHILIS.

This is a term usually applied to the period which elapses from the date of inoculation to the appearance of the characteristic initial lesion, and may vary in different cases, according to different authorities, from one to seventy days, the usual time being from ten to twenty-five days. Strictly speaking, syphilis has no period of true incubation, inasmuch as the process of cell proliferation is undoubtedly established at the moment the virus (disease cell or germ) comes in contact with the germinal or white blood cell of the human organism.

* See Otis on the Physiology and Pathology of Syphilis. G. P. Putnam's Sons. New York, 1881.

† Billroth, Surgical Pathology. Am. ed., p. 386.

The immediate effect of such contact seems to be a rapid increase in the process of proliferation of such of the normal white blood cells as have become contamimated or degraded by the influence of the disease germs (virus) of syphilis. Through accumulation of this degraded product, the tissue (including the vessels of nutrition) at the point of initiation of this process, becomes densely packed, forming a neoplasm of greater or less extent. The process of degradation or infection is confined to the immediate locality of the inoculation, until the degraded cells have gained access to the interior of a lymphatic vessel. Through this channel the diseased cells are carried to the nearest lymphatic gland (the *gland of connection*, as it may be termed), and here are arrested, by the peculiar conformation of the gland structure, for a longer or shorter period (usually about six weeks), during which time there is no further evidence of constitutional infection.

This period of *apparent* rest is usually termed the *second* incubation of syphilis.

NOTE.—It is probable that the interval between the date of inoculation and appreciable gland enlargement is dependent upon the facility or difficulty with which the diseased cells gain access to the lymphatic vessel connecting the point of inoculation with the adjacent gland. Hence, at points where the distribution of lymphatic vessels is most liberal and most superficial we should expect to find the *shortest interval* between inoculation and gland implication. This view is supported by the clinical fact that, in cases when the shortest interval occurs, the initial lesion (in the male) is located at the frenum, or the anterior-inferior surface of the glans penis. From this point, chiefly, the superficial lymphatic vessels radiate, and are (according to Balaieff) "most *superficial*, rising, in this especial locality, until they lie just *underneath the epithelium*" (see Otis on the Physiology, Pathology, and Treatment of Syphilis (Putnam Sons, 1880), pages 12 and 13, where it is shown that, by direct introduction of the syphilitic element into the *interior* of a lymphatic vessel, diseased action, in the gland of connection, is inaugurated at once).

MODES OF TRANSFERENCE OF SYPHILIS FROM THE DISEASED TO THE HEALTHY.

The modes of transference of syphilis from the diseased to the healthy are three:

(1) By DIRECT CONTACT of the diseased surface with

an abrasion, or other breach of tissue, on a healthy person.

(2) By MEDIATE CONTAGION.

(3) By HEREDITARY TRANSMISSION.

Communication of syphilis by DIRECT CONTACT (as under the circumstances peculiar to the venereal act) is the most frequent mode of the acquirement of syphilis. In the female, initial lesions from this source are most common in the vicinity of the *ostium vaginæ;* especially so in the folds of mucous membrane about the *fourchette;* between the greater and lesser *labiæ;* under the sheath of the *clitoris;* upon, and even within, the *meatus urinarius.* They are also found to occur, not unfrequently, about the *anus;* they are rarely found on the *os uteri,* and still more rarely on the *vaginal rugæ.*

In the male, the most frequent sites are upon the *glans penis* and *prepuce,* occurring with especial frequency in the *sulci* by the side of the *frenum,* at the *meatus urinarius,* and in the *fossæ glandis,* and occasionally on the integument of the *penis.*

In both sexes the initial lesion is sometimes found upon either *lip,* in the angles of the *mouth,* or even within it, and also near, or within, the *anus;* all as a result of direct contagion. Communication of syphilis by direct contact, through the act of *kissing,* is an accident of occasional occurrence. There is also a danger that it may be transferred, through the act of nursing, from syphilitic infants to healthy wet nurses, or from syphilitic nurses to healthy infants. Relations between nurses and children should never be entered into without a careful consideration of this fact. In these cases, the inoculating secretion may be furnished, either by an *Initial Lesion,* or by one of the common manifestations of active syphilis, known as the *Mucous Patch.*

Initial lesions are also found in various other localities, as solutions of continuity, *at any point,* may become the accidental recipients of the syphilitic *contagium.* Usually, they are rare in proportion to their distance from the genitalia. Surgeons, accoucheurs, and gynecologists are especially exposed to the peril of an innocent inoculation of syphilis by direct contact. Within the circle

of my city acquaintance, at the present time, are three medical gentlemen who acquired syphilis through an initial lesion on the right forefinger. In another case, a surgeon, also an acquaintance, received the syphilitic inoculation in the end of his right forefinger, through accidental puncture, by a spicula of bone, while amputating the leg of a syphilitic subject.

INOCULATION OF SYPHILIS THROUGH MEDIATE CONTAGION.—Cells diseased by the syphilitic influence (or what is usually termed the syphilitic *virus*) may cling to substances with which they are brought into contact. All degraded animal cells, or disease germs, have the power of maintaining their vitality for some time after removal from the organism in which they have been developed. (Beale.) Any material, therefore, which has been in contact with the secretions of syphilitic lesions, or the blood of a syphilitic, during the active stage of syphilis, may prove the medium of communication of syphilis to a healthy person, provided, only, that the substance so contaminated is brought into contact with a *lesion*, however slight, of the skin or mucous membrane.

The most common source of the *contagium*, in cases of MEDIATE CONTAGION, is the *Mucous Patch*, a constitutional syphilitic lesion, frequent upon the mucous membrane of the lips, mouth, and faucial region, in persons passing through the active stages of syphilis. The *saliva* is thus impregnated with the syphilitic disease germs, and, through it, a variety of domestic utensils have been the known medium of syphilitic inoculation, by contact with abrasions upon the lips of healthy persons, without regard to age or sex. In the same way, pipes passed from syphilitic mouths, cigars from syphilitic cigar-makers, canes, pencils, and even sticks of candy, contaminated by syphilitic saliva, have effected a syphilitic inoculation. Within the last eighteen months I have met with four cases where there was undoubted proof of the acquirement of syphilis through mediate contagion. One, of a young lady, with the initial lesion on the lower lip, acquired from her lover's kiss. The second, a physician, with the initial lesion

just within the angle (on the right side) of the mouth, from a syphilitic friend's pipe. The third, in the same locality, appearing, characteristically, about three weeks after a morning spent in a dentist's chair. The fourth, a worthy merchant, with his initial lesion (well marked) on his lower lip, with mucous patches in his mouth, and an accompanying syphilitic iritis. In this latter case the only clue to the mode of acquirement of syphilis was the habit of passing among numerous clerks and occasionally transferring a lead pencil from their desks to his mouth.

Well-marked constitutional syphilis, with complete absence of any genital lesion, was present in each case cited.

The foregoing typical cases, illustrative of the modes through which syphilis may be contracted by *Mediate Contagion* (with the exception of the last), were seen in consultation with physicians from neighboring States. Such accidents, however, are of more likely occurrence in great cities, where moral restraint is least stringent and opportunity for acquiring venereal diseases most favorable. It becomes necessary, therefore, in connection with cases of obscure disease, simulating syphilis, to make a searching scrutiny of all incidents, conditions, and exposures which may, in the light of possible accidents, point to opportunity of syphilitic infection through mediate contagion. The third case cited is of especial value, as conveying a lesson on the necessity of scrupulous care of instruments used in operations about the mouth.

So simple a procedure as the depression of a patient's tongue with a spatula, in examinations of the mouth and throat, may easily become the means of carrying the syphilitic disease germ to an abraded surface in a healthy person.

In all cases, therefore, where the same instruments are in use for different persons, after thorough cleansing, their passage *through the flame of an alcohol lamp* should be systematically practised after every operation. The same procedure is equally indicated in regard to instruments used upon other mucous membranes,

as those lining the urethra, the bladder, the rectum, the eye. It is also essential in all instruments used in cutting operations at any point. Not the least important among the modes of conveying syphilis by mediate contagion is that by *vaccination.* Numerous well-authenticated cases of this disaster may be found recorded in any modern systematic work on syphilis. Inoculation of syphilis by vaccination may be effected either by an impure virus or an unclean knife. Use of the bovine virus, by means of a clean instrument, relieves this beneficent operation from the stigma of being considered a possible means of communicating syphilis.

Extract from the Independent Practitioner.

EIGHT CASES OF SYPHILIS OF THE FINGER IN MEDICAL MEN. REPORTED BY FESSENDEN N. OTIS, M.D.

Case I. W. N., M.D., æt. 26, was in good general health up to three weeks ago. In the latter part of September, 1881, he noticed a small, red papule on the superior surface of the forefinger, at the middle of the second phalanx. He had been for over a month on the venereal service of Charity Hospital. He had never noticed any previous abrasion at the point of appearance of the papule. He is not aware of having had any special exposure of this finger. He had been in the habit twice a week of making vaginal examinations of venereal patients. The papule was painless, had a pale red color and a slight boggy feel, but was without distinct induration. Thinking it might contain a splinter, an incision was made into it, but no splinter was found; no pus, only blood, escaped. This cut remained open and assumed the form of a small ulcer with sharply cut edges, $\frac{8}{16}$ of an inch in diameter and $\frac{1}{16}$ of an inch in depth, circular, with smooth, shiny, red floor. This exuded a secretion which accumulated, dried, and formed a scab which dropped off at the end of twenty-four hours, with an escape of 3 or 4 drops of seropurulent fluid. It would exude, dry, and scab over again. I examined it about the 10th of November, when exudation first commenced, and detected in connection with it an enlarged and somewhat tender gland in the axilla. Several days after I found an enlarged epitrochlear gland in the right arm. A deep red areola with a scaly border now surrounded the lesion. Patient's health was good up to three weeks ago (or six weeks after the discovery of the papule), when without apparent cause he began to suffer with headache and general malaise. Insomnia well marked; appetite pretty fair. He, however, kept about his work at the hospital; he had some febrile excitement; temperature about 100 in the evening. These symptoms all disappeared in about ten days, and he returned to his general health, and was feeling perfectly well, when on December 18, looking, as had for some time been his habit on retiring, he discovered on his body a distinct eruption which he described as papular in character.

Examination at the present time (about eleven weeks from the discov-

ery of the original lesion) shows a discrete eruption of papules both fine and coarse, scattered over the body, most prominent on the chest and arms, and pale red in color; also distinctly indurated glands in cervical, epitrochlear, and inguinal regions, characteristically enlarged, and one also in right axilla enlarged and tender. The throat is congested, a single scab is found in the hair. The patient, who had been desirous of waiting until the diagnosis of syphilis was absolutely certain, was now put upon a systematic treatment for that disease.

Case II. 1878, S. S. B.; presented with a papule of the middle finger of right hand, about the size of a silver three-cent piece, just over the second joint, elevated and non-suppurating. It appeared as a red spot about two weeks previous, and has gradually become elevated, and with no distinct induration. About six days ago a dry scale appeared in the centre and a molecular necrosis started from that joint. He has poulticed it for the last week. There is no local tenderness but some pain in the arm stretching up from the lesion as far as the elbow. A single enlarged gland is found in the corresponding axilla about the size of a filbert.

The patient was advised that the lesion was probably syphilitic, and instructed to wait for signs at other points. In this case there was no positive induration about the lesion, only a boggy feel. The patient has no idea of any date of exposure. He attended a confinement on April 6, but had no suspicion of syphilis in the case.

I lost sight of this patient until July, 1881, when I was informed by Dr. E. F. Ward, of New York, that he subsequently had roseola and a papular eruption developed, and that he was at this time suffering from hemiplegia, which had come on suddenly.

Case III. In latter part of December, 1871, the patient, a physician, noticed a red spot upon the dorsal surface of the right index finger, near the base of the second phalanx. The spot when noticed was about an inch in diameter, and continued slowly to increase in circumference and to become raised, until within three weeks it reached nearly the size of a three-cent piece and looked precisely like a vaccine vesicle without a central depression. It soon became incrusted, but by the application of poultices the crust was removed, leaving a well-rounded ulcer about one-third of an inch in diameter, excavated, clean, without discharge, the edges raised and all of a deep red color and sluggish in appearance, neither inclining to heal itself nor to yield to treatment. The base was boggy and no induration whatever could be discovered, although searched for by a distinguished surgeon in this city, and by him the lesion was confidently pronounced to be at most a *simple* chancre. Another surgeon familiar with syphilis was equally confident of its simple character. A third who saw it while a small papule regarded it with suspicion, and advised the patient to consult some surgeon who gave especial attention to such cases. The patient then came to me. My opinion was strongly in favor of a syphilitic origin for the lesion, but the patient desired to wait for further proof before commencing constitutional treatment. The ulcer showed no sign of improvement. The extended finger was bandaged to a splint, rendering the point immovable, and allowed to remain so two weeks, but without improvement. I then advised the application of iodoform powder. Within forty-eight hours a decidedly favorable change had taken place, and within ten days the ulcer was perfectly healed. Once or twice afterward the skin was accidentally broken, but

on reapplying the iodoform it healed kindly. From the first appearance of the spot till the healing of the ulcer no pain or discomfort was felt. After some four months—that is to say, in the following April—the doctor called to inquire about an eruption which had made its appearance a week or two previously upon his breast and arm chiefly, sparsely on his face and head, which was quite bald. The eruption was of a dull red color, slightly elevated, and several papules were encircled by a line of exfoliating epidermis. They were free from itching, and were discovered by the accident of their appearance on the face and scalp, as they caused no sensation and were not preceded by any fever, headache, or other constitutional disturbance. Examination showed distinct gland enlargements in the cervical, inguinal, and epitrochlear regions. He was then for the first time put on a regular mercurial course, viz., one pill of mass. Hydrarg., 2 gr. combined with 1 gr. of the exsiccated sulphate of iron, three times a day. At about this time this patient's wife began to complain of a profuse vaginal discharge, having been previously in good health, and free from any leucorrhœal trouble. About three months subsequent to this, a characteristic papular eruption appeared on her face and body, general gland enlargements distinct and prominent in groin, neck, and epitrochlear regions. She too was then put on a systematic mercurial course similar to that of her husband. Both were kept under treatment for about a year and a half, when no signs of syphilitic trouble having appeared for several months, it was discontinued. To-day, Feb. 21, 1882, the doctor reporting by my request, states that now nearly ten years from the disappearance of the disease, and the cessation of all treatment, both he and his wife have been and are now free from any evidence of syphilis.

Two other cases of the occurrence of syphilis in physicians where the initial lesion was situated on the right forefinger have been reported to me during the present winter, and in addition to these I am cognizant of three other cases in New York City, two gynecologists and one distinguished surgeon, who have had syphilis through an initial lesion of the finger.

The first point of interest in considering the foregoing cases is the danger to which any physician who treats diseases of females or attends females during the parturient condition is more or less exposed, and the necessity of using extraordinary precautions in examining or attending every case to which a suspicion of syphilis could possibly attach, and habitually to protect by previous application of elastic collodion any cracks or abrasions about the nails or joints of the fingers, especially of the right forefinger, and to use a lotion of carbolic acid (1 to 100) or of the liquor potassa permanganatis, 1 part to 40 of water, as a habit after all digital examinations of the female genital apparatus.

It may be safely asserted that a pre-existent abrasion or fracture of the skin or mucous membrane is absolutely essential to the acquirement of syphilis; and that in any case when syphilis has been acquired without the recognition of a local initial lesion, it has been present, but overlooked. Destruction of tissue is not essential to the perfect initial lesion of syphilis.

Healing of an abrasion may take place after an inoculation, just as promptly and as perfectly as if no inoculation had taken place, and the point of induration following may be so small and insensitive that it would easily escape observation.

In case of the wife of physician (Case III.), the initial lesion was not discovered. Her eruption was only preceded by a profuse vaginal discharge. There was never any recognized open lesion on the penis of her husband. It might be said of her that the inoculation had taken place through the influence of the semen. Mireir, of Marseilles, has made repeated experiments of inoculating the semen of a person in the active stage of syphilis, upon healthy persons, but without effect. It is more probable—in fact, almost a certainty—that the disease in this case was acquired from a syphilitic papule, of which there were at one time several on the penis. Abrasion occurring during coition coming in contact with an abrasion of the os or vaginal mucous membrane, might there establish the initial lesion, resulting in the vaginal discharge, which preceded the syphilitic eruption, which was the first recognized evidence of syphilis in the doctor's wife.

The second point of interest is in the uniform and characteristic physical appearances, presented in the initial lesion of syphilis of the finger, coming on always as a papule, coming soon to be of a deep red color, and presenting a superficial abrasion, becoming circular and deeper by a slow molecular necrosis; not by ulceration with formation of pus. The secretion thin and serous, and drying into a scab which is soon displaced by the fluid accumulating underneath.

The entire absence of induration; in its place a slight, flat, juicy-looking, boggy swelling or elevation about like a small peppermint in size and thickness—early appearance of an enlarged and somewhat tender gland in the axilla of the corresponding side.

I would like to call attention to an interesting fact in regard to the efficacy of remedial measures, viz., that in five of the above-mentioned cases a careful systematic mercurial treatment was pursued during a period varying from one and a half to two and a half years. Eight healthy children have been born, and both they and the parents have continued free from any evidence of syphilis up to this date.

LESSON IV.

Syphilis by Hereditary Transmission—Differences of Opinion in Regard to the Transmission of Syphilis through the Spermatazoids—Evidence Furnished by the Cell Theory of Syphilis showing the Improbability of Infection in this Manner—The Onus of Hereditary Transmission Thrown Upon the Mother—The Previous Acquirement of Syphilis by the Mother Necessary to the Infection of the Fœtus or an Embryo—Syphilis Transmitted only during the Active Period of the Disease; from One to Three Years—Reasons for this Statement—Cases Reported Claiming a Longer Period not well Substantiated—Without a Contagium there is no Syphilis—Errors Due to Acceptance of Imperfect Evidence—Illustrative Case.

SYPHILIS BY HEREDITARY TRANSMISSION.

Heretofore, in considering the modes of transmission of syphilis, we have accepted the probable fact that this disease is communicated by contact of a diseased with a healthy human germinal cell. We have now to consider how diseased cells in the adult, male or female, suffering with syphilis, may be brought in contact with those of the embryo, or of the fœtal organism. It is claimed that the fœtus, through the natural processes of growth and development, may be built up from a syphilitic seminal animalculæ (*spermatozoids*) furnished by the male, in conjunction with an ovum furnished by a healthy, or even by a syphilitic, female, and may thus come to comparative maturity. Much clinical material has been adduced to prove this. On the other hand it is claimed, with equal proof of a similar character, that this is *never* the case, but that the syphilitic influence is *always* furnished by the *female;* presumedly communicated to the embryo or fœtus through contact with the nutritive elements furnished by a mother in whose organism the degraded cells or disease germs of syphilis are present.

Like most important questions in which syphilis is involved, a solution of the foregoing, based on clinical evidence alone, is most difficult. The best proof of this

statement is, that, on either side of all such questions, the most experienced and competent observers are ranged in nearly equal force. To constitute *Hereditary* syphilis either the embryo or the fœtus must be infected. All infection during or subsequent to birth must be classed with one or other of the modes of transmission of syphilis previously considered.

If we accept the syphilitic influence to be, as previously claimed, a degraded formative cell, we may also accept, as a legitimate sequence, that, through this degradation, there is a loss of formative power—an inability to develop into any useful tissue.

The contagion of syphilis, as claimed, is always effected by contact of a *degraded* with a *healthy* germinal cell. In a strict sense, therefore, it is always localized. Cells thus degraded are practically emasculated, their capacity for usefulness is lost. Of necessity, then, growth of living tissue occurring, it must take place through the normal cell elements, that is, through those which have escaped this degradation. It is thus plain that only a portion of the germinal material of a living organism can be affected by syphilis. Sufficient germinal material to carry on the processes of life and growth must escape, or growth would be at once arrested and life would cease. The possibility of involving in the syphilitic dyscrasia so infinitesimal a fraction of a spermatic organism as would still enable it, in conjunction with the ovum, to play an efficient part in the growth and development of the human embryo, is scarcely conceivable. Especially difficult shall we find it to accept such a view when we consider that, once in connection with the ovum the syphilitic influence would be rapidly imparted to the germinal elements furnished by *it*. We may, then, consistently, throw the great improbability of continued growth (or indeed of any growth), under such an unfavorable influence, into the scale with the clinical claims of those who *deny the possibility* of the embryo or fœtus being infected with syphilis by the *spermatozoids*. With this view of the subject, the onus of hereditary transmission of syphilis is necessarily thrown upon the MOTHER, under all, even under appar-

ently contradictory clinical circumstances. Hence, when an embryo or fœtus is the subject of syphilitic infection, we may conclude that it is the result of *contact* of *its* normal formative or germinal cells, with cells degraded through the syphilitic influence, furnished by the nutritive fluids of *the mother;* either directly through the circulation, or through degraded cells from her organism, gaining access to that of the embryo or fœtus by their amœboid power.

Hence, to make the syphilitic infection of an embryo or a fœtus possible, the organism of the mother must *first* be infected with syphilis. The previous acquirement of syphilis *by the mother* from the father, or through the secretion of a syphilitic lesion, or from the blood of one suffering from active syphilis (by direct or mediate contagion), is necessary to the syphilitic infection of a fœtus or an embryo.

It is only during the active stages of syphilis (primary and secondary periods) that the contagious element of the different lesions of syphilis and of the blood is present. Therefore hereditary transmission of this disease is only possible during this time (*usually* from one to three years). The sequelæ of syphilis (tertiary and quaternary periods) contain no *discovered* elements of contagion. The most careful microscopical examinations have failed to demonstrate in the products of *Tertiary Syphilis* (various forms of *gummata*, including eruptions) anything besides the débris of normal germinal elements. Repeated inoculations of these products have failed to disclose any contagious principle. *Without contagium there is no syphilis.* Hence we may reasonably conclude that hereditary syphilis is only acquired during the active periods of the disease, and that in order to effect syphilitic contamination of the embryo or fœtus the female organism must first be infected.

With this view of the maternal influence in syphilitic infection of the fœtus or embryo, cases reported, claiming such infection to have occurred through the sole agency of the father suffering with syphilis (the mother, up to this time, free from the disease), must be classed either among those instances where the characteristic

features of the disease are absent, or where they are so imperfectly developed as to have escaped detection.

The difficulty of instituting a thorough examination, under circumstances where it is necessary to avoid suspicion of its object, the want of tact, care, and experience in detecting obscure evidences of this disease, have, without doubt, too often led to the acceptance of syphilis acquired through the paternal influence, where, under other conditions and in other hands, infection of the mother would have been recognized.

The following case will serve to indicate some of the various ways in which syphilis may be overlooked, and further, to show important variations in time and manner of development of syphilis from a similar source. Some three months since, Dr. W., a naval surgeon, consulted me in regard to a small nodule on the *frenum preputialis*. An abrasion was discovered, after a suspicious exposure, some four weeks previous. This healed at once, as if simple, and nothing further was noticed, until the nodule, about the size of a kernel of pearl-barley, was observed. Its surface was abraded, probably during a recent connection. Its scanty secretion was found under the microscope to consist chiefly of laminated epithelial scales. On account of the obesity of the patient, a satisfactory examination of the inguinal glands was impracticable. No enlargement could be felt. I advised excision of the neoplasm. This was done at once, and healing by first intention was complete in forty-eight hours.

A few days ago (December 15th) the doctor called to say that the operation had evidently been efficacious in saving him from a general syphilitic infection; that he had positive proof of having, himself, communicated syphilis to a young lady the night previous to the excision. In her case an initial lesion followed, in due time after the connection, accompanied by inguinal gland enlargement and succeeded by general gland hyperplasia. She now had, in addition, a characteristic papular syphilide, and yet he claimed to be absolutely free from the least evidence of syphilis.

A cursory examination appeared to confirm the doc-

tor's statement. This, however, appeared so improbable, that I at once instituted a more thorough examination, which resulted in the discovery, under a deep layer of adipose, of small but characteristic gland enlargements in connection with the initial lesion. The cicatrix on its former site was slightly indurated. Glands at a distance—epitrochlean and post-cervical regions—perceptibly enlarged. Slight but positive congestion of the fauces, and a narrow but characteristic *mucous patch* hidden behind the anterior pillar on either side. These proofs of syphilitic infection had escaped the anxious search and skill of the patient, also of a professional associate, who was a competent and experienced general surgeon.

Through evidence furnished by clinical cases, it has been claimed that syphilis once acquired is never fully eliminated from the system, but that it exists as a possible infecting agent, after the stages which furnish *known* contagious elements are past. During more than twenty years of observation and especial interest in regard to this point I had been unable to find a single undoubted example, where a person in the known *Tertiary* period of syphilis (and so demonstrated by the absence of the glandular enlargements characteristic of the active stages of the disease) had been the proven carrier of syphilis to a healthy person. I came to believe fully, in regard to persons who had passed successfully through the so-called *primary* and *secondary* periods, and so proven by complete absence of *primary* and *secondary hyperplasias* that treatment was no longer necessary, that such persons might, if desirable, even be permitted to marry, with the assurance that, through them, transmission of syphilis to wife or child was impossible. This doctrine I had taught and practised for a very long period, when a case came under my observation which, but for a mere chance, had unsettled me on this vital point forever. The important lesson which it enforced, namely, *to distrust the value of purely clinical evidence*, may be profitably transmitted by the brief extract from my note-book which follows:

Mr. Q., a young lawyer, twenty-five years of age, had

acquired a well-marked initial lesion of syphilis on the *glans penis*. His gland enlargements in the epitrochlean, cervical, and post-cervical regions were characteristic—his roseola escaped observation, but a classical papular syphilide appeared about the fourth month, and continued for several weeks. Ulcerations of the tonsils and *mucous patches* on the soft palate and inner surface of the cheeks followed, but yielded satisfactorily to treatment.

The gentle but persistent use of mercury internally and by inunction had been pursued from the first and through a period of twelve months, occasionally combined with the iodide of potassium. At this time all glandular enlargements had disappeared, except a small one, the size of a pea, in the right *post-cervical* region. Treatment suspended for three months, when a thin diphtheric patch appeared on the right side of the tongue, with slight induration.* Treatment resumed, mercury, with iodide of potash. Patch on the tongue faded slowly out in about a month, but was replaced by another, on the opposite side, which continued about the same time, *cervical gland* not perceptibly changed. A series of mercurial baths, and a course of Zittman's decoction, covering nearly three months longer: gland now scarcely felt. Patient very anxious to marry, but was advised to wait a full year. The next six months passed without any new development. *Gland* very small, but still recognizable, when the patient, now in good general health, married on his own responsibility.

One year after marriage the wife gave birth to a fine, healthy-looking boy. During the fifth month of lactation, the wife had scrofulous abscess of the neck (inherited tendency), which alarmed the husband (fearing syphilis) exceedingly. She recovered under simple treatment, and relief from nursing. Child healthy up

* I have known patches similar in appearance to result, in certain cases, *from the use of the iodide of potassium*, to pass off when the remedy was discontinued, and again to return when it was resumed. I have also seen patches of the same appearance in the mouths of persons habituated to the use of tobacco, where no history of syphilis could be ascertained.

to third year, when it died from tubercular meningitis, following scarlet fever. No salient evidences of syphilitic taint. Fear that his old trouble had been in some way connected with his child's death made the husband very unhappy, and he frequently expressed the fear that he had contaminated or might yet contaminate his wife, to whom he was tenderly attached.

In November, 1870, Mr. Q. complained of some swelling and soreness over the right tibia. A gummy tumor was found presenting, the size of half a horse chestnut. The nature of it explained, he was put on a mild mercurial, with large doses of the iodide of potassium, which resulted in its entire disappearance within a month. Both husband and wife continued healthy up to October, 1871, when one morning he called, in great distress, to say that his wife had some sores in her mouth, resembling those of his early syphilitic trouble. I did not hesitate to assure him that this was simply impossible; that his disease, if any trace of it remained, was beyond the fear of contagion. The spotless character and chaste deportment of his wife made me sure there could be no other danger, and I comforted him accordingly.

What was my surprise, on seeing her, to find not only several characteristic mucous patches in her mouth, but, on further examination, to discover four or five mucous tubercles—one on the inner border of the thighs, and the others on the right labium. I was forced to acknowledge to the unhappy husband that he was right, and we could only conclude, contrary to all my assurance and belief, that his old taint had been the cause.

Here was a dilemma. I could not suspect the wife. I could not accept the contagion from a source which stultified all my conclusions, teaching, and experience. I was wretched. The husband was wretched, but resigned, desiring only, if the knowledge of it was not necessary to her recovery, that I should keep the secret from his wife. *She was serene.* After a few weeks' medication, and not unfrequent painful applications of caustic to the mucous tubercles, I thought she was *too*

serene. I asked and received permission from the husband to tell his wife what her trouble was, if I thought it best. My manner to her was changed; from being sympathetic and considerate, it became brusque and reserved. An explanation was finally demanded. I evaded the issue. After a little dexterous fencing, the source of her troubles was flatly claimed. Ignorance of my meaning was feigned.

I explained the only possible causes of her disease, and said she had been married too long to suspect her husband. She promptly replied that he was "as pure as the sun." I then told her if she would give me her confidence, I would protect her—if not, would lay the matter before her husband (who was not supposed to be aware of the nature of the disease). Then came tears — reproaches — and finally, in a tempest of womanly indignation, she bade me leave, *forever.* I left, disheartened and in disgrace; but, before I was well on my way downstairs, I was recalled, and amid tears and sobs she confessed. A yachting excursion; an unexpected night at sea; exposure with an old lover: and all this about three months before. A letter was subsequently received from him full of regret that he had discovered himself syphilitic, and inquiring if he had been so unfortunate as to have communicated the disease to her.

The subsequent progress of this instructive case was not peculiar. The lady made an apparently complete recovery in about a year. After another year she again became pregnant—was delivered of a healthy child, now living—but died of puerperal fever the third week after her confinement.

In carefully reviewing this history it will be observed that while it is seen to be no exception to the rule that *tertiary lesions* are not contagious, it will show how easily they may achieve the credit due to the *active* manifestations of syphilis.

LESSON V.

Early Differential Diagnosis—The Earliest Recognizable Evidence of Syphilis in Local Cell Accumulation, and Progressing until Characteristic Nutritive Disturbances Occur—Neither Inflammation nor Ulceration Essential Features in the Results of Syphilitic Inoculation—Lesions of whatever Kind may Receive a Syphilitic Inoculation and Heal as Quickly and Perfectly as if no such Inoculation had Occurred—Immediate Decision in such Cases impossible—Delay until the longest Interval of Known Latency between Exposure and Development of Syphilis has Occurred necessary to a Positive Opinion in Cases of Doubt—Induration of the Initial Lesion Non-inflammatory—Inflammatory Induration Yields to Local Treatment which renders Specific Induration more Permanent—Physical Characteristics of Specific Induration—Value of "Confrontation" in Cases of Doubt—Cases Illustrative of Danger of Mistaken Diagnosis.

EARLY DIFFERENTIAL DIAGNOSIS.

The characteristic, and only constant, feature of all lesions, during the active stages of syphilis, is shown by microscopic examination to consist in a localized cell accumulation.

Consideration of the nature and behavior of this material will afford intelligent aid, in a differential diagnosis, between the initial lesion of syphilis, in its early period, and solutions of continuity from other causes. As far as shown, syphilis is primarily a process of cell growth and accumulation, so rapid that it interferes with healthy *tissue* growth, by obstructing the processes of nutrition and development. Not of necessity interfering to the extent of causing death of tissue, but of impairing its vitality, and thus causing it to break down more rapidly under influences which favor solutions of continuity. Hence we have presenting, as *characteristic* initial lesions of syphilis, either a neoplasm, dense, insensitive, and covered with unbroken and apparently normal cuticle or mucous membrane, or, from the causes above mentioned, some one of the various characteristic *solutions of continuity* associated with the initial lesion of syphilis.

In addition to the foregoing *characteristic* lesions, we may also find early local disturbance, in various forms and from various causes, associated with the beginnings of syphilitic cell accumulation, but presenting no features *characteristic* of syphilitic inoculation.

The known fact, however, that syphilitic infection not unfrequently follows a wound of inoculation, which heals promptly, and with no subsequent solution of continuity, is sufficient to prove that *neither* INFLAMMATION *nor* ULCERATION *are essential features in the results of a syphilitic inoculation.*

Thus, wounds, abrasions, broken vesicles, pustules, or ulcers *may* receive a syphilitic inoculation, and progress or heal as if no such inoculation had taken place.

It is then evident that no *positive* differential diagnosis can be made *at once* between lesions which *will* be followed by syphilitic infection and those which *will not.* A positive decision cannot be rendered until after such *interval,* from latest exposure, as may be required to develop some characteristic cell accumulation, either on the site of the lesion or in the adjacent lymphatic channels and glands.

This *interval* is recognized by all authorities as a clinical fact, and is characterized as "*The Period of Incubation of Syphilis.*"

The term was invented in accordance with a belief (formerly prevalent) that the *virus* of syphilis was a mysterious impalpable influence. That this, having entered the system at a given point, instantly permeated the fluids and solids of the entire organism. It then accumulated by "a kind of germination" until the point of "*saturation,*" or extreme limit of tolerance, was reached. This event was announced by a peculiar and characteristic action, at the point of entrance of the virus, which was termed the *Chancre.*

It is plain, however, that such a view of syphilitic infection can have no support, if we accept the view of a cell degradation, and a systematic syphilitic infection, in accordance with known histological, physiological, and pathological laws.

It is then to the local conditions, at the point of inocu-

lation, that we must look for the earliest evidences of syphilitic action. This is afforded, at first, through the microscope, by discovery of a densely packed *non-inflammatory* cell accumulation which steadily increases until it is appreciable to the ordinary touch. The same cell accumulation is also seen to occur in the lymphatic vessels connecting the initial lesion with the adjacent lymphatic glands. These vessels are not unfrequently found obstructed and indurated, and, like knotted cords, the size of a crow's quill or larger, often easily traceable to their gland termination. The associated blood-vessels are never narrowed or interrupted from this cause.*

The local induration of a suspected lesion, however, is not *positive* evidence of syphilitic action. Cell accumulation sufficient in degree to produce well-pronounced induration may result from *irritation* of a *simple* lesion. Thus, an herpetic vesicle, or pustule, even a simple abrasion, through friction from clothes, or from applications of caustics or astringents, may become indurated sufficiently to raise grave suspicions of syphilis.

Induration in such cases is always the result of *inflammatory* action.

The induration of *syphilis* is essentially *non-inflammatory.* The differential diagnosis is aided by means used to combat the inflammatory condition. Under the influence of rest and local sedatives the *incidental* induration is promptly dissipated; *in the initial lesion of syphilis* the induration is made more salient. Sometimes, though rarely, the induration is quite obscured by a slight localized serous effusion, which gives it a bluish appearance. This I have observed in several cases where the lesion was on a finger. The same condition quite frequently succeeds well-marked indurations near the *fossa glandis*, and is so persistent as to become a valuable diagnostic mark.

The induration may be said to be *characteristic* when

* The only recognizable cell accumulation in syphilis is confined to the lymphatic system. If, during the period of so-called incubation, the syphilitic influence has found access to the general circulation, no evidence of it has ever been discovered in the condition of blood-vessels, or of the blood, or in the conditions or sensations of the person so affected.

insensitive, dense, and resistant, like cartilage. If pressed between the thumb and finger it becomes exsanguinated, and like in appearance to the tarsal cartilage, when the eyelid is turned back.

Even this most positive evidence of syphilis cannot be accepted as conclusive. The induration of a commencing *epithelioma* simulates it very perfectly, and, if an open lesion, its secretion under the microscope presents appearances almost identical. In summing up the whole matter, we are forced to confess that a final decision in any given case is not warranted, until some other evidence is present besides the appearance and character of the *local* lesion.

In all cases, where possible, *the person from whom syphilis may have been acquired* should be carefully examined.

In making such examination, search not only for the initial lesion, but for each of the possible *secondary* manifestations. Even when such are found, it must be borne in mind that *a breach of surface on the person exposed* is essential to the acquirement of syphilis, and that this surface must be brought into CONTACT with the syphilitic secretion, either *directly* or *mediately*. So that while the presumptive evidence furnished by *confrontation* is often strong, it is not *necessarily* conclusive.

The following cases will serve to illustrate the importance of caution in arriving at conclusions in regard to the true nature of venereal lesions:

Case I. Mr. T., aged twenty-three, on the fourteenth day after his first and only connection, noticed a slight urethral discharge. Under the microscope this was found to be distinctly purulent. No pain on urination. Meatoscope showed the mucous lining of the urethra deeply congested for half an inch. Beyond this there was no purulent secretion; appearances normal. The difficulty was, evidently, not *gonorrhœal.* A *syphilitic inoculation* was suspected. Examination of the woman with whom he had connection *showed her to be passing through the active stages of syphilis.* No initial lesion was found; but the inguinal, epitrochlean, and cervical glands were characteristically enlarged. Several mucous

tubercles were discovered within the vulva; one in the *cervical sulcus*, and three on the *os tincæ*. Besides these there was a double row around the *anus*, eroded and secreting pus freely. In the presence of such evidences of syphilis, it seemed impossible that the young man could have escaped infection. The urethral discharge was probably caused by a syphilitic inoculation which had not yet produced a well-defined initial lesion. Inguinal glands of both sides slightly enlarged. Treatment for syphilis deferred (much against the patient's wish) until evidence of syphilis should become more positive. *The urethral discharge gradually declined and disappeared entirely in about a month.* Up to the present time (four years from date of exposure) patient has not had the slightest evidence of syphilitic trouble.

Case II. Mr. H., aged thirty, had a suspicious connection in May last. On the third day following he noticed several small pimples on his prepuce. Fearing venereal disease, he consulted his family physician, who at once pronounced the trouble a simple *herpes*. A mild lotion was recommended. Under its use all evidences of disease disappeared within a few days, and the patient was assured, in the most positive manner, that he was free from disease. June 10th, four weeks after the suspicious connection (and more than two after he had been pronounced free from disease), the patient was brought to me by his physician for an opinion in regard to a small, hard, eroded nodule on the former site of the *herpes*. Inguinal glands, on corresponding (right) side, characteristically enlarged. My belief that the nodule was an initial lesion of syphilis was strongly expressed, and the gentleman was put upon a mercurial course. A month later he called, presenting a well-marked roseola, with the usual secondary gland enlargements. His wife, who accompanied him, had an indurated initial lesion on the lower border of the meatus urinarius and well-marked inguinal enlargement.

Case III. Mr. W. V. No unusual trouble until two and one half months ago, when ten days after a suspicious connection he noticed a small sore on the right side of the penis. He consulted a surgeon, by whom

he was informed that he had a "*soft chancre;*" that he would quickly destroy it by application of nitric acid, and further, that *there need be no fear of subsequent trouble.* The cauterization was made, was repeated several times, at intervals of three or four days; healing finally taking place in about three weeks. Patient had connection with his wife the night previous to receiving the surgeon's opinion that he had a *chancroid;* no connection since.

This gentleman called upon me to ascertain the cause of a papulo-pustular eruption which was confined to the face and neck. I at once recognized it as syphilitic; examined the cicatrix of the so-called *chancroid,* and found it distinctly indurated. Gland enlargements of elbow and neck, all well pronounced and characteristic.

In answer to an anxious inquiry as to the possible infection of the wife, I was obliged to admit the possibility of such a calamity. He assured me that she had been, and was then, perfectly well in every respect—"*except that she had some little swellings in the right groin; not the least pain.*" An examination of the lady on the following day disclosed characteristic gland enlargements, not only in the groin, but in the arm and neck. No search was made for the initial lesion. She was put upon constitutional treatment for "*a form of leucocythemia,*" and remained in blissful ignorance as to the nature of her own and her husband's trouble.

LESSON VI.

Progress of the Syphilitic Infection—Course of the Disease beyond the Point of Inoculation—Infecting Cells Following the Course of the Lymph Vessels Carried by the Lymph Current to the Lymphatic Glands—Detention in the Glands from Mechanical Causes—No Evidence yet of Constitutional Disease—Recent Painless Gland Enlargements Strong Presumptive Evidence of Syphilitic Infection—Final Passage of the Diseased Cells or Germs into the Receptaculum Chyli, and from thence into the General Blood Current—The Period Intervening between the Inoculation and the Entrance of the Disease Germs into the General Circulation termed *the Initiatory Period of Syphilis.*

PROGRESS OF THE SYPHILITIC INFECTION.

The term CONTAGION has been used to designate the act by which, through cell contact, the syphilitic influence is conveyed from a diseased to a healthy person.

By means of the influence thus communicated, proliferation and accumulation of degraded cells, at the point of original contact (or inoculation), are claimed to result in the establishment of the initial lesion of syphilis, or *chancre*, in its various forms.

The course of the disease beyond this point is indicated, *à priori*, by the known fact* that all integumentary and cellular tissue are pervaded by lymph spaces and channels, which lead more or less directly into lymphatic vessels, and that the lymph current is constantly flowing *from* the tissues *toward* the lymphatic vessels and the glands in which they terminate.

Therefore a degraded germinal cell (syphilitic) introduced into the tissues (as by an inoculation), unless carried directly into the interior of a blood-vessel, must (itself, or its vitiated descendants) of necessity sooner or later be carried along by the lymph current to and

* Stricker's Human and Comparative Histology, Sydenham ed., vol. i, pp. 307 et seq.

into the gland of connection.* All clinical observations confirm this view: first, in the discovery of indurated lymphatic vessels leading from the point of inoculation to the gland in connection; second, by the subsequent enlargement and induration of such glands; third, their acceptance as a necessary sequence of the inoculation, and as positive proof of the nature of the disease.

The process through which the syphilitic influence thus gradually advances and finally invades the general system is termed the process of SYPHILITIC INFECTION.

The progress of the *syphilitic infection*, from the date of its *genesis* at the point of inoculation to its characteristic appearance in the glands nearest the point of inoculation (the glands of connection), varies in different persons, from causes not thoroughly settled, but which are indicated in note on page 96.

The degraded cell elements, then, effecting an entrance into the substance of the lymphatic gland, are here detained by the peculiarities of the gland structure, and perhaps by other inhibitory influences, for a period varying, in different instances, from twenty to sixty days. This period is recognized by all clinical observers, and has been described as the second incubation of syphilis. It is certain, however, that no syphilitic influence has yet been discovered in the general blood current during this period, and there is sufficient reason to suppose that the diseased elements are confined to the glands of connection, and those intervening more deeply between these and the thoracic duct.†

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* "The wandering red blood globules mostly again return into the circulation through the lymphatics. The wandering white blood corpuscles probably return into the circulation in the same way." — Wagner's Manual of General Pathology, Am. ed., p. 151.

† A similar inhibitory influence, exerted by the lymphatic glands in cancerous diseases, is cited by Virchow, in his Cellular Pathology, Am. ed., p. 221, with the following explanation: "We can account for this by no other supposition than that the gland collects the hurtful ingredients absorbed from the breast, and thereby for a time affords protection to the body."

It has been suggested that if the disease were really so localized, prompt *enucleation* of the initial lesion and of the affected glands might prevent general infection. It must be remembered that the infective cells, each of which is potent to act as a starting-point for systemic infec

The glands of connection become gradually enlarged, apparently through the proliferation and accumulation of cells in their interior.

When the initial lesion is located upon the genital apparatus, on the glands or on the body of the penis in the male, or on the labiæ or within the vulva in the female, the lymphatic glands of the groin become enlarged, so that, as a rule, several may be distinctly recognized by the touch, varying from the size of a small pea to that of a large bean. Sometimes these enlargements are apparently confined to the side corresponding with the initial lesion—sometimes to the opposite side; usually, however, the glands of both sides are more or less enlarged. Hard, nearly or quite painless, and movable, their *gradual accession within two or three weeks after a suspicious venereal exposure* is strongly indicative of syphilitic origin, without regard to the character of the *local lesion.* If this is present and indurated, the syphilitic character of the trouble is no longer doubtful. It must, however, be borne in mind that glands enlarged through the influence of scrofula cannot be with certainty distinguished from those of syphilitic origin.

They are found in the same locations, and, though usually less positively indurated, are still sufficiently so to prevent certain diagnosis. When the initial lesion is on the lips or in the mouth, the submaxillary gland is affected. Wherever situated, it is always the *glands of*

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tion, are not only present in untold numbers at the point of inoculation, but that (as shown by Beisiadecki's microscopic researches) the walls of the intervening lymphatic vessels are lined if not packed with them. Hence any proposed surgical extirpation of the disease must imply the entire removal of all the lymphatic connections of the initial lesion and the glands of connection. A procedure not only without sufficient promise of benefit at this stage of the infection, but even at the earliest date after inoculation, the necessary ignorance as to the degree of implication of the lymph spaces and vessels in the vicinity of the inoculation would in all probability render all such means of preventing the spread of the infective processes of uncertain value.

Early excision of the initial lesion may, however, be found to modify the intensity of the subsequent general infection. My own experience in twelve cases of excision during the past eight years would warrant this inference.

connection (*i.e.*, those nearest to the seat of inoculation) which are involved. Such enlargements are called syphilitic *buboes.*

The complete freedom from true inflammatory action which has been shown to characterize the induration of the initial lesion of syphilis, and the lymphatic vessels in connection with it, is equally characteristic of the enlargement and induration of the associated lymphatic glands. When attaining sufficient size to interfere with freedom of motion of a part, or where from any cause they are subjected to undue pressure, a degree of tenderness may result. From the same cause inflammation and even suppuration may occur in highly scrofulous subjects. Such accidents, however, are exceptional, and do not materially lessen the diagnostic value which attaches to *recent and painless* enlargement of lymphatic glands.

The progress of the syphilitic infection, which has been steady and persistent from the moment of inoculation to the engagement of the nearest lymphatic glands, appears now to be arrested. Gradual increase in their size and density alone indicates the activity of the infective process, until, after a period (varying in different instances from twenty to forty days), evidences of constitutional infection may appear.

Access from the surface to the general blood current, through the lymphatic spaces and vessels, *necessitates* passage, 1st, through the gland in immediate connection; 2d, through any other glands or vessels which may intervene between them and the great lymph channels; passage from thence into the general blood mass is immediate.

Thus, the delay between appreciable implication of the glands of connection and earliest evidences of constitutional syphilis is explained in accordance with known histological and physiological laws. Hence, it is only *after* a time sufficient for the passage of the diseased elements through the natural barriers, the lymphatic glands, to the general blood channels that systemic infection can take place.

With this view of the *progress of the syphilitic infection*,

the interval between the date of inoculation and introduction of the diseased elements into the ge circulation may be appropriately termed the INITIA PERIOD OF SYPHILIS.

LESSON VII.

Varieties and Complications of the Initial Lesion of Syphilis—The Indurated Papule—2. The Dry Scaling Patch—3. The Chancrous Abrasion—4. The Saucer-shaped, Non-suppurating Chancre, with Indurated Base and Edge—5. The Elevated, Moist, Velvety Papule—Modifications of the Foregoing—1. The Mucoid Chancre—2. The Inflamed or Suppurating Chancre—3. The Phagedenic or Gangrenous Chancre—Modifications of the Initial Lesion of Syphilis from Implantation of Chancroid or other Secretions upon it.

(1) The initial lesion of syphilis begins by a process of UNDUE GROWTH and MULTIPLICATION of normal germinal cells, induced by contact (through a lesion of mucous membrane or integument) with DISEASED or DEGRADED cells derived from a person suffering from SYPHILIS.

(2) Cells thus generated accumulate at the point of initiation, in a circumscribed portion of the surrounding and underlying tissue, and also in the walls and interior of the blood and lymph vessels of the tissue so implicated, and thus form a characteristic neoplasm, which is termed the *Initial Lesion of Syphilis*—of which there are five characteristic forms, namely:

(1) The Indurated Papule.
(2) The Dry Scaling Patch.
(3) The Chancrous Abrasion.
(4) The Saucer-Shaped Non-Suppurating Chancre, with indurated base and edge.
(5) The Elevated, Moist, Velvety Papule.

And as modifications—

The Mucoid Form.
The Inflamed or Suppurating.
The Phagedenic or Gangrenous.

Also modifications arising from implantation of the *Virus of Chancroid* or other *Vicious Secretion*, upon the Initial Lesion of Syphilis of any one of the above-named forms.

The initial lesion of syphilis may be situated at any

point on the surface of the body, or it may be concealed within the orifice of the meatus urinarius, the anus, or the mouth.

The differences in form of the initial lesion of syphilis are the legitimate and direct results of interference, to a greater or less degree, with the circulation of the tissues, at or beneath the point of initiation, of the abnormal cell-growth. Thus, in regard to the first-named form:

(1) The indurated papule is a dense neoplasm in the cellular tissue, *movable* under the skin, and hence not materially impeding its functions. Complete absorption of this morbid growth may take place, and the organism become thoroughly contaminated with syphilis, without the occurrence of any open lesion.

(2) The dry scaling patch always occurs upon integument, and the cell accumulation is diffused and quite superficial, producing an induration which to the touch is like *parchment;* hence the term "*parchment induration,*" applied to this lesion. Interference with the circulation in this case is not sufficient to prevent the evolution of the epidermis, but its development is impeded, and layers of dry epidermic scales cling to its surface, giving it a characteristic scaly appearance.

(3) The chancrous abrasion occurs upon an indurated papule, which by peripheral cell-growth has come to involve the circulation of the cutaneous or epithelial structures to the extent of rendering them friable and easily abraded. Imperfect evolution of the underlying cell elements results in a free shedding of the superficial layers from the moist surface of the lesion. Under the microscope these are seen to be like laminated epithelial scales, and constitute a significant mark of *chancrous abrasion.*

(4) The saucer-shaped non-suppurating chancre, with indurated base and edge. In this form a characteristic loss of tissue has taken place (almost entirely at the expense of the adventitious cell-growth), through the continuance and extension of the causes which produce the *chancrous abrasion;* loss of tissue, as in that case, also occurring, not through the suppurative or ulcera-

tive process, but by that which Virchow has termed a *necrobiosis* (death from altered life), that is, from a gradual obstruction to the processes of nutrition of the affected part. The secretion of this form of initial lesion is scanty, free from pus, and presents under the microscope the squamous epithelial elements found in the secretion of the chancrous abrasion.

(5) The elevated, moist, velvety papule, is neither more nor less than the previously described lesion, "*The saucer-shaped non-suppurating chancre, with indurated base and edge*," upon which the *granulation tissue* of Billroth has been developed. This tissue is described in Billroth's "Pathology," Am. ed., p. 93, under the head of "*Proliferating fungus granulations.*" He says, "The most frequent cause of the development of such granulations is *any local impediment to healing, such as rigidity of the surrounding skin*, so that the contraction of the cicatrix is difficult." This rigidity in the case of the moist velvety papule is caused by the characteristic induration of syphilis, always associated with this form of initial lesion.

We shall consider next the *modifications* to which the different forms of initial lesions are subject.

(1) The mucoid chancre, is that modification of the *moist velvety papule*, which arises from the occurrence of a diphtheritic membrane, or deposit, upon its surface, giving it the appearance of that secondary or constitutional manifestation of syphilis known as the *mucous papule*. This modification usually takes place coincidently with the appearance of mucous papules or patches in other localities. The *induration* associated with the *initial lesion*, thus modified, and its entire absence in the *mucous papule*, will constitute the distinguishing difference between these lesions.

(2) The inflamed or suppurating chancre. In any of the open initial lesions subjected to persistent irritation from friction of clothes, repeated coition, application of caustics, alcoholic excess (especially in the scrofulous and debilitated), an inflammatory action may be set up. This soon results in pus formation, and a more or less active necrosis, so like in character to

that occurring in chancroid, that errors in diagnosis are easy. The, now purulent, secretion of the chancre is found to be contagious, producing by auto-inoculation a sore, identical with true chancroid, thus further obscuring the differential diagnosis. Previous history, and the induration more or less distinctly marked, will usually be sufficient to indicate the true character of this lesion.

(3) The phagedenic or gangrenous chancre. In certain cases of the inflamed or suppurating initial lesion the indurated tissue becomes livid in color quite suddenly, and exhales a peculiar sickening odor, announcing the occurrence of gangrene. This results from arrest of the vascular supply to the induration, through an aggravation of the causes which led to the antecedent *necrobiosis*. This view is sustained by the known influence of mercury in arresting the destructive process thus set up in the initial lesion, while in any other form of gangrene the influence of this drug is known to be pernicious, and also from the fact that the loss of tissue is usually limited to the induration. When the death of tissue occurs by molecular continuity, the lesion is said to be PHAGEDENIC; when the induration sloughs out *en masse* it is called GANGRENOUS. The influences which tend to convert the inflamed or suppurating initial lesion into the phagedenic or gangrenous are *predisposition to suppuration from any cause*, constitutional dyscrasia, alcoholic excess, low, irregular life, etc.

All forms of the initial lesion in syphilis may be modified and more or less obscured by the occurrence of ulceration from any cause upon the site of syphilitic inoculation.

No surface changes at the point of entry of the syphilitic virus or principle can affect the course of the syphilitic infection after the disease germ has passed into lymph channels (spaces or vessels) below that surface. The characteristic local evidences of syphilitic infection may, however, be modified and more or less completely obscured by accidental lesions, such as herpes, resulting from contact with vicious vaginal and

uterine secretions, or other causes, or by contact of the lesion of syphilitic inoculation with the virus of chancroid.

Such lesions pursue their course uninfluenced by the syphilitic cell-proliferation previously inaugurated, and may thus obscure diagnosis until evidences of constitutional infection are manifest.

Hence, wherever the *possibility* of a syphilitic infection is present, any breach of tissue, whether a simple abrasion or fracture of mucous membrane or integument, or any vesicle or pustule, whether from general or venereal causes, whether healing as if simple or pursuing the characteristic course of the chancroid, then in such case, opinions in regard to the *presence* or *absence* of the *contagium of syphilis* must be reserved until such time, from the date of latest exposure, *as will equal the longest period known to obtain between inoculation and syphilitic infection*, as indicated by induration of the local lesion and enlargement and induration of the adjacent lymphatic glands. This is not less than forty days.

LESSON VIII.

Treatment of the Initial Lesion of Syphilis by Excision—Description of Operation and Subsequent Care—Constitutional Treatment also Essential—Local Measures where Excision is not Applicable—Relief from Accumulated Cell Material causing the Chancre occurs only through Fatty Metamorphosis—Mercury the most Efficient Agent both Locally and Internally—Forms, Doses, and Modes of Administrations—Treatment by Inunction—General Care—Treatment of Modifications—1. Mucoid Form—2. Inflamed or Suppurating—3. Gangrenous—Treatment of Concealed Initial Lesions—Treatment to be Continued after the Cure of the Initial Lesion—Increase or Diminution of the Induration a Barometer for Treatment—Enlargement and Induration of Lymphatic Glands nearest to Initial Lesion the First Positive Evidence of Progress of the Infection.

TREATMENT OF THE INITIAL LESION OF SYPHILIS.

First, by *Excision*. Whenever a well-determined initial lesion is situated in loose tissue (integument or folds of prepuce in males, or of the vulva in females) the earlier removal by excision is accomplished the better. Not with the expectation of preventing constitutional infection (which, as a rule, is inevitable before the local lesion is discovered), but as far as possible to remove a focus of dissemination for diseased elements, and to diminish the danger of conveying disease to others.

The infective neoplasm, whether under sound skin or appearing in any one of the forms or modifications previously described (except the inflamed or suppurating), should be removed *entire*. The resulting wound heals, as a rule, by first intention. Even when the induration is large, little if any deformity remains after cicatrization. Practically the indurated tissue is a foreign body, and its thorough removal requires the sacrifice of but little of the surrounding healthy structure. Favorably situated open initial lesions of long standing may be promptly cured in this way.

For the performance of this operation first cleanse *the* parts thoroughly by gentle bathing in warm water.

In all open lesions apply a solution of carbolic acid of a strength of one part of the acid to forty parts of water, after which raise the mass of induration between the forefinger and thumb, and encircle it firmly at the base with a bit of fine silver or malleable iron wire. The indurated part may be separated from the normal tissue in the same way by compression between the arms of a bent probe, being careful to include the entire induration.

Now with a narrow, sharp-pointed bistoury pierce the tissues at the centre beneath the compressing wire probe, and cut well under and out, including all the indurated and a little of the sound tissue of that side. This effected, from the place of beginning, cut out in the same way on the opposite side. Be assured by careful examination that every portion of the neoplasm is removed, then introduce interrupted sutures of silk or silver wire at intervals of a quarter of an inch or less.

The patient should be kept in the recumbent position, the parts constantly wet with carbolated water, until the third day, when on removal of the sutures union by first intention will, as a rule, be found to have taken place.

The resulting cicatrix may indurate, to a greater or less degree, but rarely, if ever, to the extent of inducing a solution of continuity.

In no case does this procedure lessen the necessity for *Constitutional Treatment.* The indurated papule, when so located that excision is unadvisable (as on the *glans penis*, or involving the tissues of the *corpora*), may be subjected to applications of the oleate of mercury (six per cent solution), or any correspondingly mild mercurial ointment. When the mucous membrane or cuticle covering the induration is abraded, or at any stage of simple *necrobiosis*, dusting the surface with dry calomel and protecting it with a thin layer of dry lint is then serviceable. Calomel, in combination with lime-water, in the proportion of a drachm to the pint (*lotio nigra*), or bichloride of mercury, half a drachm to the pint of lime-water (*lotio flava*), are both much esteemed as applications to the open initial lesion. The tissue

metamorphosis and absorption, which are requisite for the removal of the syphilitic neoplasm, are most readily induced by the internal administration of some one of the various mercurial preparations. In all forms of the initial lesion the chief obstacle to resolution or healing is the *mechanical* interference to nutrition occasioned by accumulated cell-growth. Its removal must occur through the process known as *fatty degeneration.* The most active and reliable agent in effecting this and in promoting the necessary subsequent absorption and elimination, is mercury; hence the internal administration of some mercurial preparation is *essential* in all well-determined initial lesions. The proto-iodide (so-called *green iodide*) of mercury, in pill, one quarter grain to one grain, three times a day. The biniodide in one thirtieth to one twelfth. The bichloride in doses of from one thirtieth to one twelfth of a grain. The mass. hydrargyrum, from two to four grains, and may be judiciously combined with iron. A favorite formula, and one which I usually prescribe, consists of two grains mass. hydrarg. with one of the exsiccated sulphate of iron. This may be made into a pill, and if intestinal irritation ensue one fourth grain of the watery extract of opium may be added. This pill was first suggested to me by the late Dr. Bumstead, and is sometimes known as pil. *Duo* or *Duplex.* Any of these forms of mercury may be administered (in suitable vehicles), in the dose deemed judicious for the presenting case, three times a day (increasing the dose if necessary to the limit as above indicated), until the constitutional influence of the drug is manifested by a spongy and sensitive condition of the gums or a slight mercurial odor in the breath.

In introduction of mercury into the system through inunction of the mild ointment of mercury, where this drug is not well borne by the digestive apparatus—a dram rubbed in morning and evening—changing locality each application—thus, in right axilla in morning, left at night; then under left knee, then right; then right axilla again, and so on, until the desired effect on gums is

produced; then reduce amount so as to keep just below this point.

The mercurial impression should be maintained as nearly as possible at this point *until complete absorption of the local neoplasm has been effected.* Its further employment will be considered in the Lessons on Treatment of General or Constitutional Syphilis.

Cleanliness, freedom from friction and irritation from all other causes, simple diet, and abstinence from alcoholic stimuli, are necessary to the most favorable results in treatment of the INITIAL LESION as well as all other forms of syphilis.

In regard to the modifications of the initial lesion of syphilis: The mucoid form requires, in addition to the constitutional treatment previously described, the application of the solid *argentum nitratis* (or some other caustic), sufficient *only* to destroy and subsequently to repress the exuberant granulations. The inflamed or suppurating initial lesion, requires rest and opiate or sedative dressing, as the *lotio plumbi et opii*, in the proportion of five grains each to the ounce of water; or the powdered *iodoform*, simple, or with an equal part of *tannic acid*, which seems to deodorize in some degree, and possibly increases the efficiency of the *iodoform*. In the gangrenous form the powdered *iodoform* is efficient as an antiseptic.

Poultices of powdered charcoal are also of value, but the internal administration of mercury must not be neglected *while the gangrenous action is limited to the induration.* Passing beyond this point, prompt and thorough cauterization under ether, with the fuming nitric acid or the galvano or the gas cautery, should be done so as completely to destroy the tissues involved in the destructive action. Opium is of great value in subduing pain in these cases, as well as on account of its bracing effect on the nervous system. Occurring in debilitated or highly scrofulous subjects, as is usually the case, attention should be given to general support, by generous diet, quinine, and iron. The *potassio-tartrate of iron*, in fifteen- to twenty-grain doses every three or

four hours (as recommended by Ricord), seems to exert a specific influence over gangrenous conditions.

It must not be forgotten that healing and apparent cure of the initial lesion does not mean *cure* of *syphilis*. After disappearance, more or less complete, the induration may return. Not unfrequently it may be observed to increase or diminish in apparent sympathy with the progress or abatement of the constitutional disease. From this fact the local induration has come to be considered by some as a reliable barometer, by which the effect of general treatment may be appreciated. The duration of the initial lesion varies greatly in different cases, sometimes disappearing within a few weeks, and with it every trace of induration; at others it continues as an induration, more or less distinctly marked, throughout the active stage of the constitutional infection. Enlargement and induration of the lymphatic glands, nearest in connection with the initial lesion, constitute the first positive evidence of the progress of constitutional infection.

Concealed initial lesions (as within the meatus urinarius or the anus) may be treated with bougies or suppositories medicated with opium, salicylic acid, or iodoform.

LESSON IX.

On the Early Manifestations of Syphilis—The Organism not Infected at once, but by a Gradual Process, through Normal Physiological Channels—No Constitutional Evidence of the Disease at any Point until at least Thirty or Forty Days after Inoculation—Roseola of Syphilis—Clinical Case—Roseola of Syphilis shown to be the Result of Sympathetic Nerve Disturbance like Simple Roseolas, and not Caused by the Local Accumulation of Syphilitic Material—Pigmentation Due to Exudation of the Coloring Matter of the Blood and not to a Specific Material—Clinical Case Illustrating the Papular Eruption of Syphilis and its Comcomitants—Supernumerary Epitrochlear Gland—Mucous Patches Simulating Diphtheria—The Secretions of all Lesions of this Stage of Syphilis Inoculable—Note in Regard to the Contagion of Syphilis—Importance of Care to Prevent the Same—The Necessity of an Artificial Port of Entry a Great Security against the Acquirement of the Disease—Illustrative Cases.

EARLY CONSTITUTIONAL FORMS OF SYPHILIS.

The cases to which your attention is now invited are in illustration of the acute stages of syphilis, and these include all the manifestations of the disease during which a contagious element pertains to it. The first manifestation, *the "initial lesion"* in its varied forms, has already been considered. The adjacent gland enlargements, resulting from the same processes of cell proliferation and localized accumulation, have been seen to be an inseparable adjunct in every case, but they have been present without the least evidence of constitutional disturbance. No sensation of the patient, nor any recognized physical sign, suggests anything more than a local disease. Notwithstanding the claim of certain authorities that syphilis is a constitutional disease at the moment of inoculation, and that, as Billroth puts it, the "organism is infected at once,"* all the scientific research yet made, goes to prove that the disease progresses by individual infection of germinal cells, from

* Billroth's Surgical Pathology. Am. ed., p. 386.

the point of inoculation, along the lymphatic channels, one of the chief offices of which, is to carry germinal material from the tissues into the general blood current. That their progress is slow and is obstructed by the lymphatic glands is made manifest, in every case, by the enlargement of all those immediately interposed between the point of inoculation and the great lymphatic reservoir, the *receptaculum chyli*, and by the fact that, until at least thirty or forty days after the inoculation, there is absolutely no evidence of the disease having reached the general blood current. In other words, it may be said, that, up to such time, the infection is confined to the locality of the inoculated point and the glands in immediate connection with it, and cannot yet be said to be a constitutional disease. At about the sixth week, however, an eruption presents, as the first evidence that the disease has found access to the system at large. This is well shown in the patient now before you. He has a history of suspicious venereal connections—of one in particular about two months since. He accidentally noticed a small abrasion on the inside of his prepuce, near the "bridle" on the left side, which bothered him for several weeks, but was never of sufficient account to consult a surgeon about, and finally healed. Yesterday, after getting quite heated in a running match, his face became spotted with red blotches, and, on going to bed, he found his body more or less covered with them. Here you have a fine specimen of the roseola of syphilis. Its history and advent are characteristic. There is a distinct thickening easily felt at the point referred to as the site of the abrasion. It is not as characteristic as in many cases you have seen, but is sufficient, when taken in connection with the history, the distinctly enlarged inguinal glands, and the roseola, to characterize the initial lesion of syphilis.

The glands of the cervical region are also enlarged, so that we may accept the case as a classical one of early constitutional syphilis, which I have been accustomed to designate, on account of the tendency to localized accumulation in the glands at a distance from the point of inoculation, and in the skin at a later period,

as *the period of general infection and localized cell accumulation.**

In its general appearance this exanthem is not unlike a slight eruption of measles. Pressure with the finger in the syphilitic roseola causes the color to disappear completely when the eruption is recent, as in the present instance, but when it has existed for some weeks a brownish or copper-colored stain is left. The longer the eruption remains, the more likely it is to leave its characteristic trace, namely, a coppery stain, unaffected by pressure. The color of this stain here, as well as in other syphilitic eruptions, is usually considered valuable as a diagnostic mark of syphilis. With this exception, however, it is not materially different from an idiopathic roseola. Like the latter, it appears suddenly, often during or following any exercise which gives a violent impetus to the circulation of the blood, such as rowing, dancing, or running.

Pain or other premonitory symptom is not necessarily associated with it. Sometimes it is slight, consisting only of a few pale spots; while again it is profuse and highly colored, and occasionally slightly elevated. But it never develops into any other form of lesion. Beyond a reddish blotch, it is never more than a copper-colored stain; and even this stain, the only really salient point of difference between simple roseola and that which is thus seen to be associated with the advent of constitutional syphilis, will be shown to result from simple causes. It is true that this eruption is popularly accepted as syphilitic, in the sense that it is caused by the local presence of syphilitic material, and is to be gotten rid of through the same means by which the specific cell accumulations (forming papules in the skin and mucous membranes) at a later stage of the disease are eliminated. I believe, however, that this can be shown to be an error, and that this roseola, like all the other roseolas, is the result of a purely functional disturbance. Bäumler says of it: "In every syphilitic

* For further information as to the causes of the "Roseola of Syphilis," see Otis on the Physiology, Pathology, and Treatment of Syphilis, p. 17. New York: Putnam. 1881.

efflorescence there is a circumscribed dilatation of blood-vessels, together with a certain amount of exudation of white-blood cells into the sheaths of the vessels merely, and into the surrounding tissue. The greater the degree of stasis the more abundant will the exudation of red corpuscles be; and *it is the alteration of the coloring matter in these red globules which imparts to the color of the syphilides, after they have remained for some time, their yellowish or brownish shades.* These shades are more distinct in proportion as the congestion of the vessels thereby occasioned recedes, and they are more pronounced the longer the stasis has continued. In the same way *any efflorescence* or its immediate vicinity, or scars following ulcers on the lower extremities, *not due to syphilis*, may assume this color. Long-continued dilatation of capillaries and stasis of the blood are all that is necessary to produce pigmentation."

Case II. Here is another case presenting the characteristic developments of syphilis at a somewhat later period, and affords us an excellent opportunity of a further study of its leading features. The initial lesion is said to have occurred four months ago, and one month after the suspicious connection. It healed in a couple of weeks. During its presence the patient says it looked like a simple sore, but there is still here a little knot of induration, situated in the loose tissue of the prepuce, indicating the character as well as the locality of the lesion. We find also well-marked enlargement of the lymphatic glands of the groins, and particularly below Poupart's ligament, on both sides, which latter is quite unusual at so early a period of the infection. You also observe very plainly an eruption on the forehead. It is papular in character, and is characteristic of the secondary eruption of syphilis, the first eruption being a roseola, which usually comes on at a period varying from six weeks to two months after the appearance of the initial lesion. Then, after another interval of about the same length of time, we get the second eruption, which is papular in character; the first—the roseola—being macular, and occasionally slightly elevated. The second eruption has been described by authors as

of a raw-ham color or a coppery hue. It is rosy in color when it first makes its appearance, but grows darker and darker, until finally the papule passes away, leaving a distinct reddish or copper-colored stain. You will observe in this patient that the eruption is very prominent and wide-spread over the back. Some of the papules are surrounded by a little exfoliated epidermis, which is known as the "collarette of Biett," and is considered characteristic of a syphilitic lesion by some writers. It is simply an exfoliation of the epidermis of the surface of the papule, seen most distinctly at its base, and is dependent upon modified nutrition, caused by infiltration of the papules with cells. These interfere with the vascular supply of the part, and we get the exfoliation here exactly in the same way that we get it at the point of initial lesion—from accumulation and concentration of cells in that locality. When this exfoliation is present on a papule, it affords an additional proof of the syphilitic character of the trouble. You will, however, see cases of psoriasis where the scales have been brushed off, which so nearly simulate the syphilitic papular eruption that it is impossible to distinguish between them; and without other aid we are often obliged to wait further developments in order to make the diagnosis. Fortunately, however, for the diagnosis, but unfortunately for the patient, we nearly always have, at the time of the occurrence of this papular eruption, other lesions which aid us in making the diagnosis. The glandular enlargements in the groins, of the neck, and also in the epitrochlean spaces—sometimes one, sometimes all—ought to be well marked by this time. You will observe here on the neck a gland which can be seen at quite a distance —it is so much enlarged. There is a group of enlarged and indurated glands just behind the sterno-cleido-mastoid muscle, and another farther back on either side. Here in the right epitrochlean space there is an enlarged gland about the size of a large pea, and what I do not remember to have ever found before, viz., another gland about two inches higher up, only a trifle smaller than the first. Quite often the epitrochlean

gland, instead of being in the little space above the internal condyle of the humerus, is found an inch or two or three inches higher up, between the borders of the biceps and the triceps; but a supernumerary gland, as in the present instance, is very rare. By this time also papules occur in the mucous membrane, and these are especially characteristic, there being nothing else which resembles them, unless possibly in psoriasis. When syphilitic papules occur in mucous membrane they usually soon become eroded and covered with a diphtheritic pellicle to greater or less extent.

Mucous patches—really papules—in the mouth are characteristic of syphilis in its acute stage, and are present in a marked degree in this case. The mouth and the tongue are literally covered with them to an extent which you rarely see. These papules, which appear on the tongue, throat, and mouth, are superficial, and so flat that they are scarcely if at all raised above the surrounding surface or spread over an area varying from the size of a pea to that of half a dollar or larger, having often a gray or pearl colored diphtheritic edge which occasionally festoons the edge of the soft palate, forming a very characteristic and unmistakable mark of syphilis. Some time ago I was called to see a man who was supposed to be suffering from diphtheria. I found him surrounded by his family, who were in great solicitude about him. On looking into his throat I saw this characteristic festooning of the palate, and did not hesitate a moment in making up my mind that the trouble was syphilitic. Soon having an opportunity to speak to the young man alone, I discovered that he had syphilis, although he had not before been aware of it. The mucous patch is also liable to occur between the toes or any place where there is habitual moisture. Just at the verge of the anus is a favorite seat for it; and knowing this fact, examination of this locality will often help you out in the diagnosis of an obscure case. The mucous papule, from its prominence when on the skin or semi-mucous membrane about the anus, is usually called a mucous tubercle, and is quite characteristic in this patient, as you see.

You should bear in mind that the secretions of all lesions during this stage of the disease are inoculable, and one suffering from it may communicate the disease from the secretion of any open lesion upon the body or on the mucous membranes.* You will understand,

* The active period of syphilis, thus shown to be marked by excessive localized cell proliferation, is 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 physiolo ical secretions—milk, saliva, urine, perspiration, tears, and 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, and in this view we readily see how the physiological secretions above mentioned, which do not contain them, 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 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.*"

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

† 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.

therefore, the importance of warning the patient having such lesion of the danger of communicating the disease to others by contact. A pencil, a pipe, a spoon, a knife, or other article introduced into the mouth where mucous patches are present, some of this secretion contained in the saliva drying upon it, and afterward coming in contact with an abrasion of the lips of another person, will communicate syphilis to that person as positively and certainly as would a syphilitic venereal connection. From this you may see that syphilis is not necessarily a venereal disease, but any one exposed in the ways above referred to is liable to receive it, in which event it will follow the same course as if acquired by venereal connection. The great security which we all have against the accidental acquirement of syphilis is, that it requires an artificial port of entrance—a fracture of the skin or of the mucous mem-

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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 only 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. Rindfleisch, an eminent German authority, in speaking of embryonal cells coming up from the tissue juices for the regeneration of mucous membranes, says of such cells that "*they become epithelial cells only by coming into contact with such.* We must believe," he continues, "in a kind of epithelial infection." This, he says also, "must of course just as well obtain when embryonal formative cells approach an existing epithelial stratum, as when, conversely, epithelial elements approach embryonal formative cells." 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 that the so-called *virus* of syphilis is simply a manifestation of that 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?

brane for its inoculation. Otherwise, sooner or later, we should all be likely to have it, for we could not come in contact with people who have syphilis without danger of getting it at every turn. But fortunately it requires an abrasion, an open port of entry. It is rarely through the ordinary affectionate relations between children and parents, brother and sisters, that communication of the disease takes place. If, however, an abrasion exist upon the lips of both parties the disease may be communicated from the one to the other by a kiss. I have often known this to occur in the venereal kiss, but never by the ordinary kiss of courtesy and family affection. But the liability to communicate the poison to an innocent person should be borne in mind by every one passing through the acute stage of syphilis. We must also bear in mind the fact that the disease may be transferred from a syphilitic to an innocent person, by the physician, by the use of the spatula, carelessly laying it down after examining a syphilitic mouth, allowing the secretions to dry upon it, then introducing it into the mouth of another patient before properly cleansing it. This is especially liable to occur if the second patient be a child, as by its restlessness during the examination, a lesion of the mucous membrane of the mouth may be made by the instrument. All instruments in use about the mouth, throat, or teeth should be carefully cleansed and passed through the flame of an alcohol lamp immediately after use, and certainly before use upon another person, because syphilitic lesions may be present, although unrecognized. Several well-authenticated cases have come under my observation where syphilis has been contracted in the mouth from lack of proper care in this regard. Mucous papules are very often present in the vagina or on the os uteri of females suffering from acute syphilis. In the *Independent Practitioner* for March of this year may be found a report of no less than eight cases of syphilis of the finger, in medical men, acquired through vaginal examinations or attendance on syphilitic women during childbirth; and since sending in that report I have seen two similar cases occurring in the resident medical staff of one of

the hospitals of this city. All of these cases were followed by constitutional evidences of syphilis. It is scarcely necessary to say that the early recognition and local treatment of mucous papules, patches, or tubercles, is one of the important duties attaching to the management of acute syphilis. Another characteristic lesion of the disease consists in the presence of scabs in the hair, as seen in this patient. The discovery of scabs, in this locality, sometimes enables us to make a positive diagnosis, when otherwise we would be in doubt. Alopecia, or falling of the hair, is one of the common, though not constant, concomitants of this stage of the disease. It is readily accounted for on the same principle that explains the exfoliation of the epidermis in the syphilitic papules. The crowding of newly formed cells in the vicinity of the hair-bulbs interferes with their nutrition. It is not at all unusual for a patient to lose his hair completely, including his eyebrows and whiskers; but this baldness is not permanent, since on proper treatment, directed to the removal of this superfluous cell material, the hair is renewed. We find that any or all of the foregoing lesions of syphilis may be absent, and the patient yet go through a disease which shall be recognized as syphilis. In other words, this disease varies in its intensity as much as any other, and, except the enlargement of the lymphatic glands, none of the conditions which you see in this patient are necessarily essential to the progress of syphilis. This is a very marked case, one in which we find present more than the usual number of characteristic lesions or manifestations.

LESSON X.

The Treatment of Syphilis in the Acute Stage—Not Addressed to a Vague and Conventional Diathesis, but to the Removal of the Material shown to be Creating Disturbance—All Lesions of Active Syphilis the Result of Local Crowding of Cells at Various Affected Points—The Difficulty to be Remedied a Mechanical One—Inquiries as to the Best Method of Removing the Superfluous Cell Material—Fatty Metamorphosis Alone Capable of Effecting this—Different Methods of Producing Fatty Degeneration and Elimination—Mercury Proven to be the most Potent Agent—Reasons for Using it in Small Doses Long Continued—Directions in Regard to the Use of Mercury in its Various Forms—Internal Administration—External Use—Diet in Syphilis—Effects of Rum and Tobacco in Retarding the Cure of Syphilis—Prof. Willard Parker's Advice.

The treatment of this, as well as all cases of syphilis during the acute stage, will be addressed to the removal of the material which is causing the trouble. That is, to the superfluous cell growth or accumulation. The same material that we find in the initial lesion, and the same as that which we find embarrassing and enlarging the gland structure. The same as in the papule. The same as in the mucous patch. The same as in the papules which form the scabs which occur in the hair. These lesions are all brought about and kept up by one and a single condition, namely, that resulting from an abnormal local proliferation and accumulation of germinal cells. This fact has been substantiated by repeated microscopical examinations of all lesions of acute syphilis. Consequently, the cause of all the several conditions or lesions of active syphilis being the same,—that is to say, an accumulation of this embarrassing cell material,—the treatment is simple, and the same for all, having simply for its object the removal of such material.

The question as to how this shall best be effected leads us to consider first, the nature of the material we desire to be rid of. This has been proven beyond a question to consist of human germinal cells, in no known respect different from normal germinal cells, except that

they are the product of a proliferation more rapid than that process under normal conditions. Microscopically they cannot be distinguished from the cells which are proliferated and accumulated to repair loss of normal tissue brought about by ordinary causes. Secondly, What are the means and processes by which healthy cell-material, exuded in excess of the necessities of growth and repair, is removed? The answer is simply that, the necessary process, is a *fatty metamorphosis.* Through this, alone, any living material, normal or abnormal, must pass before it can be eliminated from the living organism. The means by which it may be effected are various: 1st, pressure; 2d, innutrition; 3d, various external agents and internal remedies, which by experiment have been found efficient in producing or hastening fatty degeneration or metamorphosis of tissue.

First, in regard to pressure: The effect of pressure in producing this result, is recognized in its known influence, as a surgical measure, in reducing and dispersing abnormal growths. This is also recognized in its tendency to spontaneous disappearance, after a time, without treatment, of the cell-accumulations of syphilis. The tendency of all syphilitic lesions is toward recovery. The necessary pressure exerted upon any local cell accumulation in the tissues would tend toward its removal by fatty degeneration.

Second, in regard to innutrition. Withholding of necessary food produces fatty degeneration of the tissues. The starvation cure was at one time, especially in Germany, in great repute as a cure for syphilis. The sweating cure. The long popular and much vaunted cure by cathartics, diuretics, etc., through profuse drinking of decoctions of sarsaparilla, senna, and different woods, can now be recognized as influential through their capacity to hasten fatty metamorphosis. But the remedy of greatest acknowledged value, in the treatment and cure of syphilis, for the past two hundred years, and up to the present day, is *mercury,* and this, it is well known, is also the most efficient agent in producing fatty metamorphosis of living material. Healthy persons quickly emaciate, all kinds of tissues break

down, under its continuous excessive use. In the salivation it then produces, the characteristic fœtid odor has been found due to the decomposed fat which results from the fatty degeneration it causes. In point of fact, every remedy which has ever had a substantial reputation, as of value in the treatment of syphilis, will be recognized, *à priori*, as one of greater or less power in inducing fatty metamorphosis. If then we find in syphilis, as the characteristic and essential factor of every lesion, an accumulation of superfluous cell material, sufficient in degree to embarrass the functions of the vessels or tissues implicated, we have good reason to introduce the remedy which, *par excellence*, is known to be potent in removing it, namely, *mercury*. And if we consider that this remedy is also in highest repute from a clinical standpoint, we are warranted to proceed in its administration with the expectation of the best possible results. The manner of its use, the size of the dose, its frequency, and time of continuance only remain to be settled. Clinical experience in the administration of mercury has taught the fact, now accepted by all recent recognized authorities in matters syphilitic, that small doses of mercury continued for a very long period, say from one to three years, constitute the best treatment for the most efficient and permanent eradication of syphilis from the system of a person afflicted with that disease. This applies to any and every form and manifestation of it during the acute stage, which stage may be said to cover a period varying in different cases from one to three, possibly four, years. The hastily generated cell material which has been described as the essential element in the production of the different manifestations of syphilis, lacks the healthful vitality to enter effectively into the composition of normal tissues. It is present only as obstructive material, and from its presence as such is already subject to the mechanical influences which tend toward its dissolution. It may then be accepted as more readily affected by remedial measures calculated to induce fatty metamorphosis of living material, than such material generated and developed under normal conditions. Hence a smaller amount of mercury,

for instance, would be necessary to effect its removal from the affected organism than would be required to produce a like effect on healthy tissues. Such an amount then as would cause the speediest removal of the imperfect or syphilitic material, without damaging the healthy constituents of the body, would constitute the highest ideal of an antisyphilitic treatment. Hence we can accept from an intelligent and philosophical standpoint the position which has heretofore been only taken from a clinical or empirical view of the matter, viz., *That small doses of mercury, long continued, constitute the most effective and judicious mode of treatment of syphilis during its active stage.*

Beginning then with small doses, of whatever preparation of mercury we decide to administer, in a given case, we increase the amount until we find the constitution of the patient being affected, evidenced by the presence of softness of the gums, or a little red line about them. When that occurs, we know we are getting to a point of affecting the healthy structures of the body, and then the dose is reduced until just that point is reached at which the patient can be carried through without any disturbance of the alimentary canal or of the salivary apparatus. In the case of this patient, then, we should commence by giving small doses of mercury, gradually increasing the quantity until the point of tolerance is reached, and keep it there. Any of the preparations of mercury may be given. We will begin, say, with the protoiodide, a quarter of a grain, three times a day for two or three days; or lest the patient should, as is the case with some, be peculiarly sensitive to the influence of mercury, we may begin by giving only two pills a day for two or three days, and then add a pill at a time as long as he shows no evidence of disturbance from it and, when the highest point of tolerance is reached continue the dose. Sometimes blue mass with iron is used, pills containing two grains of the mass. hydrarg. with one grain of the exsiccated sulphate of iron—two to four daily until the desired impression is produced, and continuing usually about three per day throughout the desired period. In all these cases I may remark

that iron is indicated because the health is usually more or less below par. Therefore, when giving the proto-iodide of mercury, I am also in the habit of giving the dialyzed iron, in doses of ten or fifteen drops, three times a day. The biniodide of mercury may be given in doses of a sixteenth of a grain, or any other of the preparations of mercury may be administered in suitable doses, the object being simply to get the gradual and positive effects of the drug. It may be administered by external means, using a small quantity of mild mercurial ointment, say the size of a filbert, rubbing it in under one knee one night, under the other knee the next morning, under the axilla the next night, and so on, using it night and morning. There have been those advocating the hypodermic use of a solution of the bi-chloride of mercury, but this is a method of administering it which, while I have used it, I do so no longer, and do not recommend it, finding other quite as efficient and more agreeable ways of introducing mercury into the system. Mercurial baths or fumigations may also be used for the same purpose.

Whatever be the form of mercurial you decide upon employing, your treatment should be conducted according to the principles I have mentioned for all the lesions or manifestations of the acute stage of the disease. Whether it be of the skin, of the mucous membrane, or whether it be a syphilitic iritis, an inflammation of the iris (which is caused really by a papule occurring at that point, that is, an accumulation or aggregation of cells). All these conditions or manifestations of syphilis, I repeat, respond to this systematic method of mercurial treatment better than to any other. The open lesions during the acute stage of syphilis, chiefly on mucous membrane, the mucous papules, patches, and tubercles, before alluded to, in addition to constitutional measures, require prompt local treatment, especially on account of the contagious property of their secretion. Daily applications of a strong solution of nitrate of silver—forty to sixty grains to the ounce of water—or a light brushing over with the solid arg. nit. will be found most efficacious in hastening their

disappearance. This also applies to ulcerations of the tonsils, which sometimes occur during this stage.

When papules are so situated as to cause annoyance by their unsightliness, as on the face or hands, ung. hyd. nit. or ung. hyd. præcip. alb. with an equal quantity of cosmoline, or a ten per cent solution of oleate of mercury with equal part of cosmoline may be used as a daily local application with advantage. In the latter case a few drops of one of the essential oils will render it more agreeable. The diet of the patient should be simple, excluding acids, spices, and highly spiced food. Tobacco is particularly injurious during the course of this disease, from the fact that both smoking and chewing are liable to produce irritation of the mucous membrane, and when a mucous patch occurs in the mouth it is a very difficult thing to heal while its contact with tobacco is kept up. It is certainly a very great hardship for persons who are addicted to the use of tobacco to give it up; but it is very important that they should do so for the proper and effectual treatment of this disease. In a very interesting note, received not long since from the venerable Professor Willard Parker, in which he spoke of syphilis, I remember he very quaintly said in regard to it, "Some people believe that syphilis is incurable; that is not my belief. When a patient comes to me with syphilis I say to him, Do you use tobacco or alcoholic spirits? If he says yes, I say to him, You are possessed of three devils—syphilis, rum, and tobacco; if you will exorcise two of them, R. and T., I will take care of and cure the other; but if you will not agree with me to give assistance in this way, I will not undertake your case." I would advise you all to make a note of this and remember Dr. Parker's advice. I can assure you it fully coincides with my own opinion, particularly in regard to the "rum;" and in regard to the "tobacco" also, when the mucous membrane of the mouth and throat is affected or predisposed to trouble.

LESSON XI.

Case I. Clinical Case Illustrative of the Initial Lesion Occurring without Ulceration—Points of Value in Diagnosis of the same—Treatment. Subsequent History—Demonstration of Cure through Birth of Healthy Children—No Evidence of Syphilis in Twenty-nine Years.

Case II. *Initial Lesion of Syphilis without Induration*, and without Loss of Tissue "Parchment" Variety—Any Degree of Induration may Present—Baumler's Views.

Case III. *Saucer-shaped, Non-Suppurating Initial Lesion, with Indurated Base and Edge*—Description—Concomitants—Treatment—Subsequent History—Marriage—No Subsequent Trouble in Fifteen Years.

Case IV. Initial Lesion of Meatus Urinarius Symptoms—Complicated with Apparent Chancroids—Their Occurrence found due to Inflamed Initial Lesion—Diagnostic Points—Treatment—Secondary Lesions—Initial Lesions Aggravated by Local Irritants—Sexual Indulgence—Alcoholic Stimuli.

CLINICAL CASES FROM MY NOTE-BOOKS, ILLUSTRATIVE OF THE VARIOUS FORMS WHICH THE INITIAL LESION MAY PRESENT IN CONSTITUTIONAL SYPHILIS, AND OF THE VARIOUS LESIONS ASSOCIATED WITH AND FOLLOWING THE SAME:

Case I. *Induration without ulceration.*—M. W.; æt. 29; merchant. June, 1854. History: Never had any previous venereal trouble. Illicit connections with various females, at intervals of a week or two, for many years; no suspicion of disease especially attaching to any. Noticed a little abrasion or chafe on the loose tissue of the prepuce, near the fossæ glandis, in the median line, which healed in a day or two under the application of a little Goulard lotion. Some three months after, during which he had no renewed exposure or any suspicion of trouble, he noticed a small hard painless swelling on the site of the former abrasion, and some sense of fulness in the groins, which attracted his attention, when he recognized several little bunches, not before observed. Was under the impression that these might be due to strain from over exercise, and called to inquire if they needed any attention.

Examination revealed a hard kernel in the cellular tissue of the prepuce at the point before noted, movable and not sensitive. Lymphatic glands of both inguinal regions distinctly enlarged, some size of a small bean; not tender. Tissues of pharynx and soft palate deeply congested. Glands along the posterior border of the sterno-cleido-mastoid muscle enlarged; not tender.

The points of value in arriving at a diagnosis were as follows:

1st. A history of fracture of the skin or semi-mucous membrane resulting from a suspicious venereal connection.

2d. Subsequent induration at that point.

3d. Recent painless enlargement of the inguinal glands, or those nearest to the suspected point of inoculation.

4th. Similar enlargement of glands at a distance, as the cervical.

5th. Congestion of faucial region.

Careful examination failed to discover any eruption on the skin or mucous membrane. Not the least pain or impairment of general health appreciated by the patient.

Diagnosis.—SYPHILIS in the so-called secondary stage. Allowing twenty-one days as the usual or average interval from inoculation to induration and enlargement of inguinal glands, and forty or fifty days before the subsequent general gland enlargements, it carried the initiation of the disease back at least two months, which, taking into consideration that the induration was quite as large as a small pea when accidentally discovered, warrants the conclusion that the inoculation of syphilis occurred at the date of the abrasion one month previous, or three months from the time of its discovery.

The patient was put on a mild mercurial course and kept under its influence, as indicated by occasional tenderness of the gums (when it was alternated with iodide of potassium), for fully two years. The congestion of the pharynx continued with but slight change for several months, when a sharply cut and painful ulceration occurred in both tonsils. This was treated by occa-

sional applications of the strong nitric acid and solid nitrate of silver subsequently. The throat continued congested for several months longer; no other ulceration or eruptive lesion at any point. The induration occurring on the site of inoculation did not disappear entirely for over a year. At the end of the second year the gland enlargements were scarcely perceptible, and the treatment was discontinued, the patient remaining free from any sign of disease for one year after. Then he married. Subsequently four children were born to him. At this date, September, 1882, twenty-nine years have elapsed. Patient and family all living and well. Eldest son, 28; next, 26; next, 20; daughter, 10: no one of them having in the interval had any recognized manifestation of syphilis; on the contrary, have all been exceptionally healthy and robust.

Remarks.—Evidences of localized cell accumulation progressing gradually in the line of the lymphatic channels, from the point of inoculation, to the glands in the groin, then at a distance, finally involving the tonsils to such a degree as to interfere with the processes of nutrition and production of a sloughy ulceration, show that the case was unquestionably one of syphilis. It is shown, by this case, that syphilis may be characteristic *without ulceration* or recognized general eruption, and it will be found in following the history of other cases that the ulceration of the tonsils, which in this instance was valuable in a diagnostic point of view, is more usually absent, and hence is not an essential but an accident, without which the foregoing case would have been free from all ulcerative lesions. This case forms a link in the chain of evidence which goes to prove that syphilis is curable, that the contagious element of the disease is limited in its duration, and that in this instance the limit did not exceed three years.

Case II. *Initial lesion without characteristic induration, and without loss of tissue.*—Papular eruption. M. L.; 22; printer. Occasional venereal exposures: presented with a well-marked papular eruption on the forehead, also sparsely scattered over the body, arms, and legs; denied ever having any sore. Inguinal glands en-

larged and painless; in cervical region the same. Epitrochlear gland of left arm as large as a marrowfat pea. A brownish spot, size of half-dime, was observed on the body of the penis, covered with fine bran-like scales. Patient first noticed this about two months previously as "a little spot of scurf" about one half its present dimensions; thought it was of no consequence. Integument occupied by the spot slightly but distinctly stiffened, giving an excellent example of what is termed by authors the *parchment induration*, and characteristic of a somewhat rare form of the initial lesion of syphilis. Patient's general health unimpaired, but had of late suffered with headache in the evenings, chiefly keeping him awake during the early part of the night, and passing off without treatment. Diagnosis syphilis. Initial lesion of parchment variety. Treatment: ℞ pil. duplex (2 grs. mass. hydrarg. and 1 ferri sulph.); one after meals.

Under this treatment the cephalalgia disappeared in the course of a couple of weeks. The eruption on the body gradually lost its papular character, leaving a coffee stain, which at the end of six months was just visible; glands less in size, but still prominent. Initial lesion free from induration and scales, but still of tawny color distinctly marking its site. Very slight redness at border of gums. On several occasions there had been slight sponginess and tenderness, then pills by direction, had been suspended for a few days and again resumed as the tenderness disappeared; otherwise the medicine had not produced any sensible disturbing effect. Bowels regular; appetite good; general health perfect.

Remarks.—Baumler, in speaking of this variety of the initial lesion of syphilis, says, "From these cartilaginous indurations" (associated with and characteristic of the ordinary initial lesion of syphilis) "to the flat paper-like thickening of the mucous membrane, where increased resistance is perceptible only in feeling of it sideways, all imaginable intermediate stages occur; the one thing common to them all, being a dense cellular infiltration of the tissue of the cutis or mucous membrane." *

* Ziemssen, Am. Ed., vol. iii. p. 112.

Case III. *Saucer-shaped, non-suppurating initial lesion, with indurated base and edge.*—H. G. A.; commercial traveller; aged 31. Nov. 15, 1867. Suspicious connection about two months previously; none before for several months; none subsequently. Thinks that it was about four weeks after when he accidentally discovered a little "chafe" on the left side of the penis just behind the glans. This he treated with simple water dressings for a few days, when he saw a physician who pronounced it syphilitic. Cauterized it; gave him a lotion to apply on a little lint, and ordered pills to be taken for several weeks.

Under this treatment the "chafe" had gradually increased in size, and presented the following conditions: An ulcer-like lesion about the size of a half-dime; edges slightly elevated, rounded, sloping, forming a saucer-shaped concavity; the floor slightly granular; very red and clean, and exuding a little transparent secretion, which under the microscope was found to contain only large epithelial scales. To the touch the edge and base of lesion was hard and elastic, and movable on the underlying cellular tissue. It represented the typical unirritated initial lesion of syphilis often known as the *Hunterian chancre.* The lymphatic glands in either groin were enlarged, painless on pressure; several the size of a small bean; no gland enlargements in the cervical region; no trace of any eruption on the body; throat not congested; general health good.

Diagnosis.—Syphilis in the primary or *initiative* stage.

Treatment.—Pil. duplex thrice daily; local application of lotio nig.

Subsequent History.—During the following month the patient had a well-marked roseolous eruption, which passed off within a few days without in any way affecting his general health. A group of lymphatic glands became enlarged on each side of the neck; the mucous membrane of the throat became deeply congested and somewhat sensitive.

Under the treatment above noted, the local lesion gradually healed and the induration slowly diminished, but did not disappear entirely for nearly six months,

and then left a slightly juicy-looking swelling in its place, which could be distinguished for fully as much longer.

The mercurial treatment as above noted was continued steadily for a full year, the only omission being during a few days on three or four occasions, when increasing to four pills per day the gums became tender; otherwise there was no trouble of any sort referable to the medicine or the disease. Glands still distinctly enlarged. During the second year a combination of mercury with the iodide of potassium was given (hyd. biniodid. $\frac{1}{16}$ gr.; potass. iodid. grs. vjii.; *Mistura biniodid. hydrarg.*), a teaspoonful three times daily after meals. At the end of this year, during which the patient's health had been excellent, the gland enlargements in the inguinal and cervical regions had entirely disappeared; there was not the slightest trace of syphilitic trouble at any point, and the patient was discharged cured. Married two years subsequently; two children, fourteen and seven years. August, 1882; no trouble to which any syphilitic suspicion could attach during this interval of nearly fifteen years.

Case IV. *Initial lesion of the meatus urinarius.*—H. R. Inflamed or suppurating chancre. After a series of impure connections a smarting on urination was observed, and on examination by a physician slight oozing of mucus from the urethral orifice. Was treated by injections under the belief that he had contracted a gonorrhœa. Matters continued about the same for a few days, when the discharge became tinged with blood. This led to an examination, which revealed a small point of ulceration just within the meatus urinarius. On the supposition that the trouble was chancroid, the ulcer was touched repeatedly with nitric acid and subsequently treated by introduction of iodoform. After a persistent trial of this plan for about three weeks, the difficulty not only did not improve, but the part became very tender and swollen and the discharge profuse and purulent, and urination very difficult. Several small ulcers at length appeared on the inner surface of the elongated prepuce. This was the condition of things

when the patient presented himself for change of treatment.

Attention was at once attracted to the dense induration of the tissues about the meatus, also to the presence of well-marked enlargement of inguinal glans on both sides.

The glans and prepuce were swollen and intensely red. An ulceration of ragged character occupied fully two thirds of the meatus inferiorly, and extended about one third of an inch, as determined by the introduction of a small meatoscope (Otis's). Three small sharply cut ulcers, the largest size of a split pea, occupied the preputial opening—apparently chancroids. These had occurred over a month from the date of any venereal exposure, and more than three weeks from the discovery of the urethral trouble. This was opposed to the supposition that the original lesion was a chancroid. When, however, the well-established fact that the initial lesion of syphilis, under prolonged irritation, becomes suppurative, and the resulting pus has the contagious and destructive qualities of pus from a true chancroid, the explanation of the occurrence of apparent chancroids, a month after exposure was easy. This was also a suggestion as to the true character of the original lesion, and was confirmed by the *recent painless* gland enlargements in each groin, as well as by the characteristic induration associated with the urethral ulcer. The patient was required to keep the recumbent position for a few days, and apply a lead and opium lotion to aid in reducing the inflammatory complication. Iodoform applied to the pseudo-chancroids and to the initial lesion, and the patient was promptly put upon a mercurial course (pil. duplex, one thrice daily). Under this treatment the ulcerations external to the urethral orifice healed within a few days, but the urethral obstruction, causing by the swelling and induration was so increased, that sloughing of the urethra threatened, when the meatus was freely divided through the densely indurated tissues. Immediate amelioration of pain and inflammation resulted. From this time the recovery from the local troubles progressed rapidly, and

gave but little further annoyance, although the induration remained. In another fortnight the patient called to say that his gums were a little tender, and also that he had had some diarrhœa for a few days. Evidently the mercurial was in excess, and he was directed to discontinue until these troubles had passed away. Examination of his body at this time revealed a well-marked roseola, the spots of which, from the size of a half-dime to one third that size, were distinct on the breast, back, and arms. Several also on the soles of the feet, and also on the palms, but none on the face, or back of hands. This was a complete surprise to the patient, although he had been instructed to look out for it, and he was confident that it had not been present more than twenty-four hours, and, except for the diarrhœa, expressed himself as having felt perfectly well. Enlargement of glands in the cervical and epitrochlean regions was now distinct.

Nothing further of moment occurred for the following weeks, and the patient was in fair condition, taking three pil. duplex daily; when at about the middle of the third month (from the discovery of his trouble) he began to complain of headache at night, keeping him awake until nearly morning, then passing off and returning on the following night, and he complained of a general *malaise*, and this without any recognized excess or error in diet. A small superficial ulceration was discovered on the right side of the tongue, and another about the size of a three-cent piece on the right anterior pillar of the fauces. Some few scabs were also discovered on the scalp. On again examining his body the faint coppery stains of the roseola were seen here and there over the body, and in addition to this a few red elevated papules, not more than a dozen in number, were discovered scattered over the body; none on the face, hands, or feet.

Pills continued. The superficial ulcerations (mucous patches) in the mouth were daily touched with a forty-gr. sol. of nit. arg. In a week the patient was in his usual condition; the papules passed off in about a month, leaving some slight yellowish stains. No recur-

rence of mucous patches. Continued the pills up to date of departure from town, July 1, 1882, at which date he had been under treatment for twelve full months, and at the time had no trace of induration about the site of the initial lesion, no trace of the eruptions, nothing left to indicate his syphilitic trouble, except the still easily recognized, though greatly decreased gland enlargements in the groin, in the cervical and right epitrochlean regions. That in the left epitrochlean space at time of discovery about the size of a pea had quite disappeared. Ordered mist. biniodid. for at least six months, and then to report for further orders.

Remarks.—The result of persistent irritation of a simple initial lesion of syphilis is well shown in the foregoing case. Also the fact that sores simulating true chancroids may arise simply from contact with the pus from an initial lesion of syphilis, the normal secretion from the latter being only composed of serum and the débris of epithelial material.

It will be observed that, in this case, the appearance of the roseola was not preceded by any peculiar sensation on the part of the patient, while that of the later papular eruption was associated with characteristic preliminary disturbance. This, however, is in all probability due to the gradual obstruction of lymphatic glands throughout the system, and not to any special influence of the papular eruption; for it will be observed that here, as in similar cases, the appearance of the eruption did not relieve the malaise of the patient, as is the case under similar circumstances in the eruptive fevers. It will be observed that this case varies from the preceding ones in that the characteristic eruptions of the active stage were present. As we proceed it will appear that no two cases are quite similar in regard to the variety or degree of concomitant manifestations; but it will also be found that in all cases the lymphatic gland enlargements play a prominent part, and that, as their presence is the most important and significant evidence of the presence of syphilis, their gradual and finally, their complete disappearance, is the surest evi-

dence of the complete disappearance and virtual cure of syphilis. Finally, it may be stated in regard to the inflammatory complication, present in the foregoing case, that this is likely to occur in any initial lesion of syphilis from the persistent application of irritants, such as nitrate of silver, sulph. copper, etc., or from friction by the clothing. Its occurrence is favored by the scrofulous diathesis, by sexual excitement, and by irregular living and alcoholic stimuli.

LESSON XII.

Clinical case—Phagedenic form of the Initial Lesion and its physical peculiarities—Treatment by mercurials—Rapid healing under their influence—Phagedena of Chancroid influenced unfavorably by mercurials—Subsequent history, showing results of insufficient treatment in early stage—Early, steady and prolonged treatment the only trustworthy means of preventing later lesions of the disease—Inability to bear the mercurial treatment very rare—Cures, in properly treated cases, estimated at 95 per cent.

Case V. *Gangrenous initial lesion, or so-called phagedenic chancre, followed by mucous patches; death by cerebral softening.*—L. K., drug clerk, aged 21; of scrofulous diathesis and dissipated habit; presented with an inflamed ulcer about as large as a three-cent piece, shaped somewhat like the figure 8, partly on the glans penis (left side), and encroaching upon the fossæ glandis, and situated upon a densely indurated base. The floor of the ulcer, which was apparently about a line in depth, was of a yellowish gray color, of a shreddy appearance, exhaling the peculiar sickening odor of gangrenous tissue. Glands of either groin enlarged and hard; no other signs of disease. He gave a history of great sexual and alcoholic excess prolonged over several weeks; the discovery of a sore on his glans penis about a fortnight previous, and daily touchings with blue stone, on his own responsibility. He fancied he was getting better when he went off on a spree of several days' duration, having occasional sexual connections in the time. For the last two days there had been considerable pain, and he had been applying iodoform in powder. The induration, which was very dense, extended about two or three lines from the edge of the ulcer, where it met quite abruptly the swollen tissue surrounding it. Diagnosis: gangrenous initial lesion of syphilis. The fact that simple sores and also chancroids become indurated by applications of caustics, and even of simple astringents in some cases, was borne in mind; but the

dence of the complete disappearance and virtual cure of syphilis. Finally, it may be stated in regard to the inflammatory complication, present in the foregoing case, that this is likely to occur in any initial lesion of syphilis from the persistent application of irritants, such as nitrate of silver, sulph. copper, etc., or from friction by the clothing. Its occurrence is favored by the scrofulous diathesis, by sexual excitement, and by irregular living and alcoholic stimuli.

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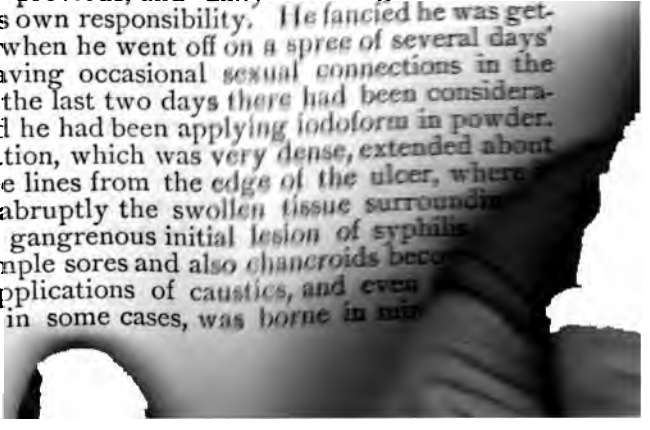
Case V. *Gangrenous initial lesion, or so-called pha-lenic chancre, followed by mucous patches; death by ebral softening.*—L. K., drug clerk, aged 21; of scrofu-ıs diathesis and dissipated habit; presented with an lamed ulcer about as large as a three-cent piece, ıped somewhat like the figure 8, partly on the glans nis (left side), and encroaching upon the fossæ glandis, d situated upon a densely indurated base. The or of the ulcer, which was apparently about a line depth, was of a yellowish gray color, of a shreddy pearance, exhaling the peculiar sickening odor of ıgrenous tissue. Glands of either groin enlarged and d; no other signs of disease. He gave a history of eat sexual and alcoholic excess prolonged over several eks; the discovery of a sore on his glans penis about fortnight previous, and daily touchings with blue ne, on his own responsibility. He fancied he was get-g better when he went off on a spree of several days' ration, having occasional sexual connections in the ıe. For the last two days there had been considera-pain, and he had been applying iodoform in powder. ıe induration, which was very dense, extended about o or three lines from the edge of the ulcer, where t quite abruptly the swollen tissue surroundi agnosis: gangrenous initial lesion of syphilis t that simple sores and also chancroids beco ed by applications of caustics, and even ringents in some cases, was borne in mi



recent well-marked and painless gland enlargements in the inguinal regions were, when taken in connection with the history and condition of the lesion, considered sufficient proof of its syphilitic origin to warrant the test by a mercurial course. The patient was sent to bed, powdered charcoal poultice, sprinkled with iodoform as disinfectant and sedative, and calomel in $\frac{1}{12}$-gr. doses was administered every hour during the day, not continuing it through the night; and when 1½ grains had been taken the patient's gums were distinctly tender and the medicine was omitted. The slough extended until the entire induration was destroyed, it was removed, within a few days, and showed a healthy granulating surface. The mercurial was continued in the form of the proto-iodid, hyd. in pills of half a grain each, and healing took place in about a month, leaving scarcely a trace of induration, but a soft, juicy-looking swelling, about the size of the original lesion, in its place. Some swelling and tenderness of the submaxillary glands occurring, the mercurial was entirely omitted, and the patient put upon cod-liver oil and iron. Not seen again for nearly six months, when he reported with mucous patches on the soft palate and gland enlargements in cervical region well marked. Again put on the mercurial treatment, and this time by nightly rubbing in ½ dram of ung. hydrarg. mixt. under the arms and knees alternately. The mucous patches were touched with the solid arg. nit. After about a fortnight the patches being quite healed, the gums scarcely, if at all, affected, the right submaxillary gland began to inflame, and in spite of local applications, of immediate cessation of the mercurial, and the administration of iodine and cod-liver oil, it went steadily on to suppuration. The patient here passed from observation. Some three years after he was reported as having several epileptic seizures, finally dying of cerebral ramolissement.

Remarks.—The early prominent feature in this case is the gangrene occurring in the initial lesion. Auspitz,*

* Anatomie d. Syph.: Initial Sklerose. Von Prof. H. Auspitz u. Dr. Paul Unna. Vierteljahrschrift f. Derm. u. Syph, (1876), s. 161.

Unna,* Beisiadecki,† Verson, Kaposi, and others have shown that the induration of the initial lesion is dependent upon a dense infiltration of cells and development of fibrous tissue which interferes more or less with the vessels of nutrition. Complete obstruction occurring in certain cases, gangrene results as in the foregoing case, and is essentially different from the molecular gangrene of chancroid, which is the result of the destructive nature of the lesion *per se*. Hence the treatment by mercurials, which tends to produce fatty metamorphosis of the obstructive material in the initial lesion of syphilis, and thus relieve the cause of necrosis, is indicated; while in gangrene or phagedenia occurring in the chancroid the mercurial influence would tend to hasten the destructive action.

The fact that the slough was confined to the indurated mass, and that healing went rapidly on under the mercurial treatment, is in confirmation of the foregoing view.

The inability to bear a mercurial treatment may reasonably be attributed to the scrofulous diathesis, and this aggravated by every sort of dissipation and imprudence. The father of this patient died of chronic phthisis, and this patient had had swellings of cervical glands *without suppuration* some years previous. The occurrence of epilepsy, and subsequent death from brain disease, (which was designated cerebral softening,) in a young man of twenty-four years, can safely be considered a legitimate sequel of syphilis. It is reasonable to believe that, had the patient been able to bear a prolonged and systematic course of treatment by mercurials, he would have, in all probability, escaped the trouble which caused the fatal issue.

In the recent work of Hill and Cooper, of London (1881), prominent English authorities, the following statement occurs: "There is also good foundation for

* Zur Anatomie der Syphil.: Initial Sklerose. Vierteljahrschrift f. Derm. u. Syph. (1878), s. 531.

† Archives of Acad. Sciences, 1867. (Otis's Physiology, Pathology, and Treatment of Syphilis. New York: Putnam. 1881.) Vienna, 1873. Vol. i., p. 53.

the belief that steady, prolonged mercurial treatment, although not an infallible means, is the only trustworthy one for preventing a return of the disease."

Bumstead and Taylor, in their late work* (New York, 1879), go so far as to say that "we know that the great majority of cases (estimated as high as 95 per cent) which have been thoroughly treated are absolutely cured, and are never followed by a relapse." It is not, then, easy to estimate the gravity of the misfortune to one who, having acquired syphilis, is unable to bear a systematic mercurial treatment. With judicious management such cases are fortunately rare.

* Fourth Ed., 1879, p. 810.

LESSON XIII.

Clinical case—Initial Lesion complicated with Herpes and Phimosis—Difficulties in diagnosis—Treatment—Contagious character of secretions from all fractures of skin or mucous membrane during active stage of Syphilis—Falling of hair due to cell accumulations about hair bulbs—Polymorphous character of Syphilis in some cases—Absence of characteristic lesions in others.

CASE VI.—*Initial lesion, occurring upon herpes and complicated with phimosis. Followed by roseola, mucous patches, and alopecia.*—H. T., merchant, 34, had suffered on frequent occasions during several years with herpes preputialis, the little watery vesicles of which would appear sometimes independently of any venereal exposure, and again would follow such exposure within three or four days. In several instances the vesicles became pustules, and small ulcers were formed; but through the use of the simple lead lotion recovery had always taken place within a few days, except in a single instance, when it was fully a fortnight in healing, and there was said to have been much swelling and hardness. His prepuce was redundant and habitually covered the glans penis, but was readily retracted and was kept scrupulously clean, as he had long previously found that inattention to this favored the production of the herpes. Occasional venereal connections were indulged in, with great care taken to secure immunity from disease. The only person with whom connections had been had, for three months previous, was with one who was thought entirely above suspicion of having any venereal trouble. A fortnight previous, three or four days after last connection, a group of herpetic vesicles appeared. These were on the inner layer of the prepuce, at its attachment near the frenum, on the left side. They were treated as usual with the lead water and disappeared within a few days, with the

exception of two points which pustulated, and finally, when about the size of a small split peppercorn, coalesced. Had much necessary walking to do, and the parts after about ten days became so swollen that the prepuce was retracted only with pain and difficulty. Still certain that the trouble was a simple herpes, aggravated by his exercise and by a rather debilitated general condition from overwork, he sought advice only as to herpes. This was about four weeks subsequent to his last connection.

Condition on presentation, June 10, 1878, as follows: In good general health, but somewhat debilitated from overwork. Penis somewhat turgid and reddened; prepuce redundant, covering glans. Orifice contracted so that the glans could not be exposed. Pressure between the fingers, just at the base of the glans on the left side, showed some slight condensation of the tissues and caused some pain, and oozing of slight mucopurulent fluid. Two inguinal glands about size of a marrowfat pea in left groin. No amount of argument would persuade the patient that his difficulty was likely to prove different from the attacks of herpes with which he was familiar, and he declined, almost indignantly the suggestion that an examination of his paramour should be made in order to aid in determining the exact nature of his difficulty. Absolute rest on the lounge or in bed and injections of weak lead and opium wash to thoroughly lave the preputial cavity was continued for the next two weeks. The attempts to retract the prepuce gave so much pain that it was no longer attempted. Under the rest and sedative treatment the soreness diminished, but an induration, which was appreciated in some degree on first examination, was now increased, and the two glands in the left groin, one above and the other below Poupart's ligament (and which had been strenuously insisted on as the result of strain occurring a long time previous), were evidently increasing in size and were slightly tender on pressure; besides this several smaller glands were now appreciated on the opposite side. With these strong evidences of syphilitic trouble, the patient was finally persuaded to sub-

mit to a mercurial treatment, commencing with pil. proto-iodid. hyd. ¼ grain, three times daily, and 15 drops Wyeth's dialyzed iron in a glass of milk, while the same local applications were continued. On the third day pills every six hours. At the end of a week the tenderness of the local lesion was scarcely perceptible, and the swelling less prominent. Glands no longer sensitive on pressure. No effect of the mercurial seen in the mouth, but a slight intestinal irritation causing two or three fluid passages from the bowels, ⅛ grain of the watery extract of opium was added, and a dram of ung. hyd. mit. ordered to be rubbed alternately into each thigh every night. No further intestinal trouble. The preputial swelling and tenderness decreased so much within the next fortnight that the prepuce was retracted (though with some difficulty), discovering on its inner surface a superficial erosion about as large as a five-cent piece, set in a distinct and characteristic disc of indurated tissue. Slight tenderness of gums appearing, the ointment was suspended, and pills (¼ gr. protoiodid.) reduced to four, omitting the opium, which had caused slight constipation.

July 5th (seven weeks after last connection), the ulcer had quite healed, but the induration remained prominent. The patient called attention to a bright rosy eruption which was distributed profusely over the body, a few spots on the face and palms. Glands in the cervical region distinctly enlarged; size varying from a buckshot to a No. 4; one especially prominent on either side of the *ligamentum nuchae*. Left epitrochlean size of small pea; right, not discoverable. Mercurial well borne; no tenderness of gums, but a slight red line was seen at the border of the gums of several teeth. Has had some soreness of throat. Examination shows right tonsil inflamed and somewhat swollen; fauces deeply congested; patient advised to leave off smoking. Ordered sat. sol. potass. chlorat. to be used as a gargle and habitual wash for the mouth, teaspoonful to a tumbler of water, three or four times a day.

July 30. Has continued the medicine steadily. Roseola faded out in about two weeks leaving scarcely a trace;

soreness of throat also passed off leaving the parts still congested, but free from tenderness; smokes occasionally; does not think it affects his throat; gums not affected.

August 10. Calls, complaining of return of throat trouble; otherwise doing well. Examination shows a small patch of superficial ulceration on the right side of the soft palate, bordered with a narrow gray line; also a small crack in the mucous membrane at the left angle of the mouth. Explain the importance of such lesions viz., that mucous patches or any cracks in mucous membrane, of whatever character, during the first year of syphilis at least, give rise to a contagious secretion, and when brought in contact with an abrasion in a healthy person, on the lips or elsewhere, will communicate syphilis.

Touch the ulcerations with solid nit. arg. very lightly, just to whiten, and recommend that this be repeated daily until their complete healing. Also as gums are not at all red or tender, increase pills again to four daily and prohibit smoking entirely, as the effect of tobacco always is to aggravate and prolong syphilitic difficulties of the mouth and throat. Patient complains of his hair falling out; wishes to know if this is due also to his disease. State that it certainly is, but that under faithful pursuance of his treatment this as well as the other difficulties will in all probability be but temporary. A stimulating wash was given for the hair.

The subsequent history of this patient presented no salient features. His acute throat trouble passed off in a few days, but the faucial mucous membrane continued congested for many months. The alopecia, which in some cases extends to entire loss of hair, eyebrows, etc., in this instance was never sufficient to attract attention. The induration on the site of the initial lesion gradually became smaller, but was not entirely gone for quite a year from the date of its appearance, although the treatment was kept steadily up, scarcely missing a dose, giving as much as the patient would bear without producing tenderness or redness of the gums, or irritation of the bowels; this was

from three to six pills of the proto-iodide during each twenty-four hours for a little more than a year. At this time all evidences of cell accumulation at the site of the initial lesion had entirely disappeared. The glands in the groins were still slightly enlarged, but those in the cervical and left epitrochlean regions had quite gone. Was very anxious for consent to marry, but advised to a twelve months' course of what is familiarly known as the mixed treatment—Mist. biniodid. hydrarg. containing $\frac{1}{16}$ biniodid. and 8 grs. potass. iodid. thrice daily. This was taken faithfully, and borne without trouble of any sort. Six months after this, he not having seen any evidences of his former trouble for over a year, and as the inguinal glands, although slightly enlarged, were not greater than many who have never had syphilis, consent was given to his marriage—about two years and a half from date of acquirement of the disease. A short time since he called, having been happily married for over two years, to state that he had had not the slightest return of his old trouble, nor had his wife contracted any disease; his only trouble was that, as yet, he had had no children.

Remarks.—The occurrence of an initial lesion on the site of a *herpes preputialis*, as shown in the foregoing case, is not infrequent. On the contrary, there is no more favoring condition for the acquirement of syphilis than a predisposition to herpes. A slightly irritant leucorrhœal discharge is often sufficient to determine an attack, and the bland and unirritating nature of the disease germ of syphilis does not interfere with the natural course of the herpes. It should never be lost sight of that no lesion occurring after an illicit venereal contact can be safely pronounced free from danger of having been the point of entrance of a syphilitic disease germ until after the longest period which has been known to elapse between *inoculation* and the appearance of the *initial lesion*, and this is never less than forty days.

Second point of especial moment is the prompt effect of the mercurial treatment in reducing the tenderness and swelling, not alone of the initial lesion but of the

adjacent glands, adding proof to the position that mercury acts on the newly proliferated syphilitic cell material which distends and disturbs the tissues, inducing a fatty metamorphosis, (through which alone living material can be eliminated from the organism,) and aids also in deciding between opposing authorities, some of whom* claim that mercury should be withheld as a rule until the manifestation of constitutional syphilis appears; while others† claim that the treatment by mercury should be commenced as soon as the initial lesion can be recognized as such. Certainly, if mercury acts in curing syphilis through any property it is known to possess, it is by its power to hasten tissue metamorphosis or fatty degeneration; and if it has this value in the cell accumulations of the so-called secondary manifestations, it cannot be denied in the accumulations constituting the initial lesion, which has been shown by such authorities as Cohn, Beisiadecki, and others, to be virtually identical in composition and nature with them. Hence we are prepared to agree intelligently with those who begin the treatment of syphilis at the earliest moment of its recognition.

The usual tolerance of mercurials, given in doses, and with the frequency sufficient to produce a mild and curative effect, is well shown in the foregoing case.

It will be observed that the papular eruption, which often occurs about the third or fourth month of syphilis, was apparently absent. Its equivalent was, however, recognized, in the *mucous patches* in the mouth, and in the *alopecia*, which is found by microscopic examination to result from accumulation of cells about the hair bulbs, similar to those forming the papule on the skin in other cases. The polymorphous character of syphilis in the acute stage is well seen in this case, but it will be found that no two cases are alike in the number, locality, or degree of development of their manifestations, and that cases may even be met which pass through the different stages of the disease without pre-

* Bumstead and Taylor ("Venereal Diseases." Philadelphia: 1879).
† Hill and Cooper (London: 1881).

senting a single characteristic lesion of the skin or mucous membrane; the only evidence of syphilis being confined to gland enlargements (often escaping observation), and the subsequent occurrence of well marked sequelæ of syphilis.

LESSON XIV.

Clinical case—Initial Lesion on the lip—Simulating Epithelioma; also the mucous patch—Dark color of papular eruption on a quadroon—Roseola passing off in 48 hours—Malposition of Epitrochlean Gland—Disease with which enlarged glands sometimes escape discovery—Subsequent papular eruption—Occurrence of Iritis due to same cell accumulation as produces the papule—Treatment for all lesions in the active stage of Syphilis the same—New troubles not an evidence of relapse, but incidents *en route*—Treatment of Iritis—Persistence of the papular eruption Characteristics—Recurrence after disappearance, and in same spots formerly occupied—Continued recurrences—Significance of this—Question of marriage a difficult one in such cases—State of papular eruptions significant of changes previously effected in the skin where papules occupy spots of previous eruption, and suggestive of *non-contagious* stage.

CASE VII. *Initial lesion. Mucoid form, simulating a mucous patch. Large papulo-pustular eruption. Iritis—Acquired from woman with mucous patches and a miliary papular eruption.* A. W., chemist, 38, presented December, 1878, for an opinion as to the nature of a small superficial ulcer just inside the lower lip, near the right labial commisure. Patient had suffered occasionally with "cold sores" about the lips, and thought the trouble of that nature, until a medical friend suggested that it might be a commencing epithelial cancer, the result of excessive smoking, and ought to be shown to a surgeon. Two surgeons had examined the sore, one of whom was confident that it was an epithelioma; the other thought it doubtful, and suggested syphilis, and advised him to get another opinion. The lesion was nearly circular, and about as large as would be covered by the top of an ordinary lead pencil; its surface was slightly elevated, florid, granular, and covered with a grayish pellicle. The tissues on which it was situated were quite hard to the touch, for perhaps a quarter of an inch surrounding. But for this induration it could not have been distinguished from a typical mucous patch. Two slightly

rged lymphatic glands lying over the parotid were nd; none at any other point. The patient denied ever ving had syphilis, or any sexual connection for more an a year, but admitted kissing a female domestic in s family on several occasions. No other evidence of ouble was found. After much argument the gentle- an at last consented to send the domestic for examina- on. She proved to be a very handsome quadroon, ery simple, and evidently unaware of having any enereal disease. She admitted that she had had some ore-throat and a profuse leucorrhœa, but denied ever aving had sexual intercourse; denied also having ad any sores of any sort, except an occasional "can- ker" in the mouth. Examination revealed an exten- sive superficial irregular ulceration of the soft palate, bordered with the diphtheric deposit characteristic of the *syphilitic mucous patch*. She had also well-marked gland enlargements in all the usual localities, and a miliary papular eruption over the body. The papules were about the size of a large pin's head, in groups of 6 to 8 or 10, an inch or more apart, and appeared on the light coppery skin of the quadroon as of a deep purple color. At first claiming that she had always had these dark points, she finally confessed that they had appeared only two or three months previous, and also that she had had a single illicit connection some months before, but stoutly denied all knowledge of having had any local disease.

With this positive knowledge of syphilis and the strong circumstantial evidence which it afforded, there was but little room to doubt that the suspected epithelioma of the lip was an initial lesion of syphilis, acquired through contact with a mucous patch; the secretion of which, as well as all the secretions throughout the active stages of syphilis, being well known to possess the contagious property equally with the open initial lesion of syphilis.

Mr. W. was satisfied to commence a systematic mercurial course, as advised. Pil. duplex (hyd. mass. 2 grs.; ferri exsic 1 gr.) was taken steadily for about a month, at the rate of three per day, without any trouble of any

sort, except slight tendency to fluid passages from the bowels, which was readily corrected by a little paregoric. Having been instructed to watch carefully for any eruption, he called within a few days, with a slight mottling of the skin on back and abdomen, so indistinct, however, it was quite uncertain whether this was anything more than the natural spottiness which is not uncommon in cool weather. Gland enlargements in the cervical region were now distinctly made out; none in the inguinal or epitrochlean.

On the following day, by careful inspection, looking across the back, and also the abdomen, against a strong light, a pale eruption, slightly elevated in places, made it quite certain that it was the roseola, initiating the constitutional stage of syphilis. It passed off completely, however, very soon, for 48 hours afterwards it could not be certainly detected at any point.

It is worthy of note here, that another careful examination for an enlarged epitrochlean gland resulted in its discovery fully the size of a marrowfat pea, and situated *at least three inches above the epitrochlean space*, between the borders of the biceps and triceps muscles. The knowledge that such malposition is not very uncommon, and that quite large glands, having sometimes very loose attachments, will slip under the borders of muscle or fasciæ in such a way as to elude any but the most careful and persistent search, may occasionally be serviceable.

During the next few weeks nothing noteworthy, except congestion of the faucial mucous membrane, which at times was quite swollen and sensitive, but temporarily relieved by chlorate of potash gargle, and occasional spraying with a 40-gr. solution of argent. nit. Finally, two or three small superficial ulcers occurred on the tonsils, and at about the same time some redness and pain in the left eye, which had been quite weak for a day or two. Examination showed some conjunctivitis, the iris slightly discolored and duller than the opposite, and on closing and opening the lids quickly, with aid of a thumb on either eye, it was seen that the iris of the left eye was nearly immovable; and, as

if it were not sufficient to have discovered this well-marked example of a mild type of syphilitic iritis, it was also found that a scanty eruption of papules, some as large as silver three-cent piece, had developed on the back, arms and legs; not the least irritation announced their presence; they were rosy in color, slightly elevated, and quite insensitive to touch. The patient was very despondent from this combination of ills until assured that the trouble with the throat, the eye, and the integument, were simply evidences of the same papular eruption, modified by locality; an accumulation of cells which had caused a disturbance by their presence, chiefly mechanical, and which, with the aid of the treatment, would, in all probability, pass off in a short time without leaving any permanent trace. That they were not evidences that the treatment thus far pursued was unsuitable or inefficient; but that, in the necessity of avoiding damage to healthy structures, the process of destroying and eliminating this imperfect cell material, accumulated in the mucous membrane of the throat, in the iris, and in the skin, was a comparatively slow but a sure one. That nothing else was necessary but to go steadily on with the mercurial, in just that amount and frequency as could be borne without damage to the sound material and tissues in which they were imbedded. That these new troubles were not the evidence of a relapse or coming anew under the syphilitic influence, as manifested in the apparently arrested and transient roseola. They were simply *incidents*, adverse currents, or shoals, if you will, on the onward voyage towards recovery; that while many made this voyage with scarcely a ripple of discomfort from beginning to end, others met with varying obstructions and delays; but all eventually passed through, and few comparatively, if well guided to its termination, found themselves much the worse for the experience. The distillation of a couple of drops of a solution of atropine (2 grains to the ounce of distilled water) into the affected eye, had the almost immediate effect of demonstrating that slight adhesions of the iris to the anterior capsule of the lens had taken place,

irregularity in border of the iris becoming visible. This, however, soon gave way under a few repetitions of the atropine, at intervals of three or four hours, which also relieved the pain. The attack proved a very slight one, for no other treatment became necessary; and after continuing the dilatation by atropine for a couple of weeks, and simply avoiding a strong light, all evidences of the trouble had disappeared. The initial lesion and the induration, never extensive, had quite disappeared. The papular eruption remained, and although the mercurial was well borne, and an occasional sense of tenderness of the gums announced the limit of endurance of the remedy. At the end of another month it had not entirely lost its salience, although it had quite lost its reddish color and assumed a deep coppery hue. Occasional papules showed an exfoliation of the epidermis at their base, which condition, resulting from the interference with nutrition through the cell accumulation causing the papule, constitutes a valuable point in diagnosis. With a steady continuance of the treatment, however, the spots gradually disappeared, having continued (from the date of their appearance until they could no longer be detected) fully three months. Nothing then occurred to interrupt the favorable course of the trouble in this case—throat trouble having gradually faded out: the gland enlargements almost gone. After nearly a year, however, the treatment in the period having been faithfully pursued as initiated, small scaling papules appeared. These were flat, slightly thickened spots, rather than papules, about the size of a lead pencil top, with their silvery border of epidermal scales, when discovered, and, had it not been for previous history, could not have been distinguished from spots of simple psoriasis. There had been on each hand only a very few spots of the original papular eruption, say five or six, and had caused the chief discomfort of the patient at one time, as they constituted the only evidence of syphilis to a casual observer. On this account they had received quite a little local treatment by mild mercurial unguents, and with apparent success, as they passed off at least a month before those on the body. The

statement (which the patient made quite confidently) that these spots had returned *in the exact places occupied by the former eruption* was noted. Similar carefully-observed cases which had been met, where a return of such an eruption over three years (in one instance) after the original papular eruption, and in the same places, seemed to indicate that the later eruption might belong rather to the sequelæ of syphilis than to the evidences of the active contagious disease. And the treatment was changed from the simple mercurial to the combination of mercury, with the iodid. of potass. (Mist. biniodid. hydrarg., see page 259.) A few weeks of this treatment, added to ung. hydrarg. nit. and vaseline, equal parts, locally, caused entire disappearance of this, and after three months further treatment with the misturæ biniodid. (3 three times a day), it was suspended from accidental causes for nearly a month, when the spots returned, and apparently *on the exact sites of the former spots.* Treatment resumed, with the addition of a fumigation thrice weekly, thirty grains of resublimed calomel, (this preparation, on account of its less irritant property, being preferred), and moderate inspiration of the vapor advised, if it could be borne without producing cough.

Again, within a few weeks, the spots disappeared, and, as the gums became slightly tender, the fumigation was omitted, continuing the "Misturæ Biniodid." alone. The patient then went on living very regularly, and taking his medicine as ordered, and with scrupulous care, as he was under engagement of marriage formed just previous to his inoculation, and desirous of hastening his recovery in every possible way. After six months of this treatment, in order to test his condition, he omitted his medicines and the spots returned in less than a fortnight. This was the only evidence of the syphilitic diathesis now remaining, for the throat had long since ceased to show any unusual engorgement, and the glands in all localities, while still distinguishable, were no longer characteristic. Another six months, making fully two years from the date of his inoculation, and the patient presented very worried, stating that while he

was quite well in every other respect, and had no trouble of any sort when he took his medicine, as soon as he left off treatment, the scaly spots would return on his hands, and *always in the same places*. He was very anxious for some definite time to be set when it would be safe for him to marry. It became necessary to advise this patient that, in the present state of knowledge in regard to such a relapsing eruption following syphilis, it was uncertain whether or not any contagious element was still associated with it; that the active stage of syphilis was one of steady progression, while the sequelæ were prone to relapses. That the repeated recurrence of the scaling spots on the same sites were significant rather of organic change in the vessels of nutrition in the affected integument than of an infecting material free in the blood; but inasmuch as there was not sufficient available experience to decide this point positively it would be necessary for him to postpone his marriage indefinitely, and go on with his treatment until the cessation of it, as tested from time to time, was not followed by a recurrence of the trouble. Then, according to best authorities, he should wait a full year, which, if passed without evidence of syphilitic trouble, he might venture to consider himself well, and marry. This patient is now two and one-half years from the date of inoculation, and has passed nearly three months without treatment or any return of trouble.

Remarks.—The occurrence of the syphilitic initial lesion on the lip is not very rare. In the foregoing case the contagion was undoubtedly direct, but this is the point, more than any other, where the initial lesion may be looked for as a result of mediate contagion, viz., contact as of the lips with any articles which have been in use by persons who have mucous patches on the lips or in the mouth or fauces. Hence, when syphilis is suspected, and the site of the initial lesion in doubt, this region should be examined with great care. The presence of enlarged lymphatic glands in the vicinity is of great value in clearing up a diagnosis, for *these are rarely, if ever, absent* in syphilis beyond the third or fourth week after inoculation, and may often be found at a much

earlier period. (For explanation of manner in which mucoid form of initial lesion is formed see page 108.)

Various modifications of the papular eruption of syphilis will be met, no two cases presenting exactly the same arrangement, locality, or degree of development. The miliary variety where the papules are about the size of a pin's head, sharply acuminated, and often into a little serous accumulation or a scale at the summit, and thickly and irregularly distributed, or in groups (like that described in the female associated in the foregoing case), or arranged in circles or figures of 8. Again, the papules may be large and flat in groups, or thickly and generally distributed, or sparsely (as in the above case of A. W.), but to a certain extent always symmetrical on either side of the median line of the body—a fact which characterizes the early papular eruption as contra-distinguished from that sometimes occurring in groups and unsymmetrically at a later period, as towards the end of the first year of infection, or subsequently. Papules may be associated with pustules; may all be more or less pustular; may even begin apparently as pustules; and thus a great variety of eruptions of a papular or papulo-pustular character may be met in the early period, say from the third to the sixth month after infection. The presence of such eruptions, whether we designate them after authorities by the size or shape of the papules, or according to their real or supposed resemblance to simple diseases of the skin, as the lichenoid, the lenticular, the scaling papular (syph. psoriasis), the annular (syph. lepra), or the acneiform, the variola form, the impetigo form, or the ecthyma form, we must nevertheless bear constantly in mind the fact that one and all, if of syphilitic origin, are the result of the localized accumulation of cell material, hastily generated through the syphilitic influence; taking the different forms through constitutional idiosyncrasies or dyscrasias, and, according to the late microscopic researches of Kohn, Auspitz, Virchow, Neuman, Baumler, always beginning in a papillæ cutis,* and that

* See Otis on "Physiology, Pathology, and Treatment of Syphilis:" Putnams, 1881, p. 33.

the treatment for all is the same, varied in degree only, to suit the constitutional peculiarities of each case. It is also proper to state that no eruption can be pronounced syphilitic from its *appearance* alone, but that, in order to warrant such opinion, gland enlargements must also be present more or less pronounced in the various localities where the superficial lymphatic glands are located, as in the cervical, inguinal, and epitrochlear regions. It will also be seldom that other evidences are not also present, one or more, such as congestion of the throat, ulceration of tonsils, mucous patches in the mouth, or between the toes, or at the anus. It is then evident that the form, color, size, or locality of an eruption is not the test as to its nature, but it must always be traced to a probable syphilitic origin before it is warrantable to pursue a systematic mercurial course. That, so traced, every variety of eruption of a papular, pustular, or vesicular character, or any combination of these forms occurring between the second and seventh months after a syphilitic inoculation may be said to have its cause in a localized cell accumulation beginning in a papilæ cutis. For the elimination of this, a gentle persistent mercurial treatment is indicated not only as the result of clinical experience, but from the fact that it is "*the remedy, par excellence, for inducing the fatty metamorphosis: through which alone the cell accumulations occurring during the acute stage of syphilis can be removed.*"

Papular eruptions, and their variations, in the early stage are sometimes slow in reaching their full development, varying usually several days and sometimes as many weeks, but there are apparently no relapses, the new accessions appearing always at new points. The so-called relapses coming on soon after the disappearance of the first crop of papules, coming as they usually do in groups, would seem to be due to the setting free of infectious material stored in temporarily obstructed lymphatic glands. In other cases where the eruption recurs at same points (as in present case,) this would seem to be due to changes in the skin from previous damage, and may ultimately have to be classed among

the *sequelæ* rather than among the manifestations of the active period of syphilis, or that in which a contagious element is still present in the blood and in the secretions of all lesions. Further observations on this point will be presented when considering the later periods of the disease.

LESSON XV.

Clinical case—Hunterian Chancre—Treatment by excision—Mode of operation—Ulcerating papular eruption—Mucous patches and papules—Treatment—Unfavorable influence of tobacco and alcohol—Good effect of Syphilis on habits of patient—Treatment well borne—Length of time required to keep it up—Time when immunity from danger of communicating the disease arrives—Length of probationary period before marriage—Causes and conditions which occasion pustulation and ulceration in the papular eruptions of Syphilis.

Case VIII. *Initial lesion. Papulo-pustular eruption, mucous patches, and papules, etc.*—G. M., aged 18; bartender; presented with a characteristic specimen of the so-called Hunterian chancre on the superior aspect of a redundant prepuce. *The open lesion* was fully three-fourths of an inch in length by one-third of an inch in breadth, imbedded in a cartilaginous matrix about a quarter of an inch broader and longer, and moveable on the inner reflexion of the prepuce. This had been several months in coming to these dimensions—not quite certain as to time; appearing first as a slight *chafe* and gradually increasing in size and density under a variety of local applications—caustic and sedative. No internal treatment had been resorted to. Glands in groin and cervical regions enlarged and hard. No history of previous veneral disease. General health not very good, but no particular pain or trouble except, latterly, occasional headaches, sometimes in the day but chiefly at night. Examination shows a large, deep red papular eruption rather thickly scattered on the back and breast chiefly, but on the thighs *pustules* were present about the size of a split pea, scabbed and surrounded by a slight inflammatory areola, while on the legs, especially near the ankles, were several *superficial ulcerations* covered with brown scabs as large as a dime, looking very angry and sensitive. Also several points of superficial ulceration between the toes, the surrounding surface presenting a whitish sodden appear-

ance, the secretions very offensive (mucous patches). Besides these were several moist papules, quite elevated, and open pustules on the scrotum (mucous papules and tubercles, simple and ulcerated). The throat was deeply congested, but neither this nor the mouth presented any localized lesion.

Diagnosis: *Syphilis*, in the fourth or fifth month.

Treatment: As the initial lesion was easily movable on the underlying cellular tissue, its enucleation was decided upon. After the parts had been thoroughly cleansed and bathed with a one to sixty solution of carbolic acid, the indurated mass was tightly encircled by a small silver wire, and the tissues beneath it transfixed with a sharp pointed bistoury, cutting out first one half and then the other, thus removing the entire mass. Half-a-dozen turns of continuous suture of black thread closed the wound satisfactorily, and a simple wet borated cotton dressing was applied. The mucous patches and tubercles were swept lightly over with the solid *argenti nitras*, and the patient was put on the usual mild mercurial treatment with an extra tonic. Thus, (Mass. Hyd. 2 grs., Ferri Exsic 1 gr., and pil. quin. bisulph. 2 grs.) one of each thrice daily, and in addition at the same time, a teaspoonful of a solution (made up fresh daily) of the sulphide of calcium (2 grs. to 2 ℥ of water). Rest in bed or on a lounge until healing of the wound of operation; simple but nutritious diet. On the third day, when the stitches were removed, healing was found to be complete. Under the local and internal treatment above indicated, touching the mucous patches and papular daily with the arg. nit., this, with the abstinence from tobacco to which the patient was addicted in all forms, resulted in prompt improvement, and in a short time the open lesions had entirely healed and returned to their original papular condition, and the sulphide of calcium was dropped. Through the indifference and want of sense in the patient the continuation of the mercurial and tonic treatment was very irregular, and its effect was, moreover, much depreciated by occasional excesses in alcoholic stimulants and tobacco. While there was no return of ulceration in the papules, an

ulceration involving both tonsils occurred, requiring local treatment (application of acid nit. fort. at first, then solid argent. nit.) for several weeks, and finally healing, leaving the whole pharynx congested, and at times quite sensitive. A saturated watery solution of the chlorate of potassa had been in daily use as a gargle and mouth-wash from the commencement of the mercurial course (as is usual in such cases), and was continued with occasional applications of a strong solution of tannin and glycerine, when the sensitiveness of the gums became manifest. The mercurial treatment was kept up more or less regularly, as originally commenced, for about a year, only twice or thrice resulting in any perceptible effect on the gums. The papular eruption passed off the body, quite losing the salience within two or three months; but on the thighs, wherever a pustulation had occurred, a faint coppery stain was discernible at the year's end, and on the legs, where the ulceration was most marked, the stain was at that time of a deep coppery hue. The throat was no longer habitually congested, but still it was more easily affected by changes of weather than formerly, and the occasional necessity for his gargle was recognized. The general health of patient had not suffered during this long period of medication. He had become steadier in his ways, and had been for some time perfectly regular in his treatment. The gland enlargements at all points were greatly decreased, but still readily discernible. Of the initial lesion there was not a trace. Even the line of union of the cut surfaces was scarcely to be distinguished from the natural creases or wrinkles in this locality, and there was absolutely no more evidenee of loss of tissue than if a simple foreign body had been removed. The patient now wishing to change his residence to a distant part of the country, desired specific instructions as to the length of time he still required to continue treatment, and what changes, if any, were to be made.

He was informed that the present treatment, or its equivalent, should be pursued for still another year, always in such degree as not to affect the general health

unfavorably. Alternating it from time to time with the iodide of potassium (5 or 6 grs., three times a day), or taking that drug in combination with it—(Mist. Biniodid. Hydrarg.) He desired still further to inquire as to whether or not he was still capable of communicating the disease through ordinary contact, or otherwise, and, if so, when he would probably be free from such danger.

In response to this he was informed that, although he had no open lesion, the contagious element of the disease was doubtless still in his system, and that the complete disappearance of the material evidences of the disease, which included gland enlargements, at all points, would be necessary before the incapacity to communicate the disease could be reasonably claimed. That this, in a case like his, where early treatment had been neglected, and he had suffered from some of the severer lesions of the disease, *immunity from danger of communicating syphilis could not confidently be expected in less than from two to three years from the date of its acquirement.*

That while lesions of syphilis certainly recognized as containing a contagious element, such as the true mucous patch, papule, or tubercle, were rarely, if ever seen, after the first year, but if the contagious element was still in the system, it might escape through an ordinary abrasion, or wound, or sore, of any description, and, if brought in contact with a fracture of skin or mucous membrane on a healthy person, it would communicate syphilis. Thus sexual contact was not without danger of communicating syphilis in such cases, even when no recognized syphilitic lesion was present at any point.

Again, lastly, he desired to be informed as to whether or not he would, as a conscientious and upright man, be justified in looking forward to marriage within the next five years.

This question, virtually identical with the previous one, yet embracing the assumption of a responsibility which, if assumed prematurely or in error, might inflict irreparable evil on a future wife and offspring, could only be fully answered *after the probationary period of a year subsequent to the cessation of the treatment.*

Provisionally, it might be stated that, after the pursuance of a judicious, thorough, and well-borne mercurial course for at least one and a half to two years, and as long after (up to three years) as necessary to secure the complete disappearance of *all gland enlargements due to syphilis and all other evidences of the activity of the disease* then if, for the full period of one more year, on careful scrutiny no evidence of the disease was manifest, consent to marriage would be justifiable as far as the question of *communication* of syphilis was concerned. But every person who has once suffered from syphilis, no matter in how light or how transient a form, is liable to suffer from trouble in various forms, known as the *Sequelæ of Syphilis. The earlier and more thorough the treatment the less the liability to these troubles.* They might be very slight and pass off without recognition even, or be so grave as to threaten life. Such troubles, usually spoken of as Tertiary Syphilitic lesions, constituted a purely personal matter in every case, wholly lacking the contagious element. They are not a necessary part of syphilis, and, when occurring and recognized early, they are eminently amenable to treatment. As before stated, those cases of syphilis early, thoroughly, and wisely treated, during the active period of the disease, escape as the rule. Yet every one once the subject of syphilis should never forget the possibility of such accident, and, whenever suffering from any serious or unusual difficulty, should always communicate the fact to the medical attendant in charge of the case.

Remarks.—The foregoing case presents a good example of the causes and conditions which determine pustulation and ulceration in the papular eruptions of syphilis.

1. The debilitated condition of the patient favoring the suppurative process.

2. The character of his business requiring many hours daily in a standing position, producing additional tendency to congestion in the papules of the lower extremities, and this increasing the suppurative action, resulting in the ulcers about the legs and ankles; papules also becoming mucous patches and ulcers in moist places.

Consideration of the causes which may affect any presenting eruption of syphilis from condition, locality, and business, etc., will suggest judicious modifications in the hygienic as well as the medicinal treatment, and make us hesitate in classifying eruptions of identical origin in a manner tending to obscure the real causes of difference in appearance and amenability to treatment.

LESSON XVI.

Length of time required for complete cure of Syphilis variable: gentle, steady influence of mercury from one and a half to three years—Popular prejudice against mercury not well grounded—Testimony of all authorities in its favor—Destructive lesions of Syphilis belong to the late stage—Treatment not addressed chiefly to the accidents of the active stage, but to the prevention of so-called Tertiary accidents—The Sequelæ of Syphilis—Unwarranted responsibility taken by those who claim safety after a brief period of treatment—Light form of early Syphilis no guarantee against grave late lesions—M. Fournier's views—Prolonged and judicious administration of mercury essential in every case of Syphilis—Exceptions where treatment is not well borne very few—Security against late troubles to be effected in *no other way.*

General remarks.—The length of time usually required for the complete cure of syphilis will vary in different individuals from one and a half to three years, and during all this time the steady, gentle influence of the mercurial in form, dose, and mode of administration as previously stated (page 119) is required until all abnormal cell-accumulations dependent upon the syphilitic influence have disappeared. When after a year and a half to two years *all external evidences of the disease have passed away, and the lymphatic glands can no longer be felt,* or have returned to the condition in which they were found previous to the constitutional stage of the disease, the treatment may be discontinued, but not before, *unless there is some idiosyncrasy in the patient which contra-indicates its use.* If the patients are faithful, sensible, and obedient, in by far the largest majority of cases, they will pass through the trouble easily and happily to a complete cure. A great weight of experience in the plan of treatment which I have indicated (including that of the most distinguished authorities in Europe and America), assures us of the truth of this, and the patients do not suffer from the long-continued treatment in any appreciable way, and that in consequence of it they have the greatest and the *only* security of escape from the so-called tertiary, or late lesions—the sequelæ of syphilis.

I am quite aware that there is a great popular prejudice against the use of mercury in syphilis, and this has arisen in great measure from the abuse of the drug in earlier times, but it has been kept up and intensified by quacks and the ignorant and the unworthy of our profession, who, from causes and motives natural to these classes, refuse to accept the testimony of the learned and experienced authorities, who are now in complete accord in this matter, in every part of the world. Without a show of evidence, or experience, entitled to respect, they deny the necessity of the mercurial treatment, and make the pretence, that syphilis may be as efficiently, and more safely, managed without it. They point to cases thus treated, apparently well of the disease, and claim them, as evidences of the truth of their statements. The very important fact, that syphilis, in its acute period, is a self-limited disease, and will pass away with any sort of treatment, or without treatment, is not made apparent. This is the fact, and while we claim and know, that a judicious mercurial treatment, will hasten the cure of the active lesions and stages of syphilis, it is not on this account, that the treatment is considered *essential.* It is because, more than any other known remedy, it prevents the sequelæ of syphilis—the so-called tertiary and quarternary lesions—which result in destruction of important tissues and organs, vessels and bones. *These accidents do not occur in the early or acute stages of syphilis.* After the apparent disappearance of syphilis, in a few months, or a year or so, there comes a deceitful period of perfect health, perhaps. The disease is perhaps cured; but in two, or three, or ten, or twenty years after, new trouble may arise, no longer contagious, as in the past syphilis, but destructive. It is this, that causes the really important damage. Deformity, disability of body or brain, or both, and, finally, in some cases, death. It is to avoid the danger, present in every case of syphilis, of such results, that the persistent and judicious use of mercury during the acute period of the disease is most important, and is, as we fully believe and know, absolutely essential. We do not urge the administration of mercurials, without a due consideration of the respon-

sibility we take in so doing, without a knowledge of all it has ever done, that is objectionable, or ever may do. It is because, without a systematic, judicious mercurial course, the patient who has once been a subject of syphilis, in no matter how light a form, or how slight or short-lived the manifestation, is in jeopardy every hour, and that nothing but a course of simple mercurial treatment, continued systematically for at least a year, can afford any reliable security. This is the experience of all in our profession who have any title to a respectful hearing, on account of wisdom and experience, and in the present state of our knowledge of this matter it is sufficient to warrant you in insisting upon the necessity of such a course of treatment in every case of syphilis which in the future may present to you for care and treatment.*

Do not understand me to say that every case shall be treated in the same manner, as to the size of the dose or the mode of administration, and without regard to the physical condition and circumstances. A judicious following of the plan insisted on is necessary, *i.e.*, such an amount and such a mode of administration as may be borne without disturbing the digestive apparatus, or materially interfering with the processes of nutrition. As a rule, if the medicine is judiciously administered, the patient will not only not be disturbed, but he will improve in both these respects. How much a more regular and exemplary mode of life, which a proper management of syphilis necessitates, has to do with the improved condition, I am not able exactly to state, but it is nevertheless a fact, that most young men are in

* The distinguished French syphilographer, M. Fournier, says on this point: "Experience teaches us that syphilis, originally mild, may reveal itself sooner or later in serious symptoms, if it has not been submitted, like the more malignant forms, to a prolonged and severe treatment. One has seen, more than once, syphilis of this kind, negligently treated by reason of its apparent benignity, become, later, singularly dangerous in marriage in the double possibility of contagion and heredity. . . . It is to-day proved, that the initial benignity of syphilis does not constitute in any degree an absolute guarantee for the future. Such syphilis which begins well, is not, for that reason, unexposed to a bad end." ("Syphilis and Marriage," by M. Alfred Fournier. London Ed. 1881, pp. 111, 112.)

better health, after a judicious course of specific treatment for syphilis, than before its acquirement.

I do not wish to be understood that no other medicines are necessary, or advisable, in any case of active syphilis. There are idiosyncrasies that must be respected—cases that will not bear the ordinary amount of mercurial without trouble of some sort. These are fortunately rare; but when they present, you must use your ingenuity, so to select the particular form, and combine your most excellent remedy, that it may be borne. You may alternate it with the iodide of potassium, which is also an agent of much value in bringing about fatty degeneration of living tissue, or you may, if you can do better, rely upon this drug in combination with other means and measures which are known to favor fatty degeneration and elimination.

You are likely to meet with cases that will try your temper and courage: that will call into fullest requisition all your knowledge and your experience and your judgment, and, not least, all your common sense, and yet fail to obtain such a toleration of the mercurial as will enable you to prevent the occurrence of the sequelæ of syphilis. These cases will, however, I am glad to say to you, be rare exceptions, and you may have the assurance of the rule, that such a plan of treatment as I have sketched out for you will be well borne, and will not alone aid you, in carrying your patient with comparative equanimity and comfort, through the acute stages of this disease, but, what is of infinitely greater importance, you will give him, the greatest possible security, against an occurrence of the *sequelæ* or manifestations of so-called chronic or tertiary syphilis.

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 *sequelæ*. 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 Quaternary 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, wherecritically 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, mucous, 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 distended or pressed upon by overlying tissues, chiefly occurring on the anterior surface of the long bones, especially of the tibia, and on the external tables of the skull, occasionally involving the internal table and the diploe, and in such cases sometimes disappearing spontaneously without involving the scalp, and without 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 Bäumler, "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 Bäumler, "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 Barensprung 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 Bäumler, "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 excessof 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 gummous 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.

Thus the iodide of potassium, is recognized as capable of most rapidly removing the gummous material, and thus of relieving symptoms: but mercury is found requisite to produce permanent immunity. The iodide of potassium, acts readily in removing recent new formations and cell accumulations, probably through the iodine it contains. The fucus vesiculosus, a remedy in use for obesity, and popularly known as "antifat," owes its virtues to the same ingredient. But mercury is known not only to hasten dissolution and elimination of fatty matters and new formations: it is, besides, the only agent with which we can expect to disintegrate more or less long-standing fibrous obstructions.

In the gummy accumulations of so-called tertiary syphilis, we are obliged to infer that some condition remains, after the removal of this material, which predisposes to, or causes subsequent reaccumulation. What is more likely, than that such condition, consists in obstruction of lymphatic vessels, the office of which is to carry just such material as we find producing the difficulty? Vessels, too, that have been, more than any other structures, involved in recognized troubles during the active stage of the disease. More or less inflammatory action, usually of a very low grade, is recognised at different superficial points in the lymphatic system during this period. The well-known tendency of all such action, is to the deposit of fibrous material—the very material through which cicatricial contractions of other tissues are brought about. Analogous, in a degree, are the conditions which result in stricture of the urethral canal, ten, twenty, or even forty years after the original inflammation: conditions which set in motion a process which culminates, finally, in obstruction to the passage of urine.

It has been claimed that much of the trouble, in so-called tertiary syphilis, may be the result of wi de spread fatty degeneration caused by obstruction c vessels.

It is well known that fatty metamorphosis occ u more easily in some subjects than in others—th dent degeneration is most readily set up in t

debilitated and diseased. It is also claimed by Hutchinson and others that the liability to, and severity of, the lesions of the so-called tertiary period of syphilis "is in proportion to the duration of the secondary stage."

Hence we may conclude, that the varied degrees and forms of so-called tertiary manifestations, depend upon, first, the damage caused during the "duration of the secondary stage," and inferentially in consequence of it; and, secondly, upon the condition of the individual affected, and this quite independently of any specific virus.

Notwithstanding the variety in locality, physical characteristics, and date of appearance, the sequelæ of syphilis practically call for the same remedial measures. Whether it be a superficial scaling or a tubercular eruption, an ulcerative lesion of the integument, an osseous swelling or a necrosis, a tumor in the cellular tissue or in the brain, or in any other organ or locality; whether it be a painless hypertrophy of the tongue or of the testicle, no matter how slight in degree or how destructive, all the lesions of this period are most efficiently treated by some form of mercurial, combined with the iodide of potassium. It is only necessary to know that the lesion presenting, is a legitimate sequel of syphilis, to determine the character of the remedy to be used. The form, the size, and the frequency of dose will be suggested by the circumstances of each case; but the agents through which we may expect the most rapid removal of the so-called "gummous material," upon the presence of which we are warranted in believing that all the trouble depends, are mercury and the iodide of potassium. It is the living material, obstructing nutrition of parts, which, in every instance, produces the destruction of tissue, as well as disturbances of function, that characterize the sequelæ of syphilis. This is the inevitable conclusion to which we are led, by the published results of examinations, made by the most accomplished pathologists of modern times. There is no disagreement in regard to the presence of the so-called "gumma" of syphilis in all such cases. Destruction from the influence of syphilis may occur at any point where lymphatic vessels are

present—in other words, at any point to which nutritive material is carried; not only to the skin, the cellular, muscular, bony, and even cartilaginous structures, but to every part of the brain and nervous system. It will also be found that the behavior of tissues and structures, infiltrated with the so-called gummy material of syphilis, in all forms in which it presents a destructive result, shows nothing, either by inoculation or by any physical property, which proves it capable of acting otherwise than by the mechanical influence of its presence, by interfering with function and cutting off nutrition, through diminishing the calibre of blood-vessels, or possibly effecting their entire obliteration.

The measures, theoretically, most efficient in setting up a tissue metamorphosis in, and removing this gummy material, are those which, practically and clinically, are found most promptly serviceable in curing the late lesions of syphilis. In point of fact, it is so well understood that mercury and the iodide of potassium, when judiciously administered, have a specific influence in curing the sequelæ of syphilis, of whatever form or degree, that whenever a case occurs in which the diagnosis is doubtful it is customary to test the character of the lesion in question, by use of these remedies: failure to relieve, constituting a positive evidence against the syphilitic origin of the trouble.

The administration of mercury and the iodide of potassium, combined, is found most serviceable in the early syphilitic sequlæ, as for instance, in the tubercular eruptions which may appear before the contagious syphilitic principle has been eliminated from the affected organism, that is to say, within the first two or three years from the date of the acquirement of the disease.

These remedies, combined as in the following formula, are usually well borne:

℞ Biniodide of mercury. ..... gr. iii.
Iodide of potassium..... ʒ iii–vi.
Tr. of orange peel.....
Syrup of orange peel..... aa ʒ i.
Aquæ..... ad. ʒ viii.
M.

Sig.—A teaspoonful, thrice daily, after meals.

As the ordinary teaspoon holds somewhat more than a drachm, it will be found that the patient in the above prescription will get one sixteenth gr. of the biniodide, and about 4 to 8 grains of the iodide of potassium at a dose.

The same may be judiciously used in every form, stage, and date of syphilitic sequelæ. If, however, the lesion is one where destructive action is a prominent feature, or the brain or nervous system is the seat of the affection, the iodide of potassium may be increased by the addition of a drop of the saturated solution,

Iodide of potass	ʒ viii.
Distilled water	ʒ viii.
M.	

at every dose, in from a wineglass to a tumbler of milk or water (preferably the former), up to 60 or 80 drops, or until troublesome iodism results. The favorable effect of this treatment may be often seen within a few days, but occasionally no benefit will be observed until the dose of the iodide has reached a very high point, viz., a drachm at a dose, and in cases of cerebral gummata this dose may require to be continued over a very long period—several months, or even longer. In the very largest majority of cases the foregoing plan may be successfully pursued, varying the amount of mercurial, or of the iodide, within the limits indicated, in proportion to the gravity and urgency of the case. The mercurial reaches its limit of efficiency when the constitution becomes slightly affected by it, as indicated by softening or tenderness of the gums and teeth, and should, at that limit, always be stayed. Should the iodide of potassium fail of toleration, the iodide of sodium may be substituted and better borne in the same doses. If still iodism quickly result, as indicated by irritation of mucous membrane of the digestive tract, the tincture of iodine may be administered in doses of 10 to 40 drops in a wineglass of starch as prepared for laundry use, or what in my experience has often been a most serviceable and

agreeable substitute for the iodide of potassium and sodium, viz:

℞ Iodine (crystals)..... gr. xviii.
Iodide of potassium..... ʒ i–iii
Water..... q. s.
Stuart's syrup or plain molasses..... to ʒ viii.
M.

Let stand 12 hours.

Sig. From a dessert to a tablespoonful, three or four times a day, after meals.

Cod-liver oil is always indicated in cases when any cachexia is present, from syphilitic influence, or debility from any other cause. The diet should be simple and nutritious, and adapted judiciously to the condition of the patient. Stimulants should be denied except in cases of especial urgency on account of habitual use and great debility—red wines may be permitted, at meals, in moderate quantity.

The pursuance of the general plan just presented, covers all cases, as far as internal remedies are concerned. Mercurial fumigations may be, and often are, promptly serviceable, especially in the ulcerative lesions, and may be substituted for the internal administration of mercury. Twenty grains of resublimed calomel may be vaporized in a Lee's lamp, placed under a cane-bottom chair, and the patient covered in with a rubber cloak, or even an ordinary blanket, and this repeated three or four times a week—due care being used to prevent taking cold after the operation—and continued until the disappearance of the lesions, or the occurrence of the specific effect of the mercurial.

In regard to local applications for the non-ulcerating forms of trouble, ointments containing a mercurial ingredient, such as the ung. mas. hyd., the ung. hyd. nitratis, or ung. hyd. præcip. alb., or a combination of the oleate of mercury (a 6 per cent solution), with an equal quantity of cosmoline or vaseline, is often serviceable, especially in the scaling and non-ulcerating tubercular eruptions.

For local application to open ulcerations, or losses of tissue, through the influence of the so-called gummy in-

filtration, especially when advancing, pointed, and painful, the powdered iodoform is often promptly beneficial. In all forms of open lesion of syphilitic origin this drug appears to be especially potent in its sedative, antiseptic, and healing properties; perhaps it is the most so of any.

Throughout the treatment of the sequelæ of syphilis the effort to appreciate the causes of any presenting trouble—the influences local and constitutional which may tend to modify, or aggravate, or interfere in any way with the favorable progress of recovery should be unremitting, and not to rely upon or seek after some drug or prescription which is vaunted for the cure of syphilis. Judicious attention to the general health, and to the idiosyncrasies of patients, often brings success in cases which would otherwise result disastrously. Many subjects of syphilitic sequelæ, suffer greatly from the apprehension of communicating the disease to others. They are entitled to the assurance that such troubles are not contagious, and are of purely personal interest after a lapse of four or five years from the occurrence of the initial lesion of syphilis, and this whether a systematic course of treatment has been pursued in the interval or the patient has been quite neglected in this respect. It is quite true that many cases have been reported claiming communication of syphilis five, ten, and even twenty years after the acquirement of the disease, but a single well-observed, well-authenticated case, reported by a competent authority, has not yet come to my knowledge, nor have I ever known such an accident to occur after three years from the date of the initial lesion.

CLINICAL CASES ILLUSTRATIVE OF THE VARIOUS SEQUELÆ OF SYPHILIS.

Case I. W. W.; 28, physician. In December, 1874, after repeated suspicious connections during many months, one day discovered a small sore on his penis. This was treated simply and only locally, and continuing in a sluggish way for a couple of months, when it was proved to be a true initial lesion of syphilis by the

appearance of a well-marked roseolous eruption and mucous patches in the throat. A systematic mercurial treatment was then initiated, bringing the system gently under its influence, and continuing at the point of easy toleration, occasionally pushing it up to sensitiveness of the gums or teeth. When this occurred the iodide of potassium was substituted until all evidences of the mercurialism had disappeared, and then the mercurial was resumed, either in the form of pil. duplex (mass. hydrarg., 2 grs.; ferri exsic., 1 gr.) or pil. proto-iodid. hydrarg. ($\frac{1}{2}$ gr.), three times daily. Under this treatment, borne satisfactorily for eighteen months, no further manifestations of syphilis occurred. The glands in the groin and cervical regions, and also in the epitrochlear spaces, which were characteristically enlarged at the date of discovery of the roseola, had apparently become reduced more than one half in size. It was confidently asserted by the doctor that his glands were enlarged for years before the discovery of the initial lesion, and were now as small as he remembered ever to have seen them. In consequence of this statement, in connection with the entire absence of any congestion of the faucial mucous membrane or any abnormal appearance at the site of the initial lesion or any evidence of syphilis at any other point, all treatment was suspended. After six months, during which there was no sign of trouble of any sort, local or general, attention was called to a cluster of dark red papules (twenty to thirty), about the size of a small split pea, situated on the integument of the left temporal region. They were quite prominent, insensitive, and while firm to touch had a juicy, semi-transparent appearance at the centre. On examination another patch of similar eruptions nearly as large as the hand was discovered under the left scapula. These clusters of apparent papules constituted a typical illustration of the simplest form of the *tubercular syphilide*, one of the most common and earliest of the sequelæ of syphilis. Treatment by a combination of mercury and the iodide of potassium (mist. biniodid. hydrarg., No. , page) was at once *commenced*, and continued steadily, the eruption for

a time increasing in prominence. At two points alone slight ulceration occurred, and a scab about the size of a five-cent piece was formed. After about four weeks the tubercles began to decline, with slight desquamation, and finally to sink below the surface, so that by the third month of treatment the only remaining evidence was a cicatricial depression on the site of each tubercle; the intervening spaces between these points being of a faint coppery hue. Treatment discontinued, but, in a month, several tubercles had returned, and again disappeared under same treatment as before—mild mercurial ointment (ung. hyd. nit. et vaseline, āā ʒ ss)—applied locally for two months. Again, on remitting treatment, in a week or two, evidences of return of the trouble on the side of the forehead were visible; several spots were simply reddened, while small scabs formed on others. The treatment was resumed, and re-enforced by fumigations with the re-sublimed calomel tri-weekly, and this continued steadily for three months, when, no evidence of the return of the trouble presenting, the cicatricial spots distinctly paler than the surrounding skin, and the coppery stain scarcely noticeable, the treatment was again discontinued. August, 1881, the doctor called with the statement that he was about to be married unless some important objection should be raised. The cicatricial depressions were still distinct in both localities and quite white, and no evidence of activity of the former trouble. Glands in the various localities were distinct, but not changed by time or treatment since the cessation of active medication, eighteen months after infection.

Thus a period of five years had then elapsed since any sign of activity of the disease had been manifested, and it was concluded that there was no valid reason for postponing marriage,—always excepting the possibility of some future trouble of local character, but not susceptible of hereditary transmission. Now up to February, 1883, he has had no further trouble; has a wife and child, now eight months old, perfectly well.

Remarks.—As recent painless enlargement and induration of lymphatic glands (first, those directly connected

with the initial lesion of syphilis; and second, groups of glands at characteristic points, such as the cervical and epitrochlear) are the most certain diagnostic signs of the presence of syphilis, in a given case, so their gradual subsidence is the most sure evidence of the efficiency of treatment, and their final and complete disappearance the most satisfactory proof of the complete cure of the disease.

It is, however, necessary to mention that painless gland enlargements are present, in some persons, independently of syphilis, or of any distinct scrofulous antecedents or evidences of this or any other dyscrasia. Hence it becomes important to note the condition, in this respect of any person, presenting with known or suspected initial lesion of syphilis, not only for the diagnostic value attaching to recent painless gland enlargements, but as an aid in determining the proper duration of constitutional treatment. When the glands are in normal condition at the time of inoculation of syphilis—*i.e.*, not susceptible of recognition by the touch—a continuation of the treatment is necessary until their restoration to such condition. On the other hand, when appreciable gland enlargements, are present before the system is invaded by the syphilitic influence, there will be no such guide for the cessation of treatment, and a much longer period will be required, before the patient can be assured of the propriety of discontinuing anti-syphilitic remedial measures.

The administration of mercury by fumigation, as in the foregoing case, while not suitable for general systematic treatment, is an excellent adjunct in certain cases. The necessity of a prolonged feeble mercurial influence is best met by its judicious internal administration, but in cases where this is not well borne, it may be supplemented by two or three fumigations a week—steadily, if practicable, or at intervals, when it appears desirable to produce the constitutional evidences of the mercurial influence. It is especially adapted to cases where eruptive and ulcerative troubles are present. The method of application is exceedingly simple. An ordinary tin basin set upon a couple of bricks, high enough

to admit a small alcohol lamp to be placed under the basin. From fifteen to thirty grains of pure calomel (resublimed to carry off the free hydrochloric acid, which is very irritating to the respiratory apparatus) is placed in the basin over the lamp. This under a cane-bottomed or open-worked chair. The patient sits on this naked, and is then enveloped closely in an ordinary blanket—the lamp is lighted, and in the course of from ten to twenty minutes the calomel is vaporized, and deposited to a greater or less extent on the surface of the body. Still wrapped in the blanket, or slipping on a flannel night-dress, the patient gets at once into bed, and remains through the night. During the fumigation the vapor may be inhaled from time to time to advantage, especially if there are open lesions of the mouth or throat, or if a prompt mercurial effect is desired. If an irritative cough results, inhalation should be very limited, or suspended entirely. Where it is available, the fumigation lamp invented by Mr. Henry Lee of London, and in general use under the name of Lee's lamp, is preferable. In this a small amount of water is evaporated with the calomel. An ample water-proof garment in place of the blanket is also an improvement, but the results are fully much the same as with the simpler apparatus. There is no more danger of taking cold after a mercurial bath or fumigation than after a simple warm bath, but it is desirable to secure a temperature in the room of about 70° F., and to have the patient clad habitually in flannels, light or heavy according to the season, throughout the period during which the baths are administered. When the mercurial fumigation is relied upon alone, and the patient is robust, it may be used nightly, using ten to sixteen grains, and continued for months without producing the apparent constitutional effects. If, however, signs of the mercurial influence appear in the mouth and breath, the fumigations should be promptly suspended. The inconveniences attendant on this mode of treatment are such, that except it is manifestly the only way the mercurial can be efficiently introduced, the treatment by innunc-

tion, or through internal remedies will be found greatly preferable.

Case II. June 10th, 1874, N. L., 46, naval officer, presented with a general and quite profuse, large, ham-colored, papular eruption, slightly scaling at borders, of some papules, chiefly on body and legs and arms, none on face. Mucous patches in the mouth; well-marked gland enlargements in the cervical region, viz. along the posterior border of the sterno-cleido-mastoid muscle and of the trapezius, also in the epitrochlear and in the inguinal regions. On further examination, an indurated lump, the size of a pea, was found in the tissues of the prepuce on the left side. This was said to have come with a small sore some six months previously. Had consulted several surgeons, who thought his sore a simple one. It finally healed, after several weeks' continuance, through simple applications alone, but left a hard kernel on its site. No more attention was paid to the matter until the appearance of the eruption, some three weeks previously, when he was suffering from a supposed malarial attack. Having now some suspicions that his trouble was syphilitic, and not then desirous of confiding in the medical officer of his ship, he waited without treatment until his arrival in port. The case was one of undoubted syphilis in full bloom, and was at once put upon a systematic mercurial treatment. This was carried on now under the care of another surgeon—a most accomplished medical man—for about a year. During this time several consultations were held. The eruption, and all other external lesions, passed off satisfactorily. The chief difficulty experienced was a failure to produce the constitutional effect of mercury by the ordinary means. Three at first, then four, five, and even six pil. duplex (each 2 grs. mass. hydrarg. and 1 of exsiccated sulph. of iron), were given daily, without apparent effect either on the gums or on the digestive apparatus. Patient's general health excellent. Small doses of calomel ($\frac{1}{12}$ gr. every two hours) were given then in addition until gums responded, and at the same time a bilious diarrhœa set in and continued for several days. *When this* and the other evidences of mercurial action

had completely disappeared, the patient resumed the mercurial in the form of pil. proto-iodid. hydrarg., three ¼-gr. pills, three times a day. The treatment was pursued steadily, for about three months, making about twenty months since the acquirement of the disease, and over a year of full and systematic treatment. This course was remarkably well borne, in every respect, and the patient was in excellent general health and spirits. There was now no external evidence of syphilis, and the glands in the various regions were no longer characteristically enlarged. Leaving home for a three months' cruise, the patient returned presenting a thickly studded tubercular patch about the size of his hand, under the left scapula: tubercles size of a grape-seed, and of a pale purplish-red color—with neither itching nor tenderness to touch. Another group, chiefly of large tubercles, covered with brown serous scabs, ranging in size from a pea to a five-cent piece, arranged in a horse-shoe form four or five inches in diameter, appeared on the left thigh; while several small tubercles were scattered irregularly over the buttocks,—thus presenting a well-marked specimen of the so-called tubercular syphilide in its several characteristic forms: 1st. The simple tubercular under the scapula, in an irregular patch, with each tubercle distinct, and of pale purplish hue, with no tendency to ulceration or exudation of serum; this kind disappearing slowly by absorption of the material composing the tubercle, and leaving a distinct depressed cicatrix to mark the site of each. 2d. The tubercles coalescing and extending by a superficial ulceration, exuding serum and forming brownish scabs with a tendency to the horseshoe shape. In the arrangement of this lesion, the scabs, often quite thick, on removal presented a superficial surface of large florid granulations scantily bathed in serum, and bleeding at slight touch. The so-called impetigenous tubercular *syphilide*. 3d. Tubercles from size of a grain of pearl-barley to a pea, varying in color from pale red to purple, irregularly scattered about; also some larger, quite pustular in appearance, some with yellow and others with scabs of quite a dark brown color.

All these had come on so insidiously, so entirely without pain or even itching, that they had only been discovered by the patient to be more than accidental pimples a week or so previously, but had evidently been present a month or more. The treatment was changed from the pil. proto-iodid. hyd. to the mist. biniodid. hydrarg.,* a teaspoonful thrice daily. Scabs poulticed off, and an ointment composed of nitrate of mercury ung. and vaseline, equal parts, applied morning and night. Improvement followed, especially in the open lesions; but after a couple of months, when the first crop had almost disappeared, others appeared on the right calf. Treatment changed to nightly mercurial fumigations (20 grs. calomel), and increase in the iodide of potassium—increasing from eight grains three times a day, a drop for each dose, up to sixty, and taken in a tumbler of milk. After several months, taking from fifteen to twenty fumigations a month, and keeping the iodide at about sixty grains thrice daily, the eruption entirely disappeared, leaving slight, pale, depressed, and corrugated cicatrices on the body, and deep coppery stains on the extremities. The treatment was then omitted, the patient still being in good general health. Capsules of cod-liver oil and iron (Mathey Caylus), administered. After a month or so, other crops, chiefly pustular, came to the surface, apparently *on the site of the former eruptions*, and *came* and *went* for the next six months, getting better in one place and then cropping out in groups of half a dozen or so in another, and this under a systematic treatment as before mentioned, carried out with as much regularity and persistence as was possible under the circumstances. Relaxing it, for even a few days, was followed by more or less return of the trouble, and it was fully two years after the appearance of the first tubercular eruption before the trouble entirely ceased to recur. During this time no points were attacked except those first mentioned—under the scapula, and on the thigh and buttocks, and soon after on the right calf; after this the *recurrences were in the same*

* See formula, p. 92.

points or in their immediate vicinity. During the entire period covered by the treatment the patient was most of his time at sea, under favorable hygienic conditions, and living a temperate and regular life. Within the last year (1882) the above-mentioned person was seen in consultation for what was supposed to be a malarial neuralgia. There was no history of any recurrence of trouble which could be reasonably attributed to the syphilitic influence for the previous five years. The neuralgia, which was chiefly in the muscles of the spine, after resisting treatment by the iodide for several weeks, finally passed away under the influence of a month's sojourn in the tropics.

Remarks.—The chief interest involved in the appearance of an eruption, after the eighth or tenth month of syphilis, is as to whether it is to be accounted as a sequel of the active disease, or is an evidence of the active presence of syphilitic cell material in the organism. After the first general papular eruption, which, as a rule, appears between the third and the seventh month, and is more or less symmetrical in its distribution, groups of papules may develop on the shoulder or arm or back or forehead, which, although usually darker and more likely to assume an annular or crescentic form, may present all the physical characteristics of the papules of the earlier general eruption. These are known as the *recurring papular syphilides*, and are supposed to be the result of a release of accidentally imprisoned infective cell material from lymphatic glands, in the immediate vicinity of the eruption, and to indicate a continued activity of the contagious element.*

It is quite impossible, in the present state of our knowledge of this matter, to make a positive diagnosis in cases of doubt, until sufficient time has passed to observe the

* "The secretions of syphilitic lesions are found to consist of a serous fluid containing numerous shining granules or molecules, which are masses of protoplasm or germinal matter holding the contagious properties of syphilis. These microscopic bodies are probably taken into the circulation by the *lymphatics* and conveyed over the body." (Bumstead and Taylor on the Venereal Diseases, fourth edition. Henry C. Lea, Phila., 1879. P. 443.)

manner in which the tissues occupied by the eruption, are affected by the presence and the final absorption of the material causing it. Thus the papule, having its origin in an accumulation (proliferation *in loco?*) of germinal cells (commencing, according to Kohn and others, always in a papilla cutis), has several characteristic points. 1st. In certains cases the cells thus crowded together "are not destined to become permanently organized, as they degenerate and disappear, or assume a dull granular appearance, undergo fatty degeneration and are absorbed. Or they may become heaped together in the form of detritus and form pus." *

Thus they either "undergo fatty degeneration and become absorbed," *leaving no loss of tissue to mark their site*, or they become pustules. The tubercle, on the other hand, is made up of the so-called "*gummy*" or germinal material, identical with that found in the lymph channels; arrested by localized obstruction of such channels; this localized accumulation causing absorption of the tissue in which it is located, finally itself undergoing fatty degeneration and absorption, a depression or cicatrix is left which is a sure diagnostic mark of the uncomplicated syphilitic tubercle.† These so-called "gummy exudations," characterizing as they do all the sequelæ of syphilis (the secretions of which are non-contagious), form the distinguishing feature between syphilis, as a contagious disease, and its sequelæ. Their occurrence, in whatever locality or form, calls for change or modification in the treatment. Iodine and the iodide of potassium having been found to possess a peculiar power in causing the fatty degeneration and elimination of the so-called gummy material is then found promptly efficacious in aiding in the cure.‡

* Caractères cliniques et histologiques des Syphilis, par Moritz Kohn, *Wiener Wochenschrift*. Caractères, 1870. No. 55, *Archives Générales de Médecine*, March, 1872.

† See Van Buren and Keyes, Genito-Urinary Diseases, with Syphilis, page 583. Appleton & Co., New York, 1874.

‡ As these processes are quite distinct in their origin they may be present at one and the same time, and thus it may occur that although the tubercular eruption—a sequel of syphilis—is present, the *contagious material represented* by the papule may still exist in the organism; the

The punctate form of the tubercular syphilide, as first described, is usually the earliest of the syphilitic sequelæ, and rarely appears after the third year. The superficial ulceration, with a tendency to the crescentic, or horseshoe arrangement, is next in order, and, is occasionally associated with it, as in the foregoing case, but may occur as late as the tenth and even the twentieth year after infection, and is likely to be especially severe and extensive in cases of chronic alcoholism.

Tubercles occasionally appear singly, or in small groups, on the face, especially on the alæ nasi, and, ulcerating superficially, become scabbed over and pursue a very sluggish course, often for many months, and are not unfrequently mistaken for simple lupus. Under favorable hygienic conditions, all these forms yield promptly to treatment: locally, by iodoform, or the ung. hydrarg. nitratis and vaseline; and internally by combination of mercury and the iodide of potassium, as in the misturæ biniodid., and additional iodide of potassium in doses increasing by one drop at each dose up to 60, thrice daily, if well borne, always taken well diluted—in half a tumbler, and finally a tumbler of fluid, preferably of milk. In this way the stomach is rarely rebellious to the maximum dose.

It is a fact well understood by all who have experience in the tubercular forms of syphilis, that local measures, while apparently hastening the cure, are almost wholly useless, except in combination with mercury and the iodide of potassium. It is also equally appreciated that while prompt benefit, is almost certain to follow the use of the iodide of potassium, recurrences of the trouble are much more frequent, than when this

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limit of contagion in acute syphilis having been ascertained in the very greatest majority of cases not to exceed three years. Bearing this in mind, it may then be said that although the presenting lesion being tubercular and by its origin illustrating the non-contagious stage of syphilis, yet it cannot be claimed as free from virulence (*i.e.*, power of contagion) until two or more years have passed and all gland enlargements dependent upon syphilis have disappeared; but that after such proof of the termination of the acute stage of the disease, the presence of such tubercular eruption would not indicate a power to transmit syphilis by direct contact or through heredity.

remedy is used in combination with a mild mercurial treatment, either internally or by innunction or fumigation. Such behavior, which is recognized as a clinical fact, is most significant of the conditions which demand treatment. The accumulations of the arrested germinal material, or so-called gumma, as the immediate recognized cause of the local lesions, are readily acted upon by the iodide of potassium, (the weaker agent in producing tissue metamorphosis), while the permanence of results is better secured by the mercurial, which has the greater power to cause a modification, if not a complete metamorphosis of the material causing the obstruction. In the absence of absolute proof, as to the degree and quality of the obstruction in the lymph channels, it may be possible, that this is due, in some cases, to actual closure by cicatricial deposit, such as is seen constricting the parenchymatous structure of the liver, the testicle, etc. If this is the fact, removal of such obstructive material by any sort of treatment is scarcely probable. This would account for the repeated recurrences of trouble, temporarily relieved by treatment, and constituting a form of what is termed a syphilitic dyscrasia. It may also be possible, that, where such cicatricial obliteration of lymph channels is not extensive, the circulation is temporarily relieved by elimination of the excess through treatment, or through fatty metamorphosis, *sua sponte*, until the dilatation of adjoining or subsidiary efferent channels shall afford permanent relief. It is a clinical fact that, as in the foregoing case, relapses continue to occur for years even, and the case is at last permanently cured by efficient treatment: while in others, the troubles, with or without treatment, remain until the termination of the life of the patient, notwithstanding the most judicious care.*

* However much the explanation of gummous collections may need absolute microscopical demonstration, it is conceded by all modern pathologists: 1st. That the so-called gummous material constitutes in some way the sum and substance of all the tertiary and quarternay lesions: in other words, *the sequelæ of syphilis*. 2d. That this material does not differ microscopically in any appreciable way from the normal germinal elements, such as are found in all the lymphatic gland, channels, and spaces in the human organism. If, then, this material present to a certain degree in all

CASE III. W. M[illegible]. [illegible]
inarily healthy; had a [illegible]
of syphilis at [illegible] years of age. [illegible]
general papular eruption [illegible]
ment desultory, [illegible]
when he came under my [illegible]
pil. duplex mass, [illegible]
well borne, and [illegible]
steadily; occasional [illegible]
when slight evidences [illegible]
the exception of several [illegible]
and slight ulceration [illegible]
there were no [illegible]
gland enlargements [illegible]
patient at this point was [illegible]
potas. iodid. [illegible]
ull thrice daily, and it was [illegible]
ollowing six months. During [illegible]
pparently in perfect health. [illegible]
lence of syphilitic trouble, was the [illegible]
greatly enlarged. Lymphatic glands [illegible]
oints. As these glands had [illegible]
luring the last six months of treatment [illegible]
n the absence of knowledge of their [illegible]
he accession of syphilis, that they [illegible]
athological significance, and all treatment [illegible]
ended. During the following [illegible] years, [illegible]
f syphilis having been manifest, permission [illegible]
'as accorded. Child born a year after [illegible]

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e tissues—for all tissues are supplied with lymphatic spaces or channels—comes localized in excess at certain given points, this [illegible] cur by the obstruction of such channels or spaces. Whether we can t demonstrate this microscopically or not. It is within the last ten ars that even the existence of lymphatic vessels in the most important ts of the body—as, in the eye, in the bones, etc.—has been denied by ding and accepted authorities. But since then it has been proven by in. Ludwig, Schweigger-Seidel, and others, that there is not alone a genus supply of lymphatic vessels to the eye and the bones, etc., but even illages are abundantly furnished with them. Accepting thus a legitie deduction from known facts, which furnish logical reasons for the t and measure of treatment, we may wait hopefully for the microscop advances which shall scientifically establish our knowledge of the ct mechanism of the late lesions of syphilis.

child healthy—and so continued. Two years subsequent to the birth of the child, and thus six years from the acquirement of syphilis, patient presented with a swelling over the lower portion of the sternum, about the size of half a lemon; quite firm; slightly tender on pressure. First noticed, about half its present size, about a month previous. Diagnosis: *gummy tumor*—a sequel of former syphilis. Treatment: iodide of potassium 8 grs., biniodid. of mercury one sixteenth, three times a day. As the patient was otherwise in good health, nothing further was prescribed. Without any local application, under the above-mentioned treatment, the tumor declined rapidly, and at the end of three months every evidence of it had completely disappeared, and all treatment was discontinued. A little more than ten years have passed, and no further trouble of syphilitic nature has occurred, either to the patient, his wife, or his children, of which latter he has several.

Remarks on Case III.—Claims for the non-contagious character of syphilitic sequelæ, find corroboration in this case. Prompt effects of the specific treatment remove any possible doubt as to syphilitic origin of the trouble. The cessation of treatment on the entire disappearance of the tumor, is in accordance with the usual practice in such cases, but it must not be forgotten that such tumors are likely to return, or that similar accumulations may occur at other points. And while, as in this case, a prolonged immunity may be acquired, even escape from any further syphilitic sequelæ, yet such an accident, indicating failure of treatment during the active stages of syphilis to completely efface the damage then done, must make the patient and his physician anxious and watchful for possible similar developments in other localities. Especially should this be borne in mind when obscure troubles of nutrition or of the motor or sensory apparatus are recognized.

GUMMA OF THE TESTICLE.

CASE IV. J. V., 65; lawyer, in good general health. *Presented* with an enlargement of the left testicle.

had a few weeks previously attracted his attention by its weight, and not from any pain in it. The size of the organ, which was ovoid in shape, was four inches in its vertical and three in its horizontal diameter, quite firm and insensitive to the touch. A small amount of fluid was recognized in the tunica vaginalis. There was no history of any urethral disease or any mechanical injury either to the testicle or the surrounding parts; but there was a tolerably clear history of syphilis at the age of 24, viz.: a sore coming on the penis fully three weeks after a suspicious connection, which remained for some time, finally healing under the internal administration of mercury. He married a few years after; had several children; also grandchildren; not one of whom had ever any recognized signs of syphilis. No recognized sign of syphilis had appeared in the patient from the date of the healing of his sore, to the occurrence of the swelling of his testicle, forty years after. The tumor, both as to its accession and its physical characteristics, was like a sequel of syphilis. Freedom from pain, and from irregularities in shape; freely movable under the scrotum: unconnected with any tubercular or cancerous antecedents. About four drams of serum were drawn from the tunica vaginalis and the smooth surface of the tumor, and complete freedom from fluctuation was made more manifest. Treatment by the mist. biniodid. internally, was commenced, together with ung. hydrarg. mit. externally. Subsidence of the tumor commenced within a fortnight, and at the end of six months the testicle had resumed, nearly or quite, its original size.

Remarks.—The absence of all recognized manifestations of syphilis, as in the foregoing case, is not without precedent. Early constitutional syphilis varies in its intensity as much as any other known disease. The roseola, even if present, may readily escape observation. The papular eruption may be confined to half-a-dozen points, or even a single spot on the body, or a single mucous patch or tubercle, which shall pass away without treatment or recognition, and yet syphilitic sequelæ may

occur, the effects of which may prove as grave as when every phase of the active period presents the typical manifestations. Once recognized as syphilitic, no matter how slight the lesions of the initiatory period or that of general infection, the treatment should be as systematic, as thoroughly considered and carried out, as when well-marked in all respects. It is only in this way that we gain the great security against the occurrence of sequelæ, and if occurring, secure the lightest forms of trouble. Unfortunately, relief from the immediate and appreciable accumulations constituting sequelæ (the so-called gummy tumors of syphilis) does not always mean cure: recurrences, especially of the accumulations in the testes, are not uncommon, as in the following:

CASE V. P. P. S. This patient gave a clear history of the characteristic eruptions of active syphilis occurring twenty years ago. Good health up to five years, when his right testicle became enlarged to the size of his fist. He stated that under occasional treatment of iodide of potassium the testicle grew very much smaller; in fact, he thought his difficulty almost cured, when the swelling returned. On examination, a large quantity of fluid was found in the tunica vaginalis. Four ounces being drawn off, it became evident that the tumor remaining, while not larger than a normal testicle, was irregular in shape—nodulated—especially at the lower portion, where it was of cartilaginous hardness. The upper portion alone was sensitive to pressure. It thus became evident that a fibrous degeneration of the entire inferior portion of the testicle had taken place, and that its secretory structure was almost entirely destroyed; the sensitiveness to pressure indicating the portion which had thus far escaped.

Remarks on Case V.—In the post-mortem examination of similar cases, it is found that two forms of trouble frequently (and always in long-standing cases) unite in the so-called chronic orchitis of late syphilis, the one usually earliest to manifest itself being general infiltration or a localized tumor at one or more

nts in the substance of the organ. This accumu-
on is found to be made up of materials charac-
istic of the "*gummy tumor*" occurring in other
alities. Subsequently to the occurrence of these
ıors a marked growth of fibrous tissue is found to
e place, *apparently commencing in the lobular spaces*,
gradually encroaching upon the seminal lobules
l they are destroyed. The elements of new forma-
, traversing in this same way the substance of the
re organ with a cicatricial net-work, the contrac-
which naturally follows often results in the total
ruction and almost complete disappearance of the
an. This explains what we find in the present in-
ıce. The history points to a general so-called
nmy infiltration, involving, probably, the epididymis
the body of the testicle, and a later development
ibrous tissue, which has, by its subsequent contrac-
ı, reduced the organ to its present indurated and
ophied condition. It is interesting here to recall
fact, made prominent by all authorities on syphilis,
: cicatricial deposit and its subsequent contraction
strangulation of the parenchyma of the testicle,
ılting in true atrophy, is characteristic of the influ-
e of late syphilis, and occurs not alone in the testi-
but notably also in the liver and the kidneys. The
lency to formation of fibrous tissue has also been
ognized (from apparently the same causes) at other
ıts, as in the larynx, intestine, etc. Ranvier and
nil significantly remark* that all profound syphilitic
ons of the mucous membrane occasion a prolifera-
ı and a production of connective tissue usually much
ater than in diseases due to other causes. It is a
l ascertained clinical fact that gummy infiltration
cedes the stage of cicatricial deposit, and that while
ı the gummy tumor and cicatricial atrophy, are
n met with in the same testicle, general enlarge-
ıt *first occurs;* then comes the recognition of local-
l deposits of gummy material, and later, often sev-
. years after, compression, due to contraction of

* "Patholog. Histol.," page 399, 1880.

cicatricial deposit, finally takes place, and atrophy of the testicle results. The clinical evidences are strongly in favor of considering the gummy exudation as the *basis* of the cicatricial deposit, and the different subsequent conditions, as but stages of the same pathological process, terminating finally in atrophy, through cicatricial contraction. In favor also of this view, and as affording a possible explanation of the cause and mode of formation of the cicatricial deposits in other organs, due to late syphilis, we may recall the statement of Rindfleisch in regard to the most favorable conditions for the development of new cell formations, namely, "Contact with tissue and *relative rest* of the emigrant cells induces them first to essay their amœboid mobility, and then to division."* But *absolute* rest, *stasis* of such cells, or of any cells, is necessary for their *development into tissue*. All fibrous or connective tissue is said to be made up of the spindle-shaped or connective-tissue cells and fibrillæ which are simply a higher stage of development of the lymphoid cells and corpuscles, evolved from and circulating in and through the lymphatic organs, spaces, and vessels. This is exactly the essential material of which *cicatricial tissue*, wherever found, is made up, and this is exactly the sort of tissue which has caused the mischief in this testicle, and which by authorities is accepted simply as one of the many mysterious phases of the so-called tertiary period of the disease. Only a single condition is lacking, however, in order to place this cicatricial deposit, due to syphilis, in the line of ordinary pathological conditions, and that is, one which will account satisfactorily for the presence and quantity of embryonal or formative cells in the localities where the cicatricial tissue is subsequently developed, and the causes of their enforced accumulation and stasis in those localities, during a period sufficient for the formation of such tissue.

Ludwig and Thomsa† claim to have demonstrated a

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* Rindfleisch, "Path. Hist.," p. 94, sec 77.

† Stricker, "Human and Comparative Histology," Sydenham ed., vol. i., p. 311, *et seq.*

very generous distribution of lymphatic channels in the testicle, the liver, and the kidneys, organs in which the cicatricial contraction due to the influence of late syphilis is chiefly found. Especially are the lymphatics claimed to be numerous and ample in the testicle, where injections performed upon dogs have shown that lobular spaces are simply lymph sacs or lacunæ. In point of fact, the seminal lobules are literally inclosed in lymph chambers, and the reticulation of lymph channels not only surrounds, but permeates, every portion of the testicle and its appendages. The same rich distribution is shown also in the liver and kidneys. Having, then, the material necessary for the formation of cicatricial tissue, and in localities where it is known to develop, the essential condition to produce it, is an enforced stasis of cell elements, through interference with the lymph circulation of these organs; in short, *obstruction of the lymph channels* at various points.

GUMMY TUMORS OF THE INTEGUMENT AND CELLULAR TISSUE.

CASE VI. W. W.; 49. Presented three large, sharply cut, apparent ulcerations on the inner aspect of the right leg just below the knee; two about two inches each in diameter, quite circular, and a third about two inches in length, formed by the union of two about an inch in diameter. All had penetrated the integument completely; the surrounding integument was only slightly inflamed. Two small tumors just under the integument on the outer side of the right thigh, movable under the skin, painless, and another nearer the knee, attached to the integument, and distinctly fluctuating. Here were, then, three characteristic stages in the progress of gummy lesions of the integument. There was a clear history of syphilis irregularly treated about fifteen years previously. Alleged occurrence, four or five years previous, of large sores with heavy black scabs upon them, chiefly on the legs and arms, which were cured by iodide of potassium. Cicatrices paler than the surrounding skin were found corroborating the statement.

This patient was in low general condition from dissipation, insufficient nutrition, and bad hygiene. He was given nutritious diet, with cod liver oil. A course of iodide potassium with biniodide hydrarg., the former to be gradually increased by the addition of a grain at a dose, taken largely diluted with milk, up to sixty grains. Under this treatment and care, with local applications of iodoform in powder to the ulcerations, marked improvement at once took place, and in about two months healing of the open lesions was complete, and the tumors were apparently absorbed.

Remarks on Case VI.—As a rule, to which exceptions are rare, the ulcerative forms of syphilitic sequelæ occur in those cases which have either been imperfectly treated or not treated at all in the early active form of the disease. It is also true that, while the gravest accident *may* occur to those who have had the lightest forms of early manifestations, the destructive sequelæ are *usually* associated with a history of profuse and recurring eruptions in the early stages of the disease. It will be found that whatever the form or locality of the lesion of late syphilis, the ability to assimilate large doses of the iodide of potassium without interfering with the digestion, is a guarantee of rapid benefit from its use. Very great care, then, is necessary to introduce this potent remedy so gradually and so well diluted with milk or some agreeable tonic diluent, that the digestive apparatus may be educated to tolerate the drug. Fortunately, in cases where it is required, iodism rarely occurs in any troublesome degree when sufficient care has been exercised in this respect. The substitution of pure iodine in plain molasses, or with starch, has been previously suggested, when the iodide of potassium is not tolerated.

PSORIASIS OF TONGUE, FOLLOWING SYPHILIS.

CASE. N. M. W.; 30. At 22 had an initial lesion of syphilis, which remained unhealed under local applications up to the fourth month after infection. It was then excised. Healing took place by first intention;

several small mucous patches were then present in the mouth and on the tongue; the superficial lymphatic glands were enlarged and indurated at all usual localities. The patient was put upon pil. duplex (hyd. mass. 2 gr., ferri sulph. exsic. 1 gr.) thrice daily, and this was continued, somewhat irregularly—omitting several times for several weeks, whenever some tenderness of the gums appeared—for a year and a half. No intercurrent lesions during this time. Glands still somewhat enlarged; mist. biniodid. hyd. (potas. Iod. 8 grs., hyd. biniodid. $\frac{1}{16}$), a teaspoonful as a rule thrice daily, but not seldom neglecting it, for the following six months, when no further evidences of syphilis having developed—the patient in excellent health—treatment was suspended. Not the least sign of syphilis for the next four years, when slight soreness of the right side of the tongue appeared, chiefly along the edge. This was attributed to the excessive use of cigarettes, to which the patient was addicted. On ceasing this there was immediate improvement in regard to the soreness, but a pale, thin pellicle, appeared in two spots on the tongue, about the size of a split pea, a thin film along the edge, and a patch of the same, as large as a dime, on the inferior surface of the same side, and all within a few days. The patient was put again upon the biniodide mixture, and took it faithfully for several weeks, making applications locally with a saturated solution of nitrate of silver, every day or two, without any very decided benefit. In point of fact, the spots on the tongue became slightly elevated and whiter, apparently from accumulated epithelium, giving the characteristic appearance of a simple psoriasis of the tongue. An application to these spots with Paquelin's gas cautery, the platinum point at a white heat, was carefully made, and the internal treatment continued. The result was an immediate improvement in the appearance of the spots, and after the second application, about a week after the first, the patches were quite freed from the pellicle. The patch under the tongue was then treated in the same manner, carrying the cauterization as far as possible through the thickness of the pellicle, subse-

quently simply brushing the platinum point quickly over the surface. Altogether, half-a-dozen applications were made in the course of four weeks, at the end of which time there was complete disappearance of the pellicle, and scarcely a trace of the lesion remained. The internal treatment was suspended, and at the end of three months, there was no indication of return of trouble.

LESSON XVIII.

Significance of psoriasis of the tongue, following syphilis; often mistaken for mucous patches of the active stage of syphilis, and when occurring after the first or second year, called chronic mucous patches. All lesions of late syphilis, of the same significance, as to their contagious property. All caused by accumulations of so-called gummy material, or non-contagious lymphatic matter. So-called chronic mucous patches of tongue usually caused by use of tobacco. The authority of M. Fournier, favoring the view of their capacity for contagion. Case quoted by him in illustration. Analysis of M. Fournier's case, and arguments to show its failure in proving the inoculability of late chronic lesions of the tongue, and also from Fournier's work and other valued authorities to show, that no form of syphilitic lesion, is contagious after the fourth year. This position supported by the teachings and experience of M. Fournier, in his work on syphilis and marriage. Marriage proper after a certain period. Strong statements of M. Fournier to this effect. Syphilis constitutes only a temporary bar to marriage. Fournier adduces eighty-seven cases in proof of this. Tertiary lesions shown not to be capable of transmitting syphilis. Exceptions claimed, lacking authentic proof. Fournier's case, cited to prove infection from lesions present after three or four years, inadmissible. Analysis of evidence. Case adduced in rebuttal. Case cited to illustrate sources of error. What is needed is a guide, as to time, when syphilitic patient may be considered free from danger of communicating the disease. Facts and arguments to show that this time, is not necessarily more than three or four years. Sources of error in claiming infection beyond this time. Cases in illustration.

Remarks.—The foregoing case would, I think, be best characterized as a psoriasis, induced by tobacco, causing irritation of a surface predisposed to such action, by the previous occurrence of local syphilitic lesions at this vicinity, during the active period of the disease. It has been in my experience to see quite a number of such cases, with or without superficial ulcerative lesions, and which had been classed, by previous medical attendants, as chronic mucous patches, with the distinct understanding that they possessed the power of communicating syphilis. It should be understood that mucous patches, are simply papules, occurring on mucous membrane, and cannot exist as specific lesions after the active stage of syphilis has passed. It may, I think, be safely stated, that, after the third, and at

farthest after the fourth year, lesions of the mouth of whatever character,—either *superficial glossitis*, which is recognized by oval or circular, small or large patches, or tubercles of thickened sub-mucous cellular tissue; or the *deep glossitis*, which causes a general hyperthropic thickening,—are due to accumulations of gummy material, so-called; and, whether accompanied by ulcerations, superficial or deep, are of the same nature as all the other lesions of so-called tertiary or late syphilis, which have been incontestably proven to be free from the contagium of syphilis. The occurrence of superficial erosions of the tongue, from a few to many years after the termination of the active stage of syphilis, is not infrequent. The habitual excessive use of tobacco, has seemed to me more likely to produce superficial ulcerative lesions, than where syphilis has not been experienced, especially where the lesions of the active disease have occurred in the mouth. Often, in such cases, simple abstinence from tobacco, will cause such ulcerations to heal, without further trouble. In other cases, the iodide of potassium acts quickly to relieve, but, in all, the apprehension of communicating syphilis is an ever-present horror, and when, as is sometimes the case, such ulcerations, either from vices in the digestive processes, or from permanent cicatricial disturbances of the affected tissues, continue for years, the condition of such patients is sometimes, indeed, pitiable. It is true that we have the weight of an authority, so great as M. Fournier, in support of the *possibility*, nay, the probability, of infection of syphilis for many years, or, indeed, indefinitely in such cases, as is shown in the following, quoted from his popular work on "Syphilis and Marriage." * "These lesions are always superficial, limited, and mild. They are readily cured by cauterization, aided by some local care; but they are only cured to be reproduced,—to renew themselves incessantly. In themselves they are of

* "Syphilis et Mariage." Leçons Professées a l'Hopital Saint Louis. Par Alfred Fournier, Professeur a la Faculté de Médecine de Paris, Médecin de l'Hopital Saint Louis, Membre de l'Académié de Médecine. Paris, 1880. Page 122.

no importance, but they become only the more dangerous in respect to contagion. Such, for example, is the case of a patient whom I treated some time ago. This young man had been infected with a syphilis, five years before, which one could fairly call mild, since the initial chancre was only followed by a roseola, a palmar syphilide of slight intensity, and a sore throat. He treated it almost from the beginning sufficiently well; several times he submitted, under my advice, to a strong mercurialization (15 to 20 centigrammes of proto-iodide daily). Well, in spite of this treatment, and in spite of all my efforts, the patient (who, by the way, is a smoker: a circumstance essential to note) has not ceased to be affected, *during a period of five years*, with lingual syphilides *almost continuously*. I cured him of one breaking out; one or two months later a new one attacked the tongue; then came a new treatment, followed by a new cure; then reappearance of the malady, and so on. To be brief, I always cured him, and 'it always began again,' to use his own expression. Now that he has completely given up tobacco, at my earnest solicitation, the eruptions become less frequent, but have not altogether ceased; and quite lately I have again seen him with syphilis coming on the back part of his tongue. Now, what would have happened if, relying on the mild nature of his disease, and satisfied as to the treatment followed, I had allowed the patient to marry between the two outbreaks of such symptoms? What would have happened, I need not predict theoretically, because I have had a practical demonstration. This young man took as a mistress, last year, a woman who, till then, was perfectly healthy: exempt from every venereal symptom. Some weeks later he brought her to me, affected by an indurated labial chancre, manifestly received from the lingual syphilides of the patient."

This case is presented as a typical one, to illustrate the possible persistence of contagious lesions after many years, notwithstanding the disease is of mild form, and has been systematically, persistently, and efficiently treated from "almost from the beginning."

It will at once be seen, that, as such lesions of the mouth may appear, several years after the apparent cure of syphilis, no real guarantee against the danger of communicating syphilis, for a very long period of years, can ever be given, and if such guarantee cannot be given, *no man, it appears to me, has ever a right to advise, or even to consent to, marriage of a person who has once had syphilis.* It becomes a matter of vital importance to know, whether or not, there is a form of late lesion of syphilis, which, unlike all other late lesions, still retains the power of infection. M. Cornil says (p. 34, Am. ed. 1882): "The inoculations made by Diday *render it probable that the tertiary lesions are not inoculable, and consequently not contagious.*" Bumstead & Taylor (ed., 1879, p. 443): "*Hence we consider the blood and the secretions in tertiary syphilis innocuous.*" Hill & Cooper (London, 1881, p. 11), say: "*All attempts to propagate the disease with secretions taken at this period have failed.*" Baumler says of the cessation of the innoculable stage of syphilis: "This takes place in the majority of cases, *and at the expiration of eighteen months or two years the infection is entirely exhausted.*" (Ziemssens's "Encyclopædia," Am. edition).

The most complete and irrefragable evidence, in favor of the view that the injective power of syphilis is self-limited, and does not extend over a period of more than three or four years, is that presented by M. Fournier, in his recent work on "Syphilis and Marriage," adduced to justify his previous statement of opinion, that persons having had syphilis *under certain circumstances may marry.* The statement, a very strong one, appears on page 18 of his work, thus: "Then, yes; a hundred times, yes: one may marry after having had syphilis, and the results of such a marriage, contracted under these conditions, may end absolutely happily, medically speaking. This I affirm, and fearlessly proclaim from the house-tops, after having concientiously studied this grave question, both clinically and socially, and after having religiously consulted numbers of observations of my own and others. It is for *me an absolute* fact, an undeniable truth;" and at page

15, ibid.: "The truth is that, with some very rare exceptions, syphilis only constitutes a temporary bar to marriage." In support of this positive opinion he says,* "For my part alone, I have in my hands, to speak only of written facts, eighty-seven observations relative to syphilitic subjects, undoubtedly syphilitic, who, having married, *have never communicated to their wives the least suspicious phenomenon; and, moreover*, these eighty-seven have produced among them a total of one hundred and fifty-six *absolutely healthy* children."

In examining the clinical records of these eighty-seven cases, given at page 231, *et seq.*, of his work, we find that thirty-six out of this number of men who were thus proven free from any power to transmit syphilis, either by direct contact or by heredity, were subjects of late or tertiary lesions of syphilis *after marriage*—some before and some after the birth of children.

These lesions comprise almost all the accidents of late syphilis, thus: gumma of penis, palmar psoriasis, dry tubercular syphilide, gumma of velum paluli, cerebral syphilis, papulo-tubercular syphilide, and costal periostosis, cerebro-spinal symptoms (evidently of specific origin), diplopia, passing attacks of hemiplegia, nasal syphilides, ecthyma of legs, specific tibial periostitis and glossitis, specific sarcocelele, nasal ulcers, ulcerative laryngitis, papulo-squamous palmar and plantar syphilides, sclerous glossitis, papulo-scabby syphilides of circinate form, tubercular ulceration, syphilide of nose.

This would appear to be sufficient evidence that M. Fournier, presenting these cases to show that they lacked entirely the contagious element, was a firm believer in the non-transmissibility of syphilis from late lesions.

Another case, quite in line of the first case cited—which seemed to prove indefinite capacity for infection, appears inadvertently to have slipped into M. Fournier's 87 cases. This is Case XLIX. (p. 237 ibid.). Thus runs the clinical history: "Hard chancre, roseola palmar, psoriasis, syphilides of the mouth; iodide treatment; no mercury. Married four years after infection; wife remained free;

* Fournier, "Syphillis et Mariage." Ibid., p. 16, also p. 231.

two healthy children. *After the birth of the second child the husband infected the wife through a syphilide of the mouth; pregnancy the following year, which ended in a miscarriage.*"

Lacking any other explanation from M. Fournier, this case would, then, appear to be, like the first case presented, one where a late lesion of the mouth had communicated syphilis, and this at least seven years after the original infection, and even after several years of marriage, during which the wife had escaped, and two healthy children had been born. Exceptions of such vital importance—the first cited as a typical exception, and the second supporting it with great force—in order to be accepted, should, it appears to me, be quite free from reasonable doubt, on all essential points. Let us examine them as critically as these meagre details will permit.

In the first case, after a mild and thoroughly treated syphilis, in a patient who was an inveterate smoker, lesions of the mouth recurred constantly, for a period of five years, influenced only temporarily by treatment—promptly benefited by leaving off his tobacco. Physician (M. Fournier) fears that this lesion is an exception to the lesions of syphilis which occur at so late a period.

M. Fournier's experience in regard to inoculability, at so late a period, are given in his work, as at p. 101, where he says: "In those cases where I have seen syphilis pass directly from the father to the child, without contamination of the mother, *I have always* observed, that the paternal infection, was of a comparatively recent date, that is to say, *had* not exceeded the maximum of *three or four years.* Beyond that time I have *never* firmly established the transmission of syphilis by paternal heredity."* Again at page 132: "A patient comes to us in the full secondary period, and we submit him to the usual treatment. Now, what occurs, nineteen times out of twenty at least? First, that the patient is subjected for some months—even for the first year—to secondary eruptions, more or less numerous, more or less

* Italics my own. F. N. O.

, corresponding to the quality of the diathesis, ıerally mitigated and lessened by treatment. And —from about the second year—these eruptions ıe to decrease . . . Then, still later, the lessening : marked, or becomes complete with the third, or, ith the fourth year. From that time, the secondary is done, and, with it, the contagious accidents ıccompany it, and which constitute the principal s of marriage. Such is the rule: that this rule eptions I know but only too well; and I have given examples of such exceptions" (p. 122 ibid.), ɔove cited]. In this case a young man takes a s, who some weeks later presents with an initial ıf the lip. The conclusion appears to have been ly arrived at on the following basis, viz.: *possi-* contagion from patient's buccal erosions, (which yield to anti-syphilitic treatment, but which did e when tobacco was withheld); *probability* that tress acquired her labial chancre from the secre- this very exceptional kind of syphilitic lesion, if ;yphilitic.

, is such a conclusion sufficiently warranted by dence, on a matter of such moment? Let us look : causes, equally possible, equally probable. The man did not take for a mistress, a woman whose was above suspicion. Such a coincidence as tact of such a woman's lip, with some other lip, esher syphilitic lesions, would not be so extraordi- ; the acquirement of syphilis, from a buccal les- *years after infection.* Such a woman, would be ı line of coming in contact with persons having syphilis, and, either directly or by mediate con- might have acquired her labial chancre, even if not become this man's mistress, without exciting l comment.

me here place in contrast to this, a case taken y own experience. A young man had undoubted ;—characteristic initial lesion, general gland en- ent, roseola; no pronounced papular eruption; ; patches on tongue and inner surface of cheeks. ı somewhat desultory treatment of two years,

he was apparently cured. Remained well for two years; began to have ulcerations at side of tongue, thin pearl-colored at edges; characteristic appearance of the so-called chronic mucous patch; was greatly addicted to tobacco—tongue resisted local treatment, unless accompanied by exclusion of tobacco; repeated recurrences for nearly five years; not markedly affected by specific treatment, which was tried from time to time. At last he married a virtuous girl, since when already two years have elapsed, and she has not yet acquired syphilis.

In regard to M. Fournier's second case: this is rendered especially remarkable, by the fact, that, besides the alleged acquirement of syphilis, by the wife, from a buccal syphilide in the husband seven years after infection, that without any specific treatment, the wife remained free from syphilis during the early years of marriage, and, besides, gave birth to two healthy children during this period. The acquirement of syphilis, from other and unsuspected source, would be much more in accordance with the probabilities of this case, than that this most extraordinary development of active syphilis, upon a diathesis which had slumbered through the initiation and development of two healthy children, should break out finally in infective buccal lesion. The theory of re-acquirement of syphilis, from a fresh source, is not so difficult to accept.

The experience and teaching of all the leading authorities, to-day, are against the acceptance of any claim for inoculability of the secretions of syphilitic sequelæ, and any cases, militating against this view, should be free from suspicion of imperfect observation, imperfect facilities for observation, and from conclusions not based upon thoroughly well-authenticated facts.

Case — on page — will show how easily active syphilis in a wife may appear to have been acquired from a husband who had had syphilis many years previously—and yet, against all presumtive evidence, she may be finally shown to have acquired the disease in a manner more in accordance with all that is now positively known of *the disease.* The evidence in favor of the innocence of

M. Fournier's females was no greater than in my case, and yet the latter was proven guilty out of her own mouth.

What the profession needs now, more than anything else, is some reliable guide towards the formation of an opinion, as to the time it is necessary to treat syphilis, before the patient may be considered free from the danger of communicating the disease to others. It would seem probable, that an explanation of the course pursued in M. Fournier's 87 cases might afford light on this matter. In point of time we find that the average time of marriage in the 87 cases was $5\frac{8}{10}$ years, that 25 per cent were married within three years after infection, and over 10 per cent within two years. In regard to the length and quality of treatment: over 12 per cent of the 87 cases had a treatment of less than a year's duration, several with only a few months, one with the iodide of potass. only, and another with no treatment at all (marriage seven years after infection). It would appear, then, that the contagious element of syphilis is not necessarily dependent upon *treatment* for its eradication. This would confirm the claim made in the earlier pages of this work, that syphilis, in its contagious phase, is self-limited, and that the value of a prolonged and systematic treatment, consists chiefly, in its power to prevent that damage to the tissues and organs of the body, which may finally eventuate in important lesions in after years, viz., the *sequelæ* of syphilis in their various forms. The time during which the treatment should be continued should certainly cover all that period, during which the affected organism contains any contagious element. This question must be settled by clinical observation. If we find that there are well-authenticated cases of communication of the disease, after many years, *without re-infection*,* and that we cannot tell by the degree or quality of the syphilis, what cases may behave in this manner, we are then assuming unwarranted responsibility, in allowing any persons with syphilitic antecedents to marry. If, however, we can find by strict scrutiny

* For facts and arguments showing that re-infection of syphilis is not infrequent, see Cornil on Syphilis, Am. ed.: Henry C. Lea's Son, Phil., 1882, p. 19.

that such cases are not only very rare, but are not well proven, we are then justified in assuming the known facts, as ascertained by the experience of the best observers, as a basis for our decision. For instance, in the great and well-considered experience of M. Fournier we find the following statement (p. 101 ibid.):

"In those where I have seen syphilis pass directly from the father to the child without contamination of the mother, I have observed, that paternal infection, was of comparatively recent date, that is to say, that *it had not exceeded the maximum of three or four years.* Above that term, *never* have I firmly established the transmission of syphilis by paternal heredity." Again (p. 101 ibid.): "If not always, at least in the enormous majority of cases, the husbands who communicate syphilis to their wives, are those who have married *with a syphilis still young:* that is to say, with a syphilis which *does not date back more than a few months or a year, perhaps two: more rarely three or four.*" It is in regard to such points, that the profession need exact observation and information. While we are prepared to accord much value to such statements as the foregoing, from so valued an authority, and to accept them as aids to judgment, to be rendered in practice: we are left in some doubt on account of the mode of expression used. "If not always," *intimates* that M. Fournier has seen cases where husbands have communicated disease when the disease was not recent: that is to say, within four years. He does not cite a well-authenticated case in his own experience. In more than thirty years' experience I have never seen such a case, nor any account of one, which would, with fair scrutiny, warrant the claim that it was well authenticated. The time of treatment of the active stage of syphilis, is a most important one, for the profession to be agreed upon. As to the means and mode they are quite in accord. It may be safely said that all authorities are also agreed, that the treatment should be persevered in, as long as any tangible or appreciable evidences of the disease remain. In America, the steady, gentle mercurial course, continuing throughout the usual period of active manifestations, and not less

than one year, is usually insisted on, and this followed with the so-called mixed treatment (mist. biniodid. or its equivalent) for from one to two years longer: the same course also insisted on, no matter how late in the actual period the treatment is begun. The practice in Great Britain is, I believe, much the same. M. Fournier, who is the leading authority in France to-day, insists upon the same but a longer treatment. Four years he puts down as the minimum. He says (page 102): "Three to four years—such is, according to my view, the MINIMUM [note well the word if you please], the indispensable minimum, in order that the diathesis may sufficiently disappear, under the double influence of time and treatment, and that the patient, returning to a healthy position, may have the right to aspire to the titles of husband, father, and head of a family."

M. Fournier is somewhat peculiar in his mode of administration of the mercurial: proceeding by periods of activity and repose—giving it for a month or two, and then omitting for about the same period. It will thus be seen, that, practically, he administers little if any more of the mercurial, than we, who administer the drug at the point of easy toleration, throughout the whole of the active period. For the settlement of questions so important as those which have been briefly touched upon in the foregoing pages, it is essential that those especially interested in, and familiar with, syphilis in its various forms, in its relation to scientific medicine and to humanity, should record with scrupulous care all *unquestionable* facts, concerning the duration of syphilis as an active contagious disease. That cases, proving disputed points or disproving them, should, when thoroughly satisfied with their value and susceptibility of proof, be forwarded to some convenient medical journal. Let an invitation be extended to those interested, to add a case in point, an opinion, or an analysis which might tend to strengthen facts, or expose errors of diagnosis, or imperfect observation. In this way, I believe, it need not be very long, before the great questions as to the duration of the period of possible communication of syphilis, would be narrowed down to such a point, at

least, that the subject of syphilis, might, within a reasonable number of years—say three or four, or even five—at least, resume his ordinary association with his kind, without the ever-present dread of communicating syphilis, from an ever possibly recurring, periodically active, mucous patch. Prolonged existence of the contagious element in the seminal fluid, though a series of years, has been claimed, and instances have been cited, with great appearance of truth. M. Fournier quotes one related by M. Jonathan Hutchinson: "Thus a medical man contracted syphilis and for about six months treated himself. Believing himself cured and being relieved of all pain, three or four years later he married. *His wife remained healthy*, and became *enciente* eleven times. First pregnancy, child born dead; second pregnancy, child born dead; third pregnancy, child born alive, but syphilitic, and dying with the usual symptons of hereditary syphilis; fourth pregnancy, child born living, but syphilitic and dying also with syphilis. On the contrary, the seven last children, although born syphilitic, resisted the disease and lived."

Here is a case of a healthy woman, giving birth to a series of children claimed to be syphilitic. In order to make this case of value, the evidence must be fuller and more explicit. The simple death of the child, is not sufficient evidence of syphilis; repeated miscarriages are not necessarily from syphilitic influence; and in case of the third and fourth children, we are not informed as to exactly what constituted the evidences of hereditary syphilis. Various forms of imperfect development, and apparent disease of the fœtus, result from scrofulous taint, from hereditary diseases not syphilitic, and from disease of and impressions on the female generative organs, and these propagated through successive pregnancies. Eruptions, termed *scrofulides*, occur in the newly-born that are, sometimes, absolutely identical in appearance with those of syphilis. Cases of the character of the foregoing, may be true as far as the attainable evidence goes, but they must remain as doubtful, when the history is imperfect—because they are opposed to all that is *known*, with any certainty, of the nature of the disease.

The man, after four or five years, with no appreciable disease, infects children, *while the mother remains healthy.* According to the results of M. Mireur's experiments in inoculating healthy subjects, with the semen of syphilitic men, in the active stage of the disease, *the semen does not possess the contagious property.* M. Fournier says, ("Syphilis et Mariage," p. 26, note):

"It has long since been established that *the semen of a syphilitic subject is not susceptible of transmitting contagion.*" If this be the fact, how, then, could the children be contaminated by the husband, independently of any disease of the wife—who, it is claimed, *remained healthy?* It is certainly the fact, that, with the exception of some rare and anomalous cases (such as the one quoted), the weight of the evidence of every authority has been given, in favor of a gradual diminution of the contagious element in syphilis, and its complete disappearance within three or four years. Under the influence of the old views that the later lesions—the sequelæ—were also capable of transmitting syphilis, it was difficult to set a limit to the time, when a man could be said to be free from danger of communicating the disease, but as it has now been satisfactorily proved, that the active stage of the disease, does not as a rule exist more than three or four years, and that the secretions of the sequelæ and the blood are free from the contagious element, apparent exceptions to this law must be accepted as proved, only after the most rigid scrutiny, and refused admission, except on absolute proof.

Note.—In the spring of 1860, and thus over twenty years ago, I was called to see an infant about a year old, the daughter of a prominent merchant, a most upright and religious man. The child had been vaccinated some three months previously without any unusual local result. About a month afterward a rose-colored eruption made its appearance, and, while fading somewhat, it remained, and began to create some apprehension lest it had resulted from an impure vaccine virus. When I saw the child, the eruption was exactly like that of a fading syphilitic roseola, slightly red, and inclining to a coppery hue, chiefly well-marked on forehead and cheeks-

breast back and abdomen. The date of its appearance, following vaccination, suggested syphilis, also its color, first rosy, then inclining to a coppery hue. I communicated my suspicion to the father and at the same time inquired into his venereal antecedents. He acknowledged to a gonorrhœa in early youth, which had caused him much remorse, but he denied knowledge of any syphilitic lesion. The wife was apparently in good health. There were three healthy children older than the little girl. The physician who performed the vaccination, stated its source, which was unobjectionable, and stated, also, that he had vaccinated at least a dozen children with the same virus as that used on this little patient, without any sign of such trouble following. Having scarcely a doubt of the syphilitic character of the eruption, I put the child on a systematic mercurial treatment; this was continued for six months, without any especial change. I then called in the late Dr. Bumstead, (my predecessor in the Chair of Venereal Diseases in the College of Physicians and Surgeons, N. Y.) in consultation. My previous diagnosis was confirmed, unhesitatingly, and, for another six months, the same treatment was continued. Not yet making any impression on the eruption —the child otherwise in excellent condition—Dr. Wm. H. Draper, who then occupied the Chair of Cutaneous Diseases in the College of Physicians and Surgeons, was then called in consultation. The case was accepted as most singular, but previous diagnosis, after careful consideration, was again confirmed, and, for another six months, the treatment was rigidly enforced, at the end of which time I took the responsibility of stopping the mercurial, as, up to that time, apparently, no benefit had accrued from its use. I then tried a mild arsenical preparation for a few months, with equal ill success, the eruption still remaining distinct and coppery in all regions previously occupied by it. During the next *ten* years the child grew fairly well. She was somewhat delicate, and of a nervous, lymphatic temperament, and occasionally received a little aid to her nutrition, such as might be afforded by extract of malt, cod liver oil, etc. My attention at this time (when the child was now over twelve years of age) was

called to several *exostoses* on the radius and ulna, both at the distal and proximal extremites on the inner aspect, also on the outer and inner sides of the head of the tibiæ. This seemed to confirm the original diagnosis, which I had long previously abandoned. I was contemplating a renewal of the treatment, adapted to the later stage of syphilis, when it occured to me to call in Dr. A. Jacobi, then Professor of the Diseases of Children of the College of Physicians and Surgeons. The eruption was somewhat faded, but still distinct, on the cheeks, forehead, and breast, especially well-marked during any excitement, mental or physical. Professor Jacobi expressed an opinion against the idea of syphilis, and considered the eruption a *scrofulide*, and the exostoses *rachitic*. This fully explained the anomalous case of syphilis, as it had been supposed to be, and was then accepted, as rachitic, and was subsequently treated by me, in accordance with this view. The family leaving New York, soon after went to reside in a neighboring city. Here, after consultation with the new family physician, the patient underwent another course of mercury, and this time with iodide of potassium for many months, and finally, having about a year since become quite lame from the growth of the extoses, and their interference with muscular action, a distinguished surgeon from New York was called in consultation, to see if any surgical aid could be afforded. A brother of the patient called on me a few months since to say that my old view of the case had turned out to be correct, and that no surgical aid was thought advisable, but the young lady *had been put on a thorough course of mercury and the iodide of potassium.*" During the several years which had intervened, since the case had been previously considered one of syphilis, the change of opinion had been lost sight of. Meeting the surgeon soon after his examination of the case, I recited the patient's former history which had not been made at all clear in the later consultations; since this time I have had reason to believe that the anti-syphilitic treatment has been again suspended.

The father of the young lady whose history has been

given above—after apparent proof that the vaccination was not at fault—became morbidly remorseful on account of his early gonorrhœa. The later consultations were influenced, by a statement of the sons, that their father, just before his death, some years before, had given them to understand, that he had transmitted the disease to their sister through a youthful folly.

It may be safely stated that the diagnosis of syphilis has often been made, on much more slender ground than in the foregoing case, and the source of infection accepted, not because there was any reasonable proof, but because it was not positively accounted for in any other way. The mere suspicion of an attack of syphilis in a man's youth, in the minds of many physicians, appears to warrant the assumption of an ever-present contagious element, and to account for any and every obscure trouble, which may afflict himself, his wife, or his children, to the end of life.

LESSON XIX.

GUMMY TUMOR OF BONE—LOSS OF SUBSTANCE WITHOUT CARIES.

Clinical case in illustration. Facts showing that the disease is local in its nature. The *dry caries* of Virchow due, like all tertiary lesions of syphilis, to mechanical causes. No *contagium* ever discovered in them. Lesions like those in case cited due to pressure from accumulation of lymphatic material. Similarity between the behavior of so-called *dry caries* and the tubercular syphilide. Van Buren and Keyes's explanation of the latter. Clinical case illustrative of the lesion termed Syphilitic Dactylitis. Behavior of this lesion shown to be identical with that of the so called dry caries, and due to similar causes.

CASE VII. B. W. F.; aged 70; merchant. General health always good. Came complaining of the annoyance caused by two painless ulcers, about the size of a quarter-dollar, just above each frontal prominence. The edges were abrupt and sharp; the entire integument was penetrated, and the floor of the ulcers was covered with large florid granulations. These lesions were said to have appeared about six months previously, very soon attaining their present dimensions, and continuing quite stationary, in spite of many sorts of local application recommended by the family physician. As the patient's general health was perfect, no internal treatment had been resorted to. The gentleman was quite bald, and on examination, several depressed portions of the scalp were recognized, of about the same dimensions as the ulcers. It was evident, to the touch, that there had been a distinct sinking of the bone. This was uniform and to the depth of about one line; the scalp was smooth and movable at these points. In point of fact, the evidence of a former, so-called, *dry caries*, was incontestable. All had occurred within the year, or rather they had only attracted attention during that time. Throughout their course were not recognizable by the patient, from any discomfort or sensation of any sort experienced by him. A course of potass. iodide and biniodid. hyd. (mist. biniodid. hydrarg.) was prescribed,

under which, within the following month, the sores healed perfectly, with a firm cicatrix, scarcely at all depressed.

Remarks.—The foregoing case has an special value, in the fact, that the bone lesion, the "dry caries" of Virchow, is specific; that is to say, it is seen only as a sequel of syphilis, and is reliably diagnostic of that disease. Furthermore, it enables us to understand, better than any other sequel of syphilis, that the processes which result in destruction of tissue, of every variety of tertiary lesion or sequelæ, are not due to any destructive principle, or virus, circulating in the blood, but are due to mechanical obstructions of lymph vessels, through damage to such vessels or channels, during the early active stages of the disease. It is conceded by all scientific authority, that the late lesions, the sequelæ of syphilis, without exception, are characterized by a localized accumulation of the so-called gummy material. It is found in every so-called tertiary lesion, and in amount, sufficient to account for the damage associated with it, on purely mechanical principles. Pressure on vessels of nutrition results in loss of tissue through fatty degeneration, locally and in the parts distant, to which such vessels are distributed, obstruction of the adventitia of blood-vessels, resulting in pressure upon such vessels, is recognized as a cause of obliteration of their lumen. This gummy material has been proved not to differ, in the least degree, from accumulated normal lymphatic material. No contagium of syphilis has ever been detected in it. In the tubercular eruption this accumulation of gummous material, so called, is often absorbed, leaving cicatricial depressions, which are characteristic, without suppuration. It is recognized as resulting from pressure upon the tissue into which it is infiltrated, or in which it accumulates, causing absorption of the tissue. When the gummy material is taken up, the cicatricial depressions result.* Applying the same explanation to lesions

* "The syphilitic tubercle is due to a diffuse hyperplasia of small cells in the substance of the true skin. These cells, which partake of the *nature* of the so-called gummy exudation, grow at the expense of the

of bone, like those designated the *dry caries of syphilis*, it will be seen that gummy accumulations in bone may follow the same course, and that the so-called *dry caries* is not a true caries at all, for there can never be caries without suppuration. The fact becomes evident, that the loss of bony material, which results in the depression, is caused through absorption of the bony material through pressure by the accumulated gummy deposit. Not producing suppuration or caries, but, by pressure, causing absorption of the bony structure without inflammation, without suppuration, without caries. In this way, and in this way alone, can cases of so-called dry caries, initiated without inflammation, progressing to well-recognized loss of bone structure, without suppuration, or caries, be satisfactorily accounted for.

SYPHILITIC DACTYLITIS.

G. B. W., printer, 45 years old; tall, delicate; has never been strong; supposed himself of scrofulous diathesis, as his mother was affected with a "salt rheum." In 1860 had an injury of the left leg which developed an indolent ulcer. From long-standing at his business this continued open, during six years, and was known, and treated from time to time, as the "printer's sore leg." Became an editor, and thus, relieved from necessity of standing, the ulcer healed. After this, occasionally took sarsaparilla, iodide of potass., etc., for his supposed scrofulous diathesis. Remembers to have had dull pains in his muscles, and also in bones: had also slight pain in fingers of right hand. These pains were relieved by application of tr. of iodine. Never had any evidence of an initial lesion of syphilis, or any

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natural tissues, and cause the atrophy of more or less of the substance of the latter, even while there is apparently a hypertrophy, as evidenced by the little tumor called a tubercle. When, however, the adventitious newly formed cells go into atrophy, and are absorbed during the progress of the eruptions, then, not only does the tubercular prominence disappear, but the scar left attests the atrophy and absorption of the true elements of the skin tissue, which took place during the deposit of the morbid material."—Van Buren and Keyes on "Genito-Urinary Diseases with Syphilis," p. 583. D. Appleton & Co., New York, 1874.

re on any part of his body which was suspected to be ch. Pain in his fingers first noticed about two years go. Injured his fingers slightly, and swelling began. his was treated by local application of tr. iodine, but it ontinued, and after a few months the finger became listorted in shape, and appeared shorter than before. Middle finger of opposite hand then began to swell, like the first, without special pain. Physicians who examined him, attributed his difficulties to scrofula, and for several months he took hydriodic acid, cod-liver oil, etc. General health much improved but local trouble remained. Careful questioning failed to elicit evidence of any lesion of acute syphilis. A deeply copper-colored scar was found on the site of the chronic ulcer of the leg, previously described. The middle finger of either hand was swollen at the second joint. That of the right hand was slightly bent towards the forefinger, and shorter than the left by fully half an inch; slight crepitation and slight tenderness on pressure; increased mobility at the joint, which was evidently due to loss of bony tissue, chiefly in the distal end of the second phalanx. The second joint of the middle finger of the left hand was swollen, slightly sensitive on pressure; this trouble was comparatively recent, having occurred within three or four months. The characteristics of the bon lesions in this case were distinctly those of *dactylit syphilitica*, and yet there was no syphilitic history to b obtained. The patient then remarked that he had a small sore on his back, which had been bothering him slightly, for several weeks. Examination showed a sharply cut ulceration, about the size of a silver half-dollar, extending through the thickness of the skin, perfectly characteristic of a late syphilitic ulcer, due to breaking down of a gummy infiltration or accumulation. This settled the diagnosis beyond a question, and the patient was at once put upon an anti-syphilitic treatment. Iodide of potassium in even three or four grain doses caused gastric irritability. Iodoform, which had been previously well borne, was resumed, 1 gr. (Warner's pills) thrice daily, and ¼ gr. of the protoiodide *of mercury*; also mercurial fumigations, twice week-

ly. This was c[illegible]
ciable benefit, a[illegible]
This, treated [illegible]
healed, when the [illegible]
ness of his gums. [illegible]
patient was not s[illegible]
pills of iodoform a[illegible]
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digestive disc[illegible]
second joint [illegible]
affected, was n[illegible]
That of the right, was [illegible]
of inflammatory t[illegible]
The mobility w[illegible]
second phalanges a[illegible]
in the accompany[illegible]
evidence of presen[illegible]
of specific treatment [illegible]

Remarks.—N[illegible]
proof of acquirement [illegible]
liar history, appearance [illegible]
the fingers, made its s[illegible]
The presence of a c[illegible]
set the question, if one [illegible]
fectly at rest. Ordinarily [illegible]
suitable for late syphilitic [illegible]
mercury and gradually increas[illegible]
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The nature of the lesion [illegible]
recisely, identical with that [illegible]
ie so-called dry caries—loss of [illegible]
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ound the joints. Absorption [illegible]
ie final deformity, and this is brought about [illegible]
re from purely mechanical conditions. A full and most

admirable account of *dactylitis syphilitica* may be found in Bumstead & Taylor on Venereal Diseases, (Phila., 1879,) p. 671, *et seq.* On p. 675 they remark: "These bony swellings may remain in an indolent condition for along time, and finally the gummy deposit may be absorbed, or it may soften and be discharged through asinus. . . . *The absorption of the bone is unaccompanied by ulceration of the soft parts*" (p. 576).

In the excellent work on Genito-Urinary Diseases with Syphilis, by Van Buren & Keyes, (N. Y., 1874,) page 625, they say of such cases: "Appearances similar to those found in *dry caries* have been encountered in the affected phalanges after death. The gummy deposit, after producing great swelling of bone by its infiltration, *undergoes absorption without ulceration*, as in *dry caries*, and results in loss of substance of the bone, which is not replaced by new tissue. If very rapidly formed, the gummy deposit may undoubtedly break down and be eliminated externally."

It is immaterial in regard to treatment, whether the so-called gummy deposit is in the bone structure, in the fibrous or cartilagenous structures, or in the adjacent soft parts: wherever it is imprisoned, so as to produce mechanical pressure, the parts must yield sooner or later, either slowly, through absorption, or setting up an inflammatory process, more or less acute, cause death of tissue. The same behavior of the so-called gummy material will be recognized in every kind of late or tertiary lesion (syphilitic sequelæ), viz., absorption of unyielding surrounding structures from mechanical pressure, or inflammation and suppuration necrosis through direct mechanical injury, or indirectly through destruction or impairment of vessels of nutrition.

LESSON XX.

SYPHILITIC SEQUELÆ INVOLVING NASAL BONES, VOMER AND VAULT OF THE HARD PALATE.

Clinical case in illustration. Treatment by internal remedies. Slow progress through this agency. Final cure without deformity. Second case treated by mechanical removal of necrosed bone. Operated on through nasal orifices by means of the dental engine. Prompt recovery. Syphilitic necrosis a local disease. Early removal of dead bone advisable. Recovery usually as prompt as when the disease results from other causes than syphilis.

B. W.; 37. Syphilitic history: active stage three years previous; irregularly treated for about a year, during which he had a sparse papular eruption lasting a couple of months, also ulcers in the mouth and throat at the same time. Since then, had no evidence of syphilitic trouble, until about three months previous, when he began to have slight pain in his nose with some nasal catarrh. This continued to annoy him, the discharge increasing, and finally tinged with blood, and at times quite fœtid; tenderness over the nasal bones also increased, and a redness appeared, with increased soreness. Had been under care of physician, who gave him internally some iodide of potassium, and a wash to use. This dissipated the odor, but the soreness increasing he concluded to seek other aid. Examination showed the nostrils filled with hard black scabs; odor fœtid. Probe introduced strikes loose bone; a flat ragged piece about the size of a half-dime removed; quite extensive surface of dead bone recognized, but no more could be removed. Patient put upon mist. biniodid., 1 teaspoonful thrice daily. Besides this, iodid. of potass., increasing one grain at each dose up to sixty, largely diluted with milk; permanganate of potassium, two grains to water an ounce, to be used through a syringe in cleansing and deodorizing the parts. Subsequently, several pieces of turbinated bone came away and also several pieces of the nasal bones. As soon as any portion was found loose it was carefully eliminated; medicines faith-

fully used; potass. iodid. up to ʒi. three times a day, but it was nearly three months before the necrosed bone ceased to separate, and the discharge to lose its characteristic fœtor, and finally to cease. Fortunately, the destruction was not sufficient to produce any external deformity, and the case was claimed as showing peculiarly satisfactory results of treatment.

CASE II. W. G. H.; aged 17. History of active syphilis, under care of Dr. Leving, of London. A little over two years, after began to suffer with foetid nasal catarrh. Was said to have been treated by Mr. Walter Coulson, of London, with iodide of potass., etc.; Trouble continued increasing, when he presented to me early in Jan., 1880. Necrosis extensive and was evidently progressing; discharge profuse; odor fœtid. Probe touched dead bone at several points, and some small pieces of the vomer were removed. Tissues covering arch of hard palate, red and tender. Patient put upon full course of biniodid. with increasing doses of iodid. potass. In the course of a few days the inflammation of tissues covering hard palate increasing, a perforation ensued. This affected patient's voice unpleasantly, and as he was a public singer, he was greatly disturbed, and begged for some more efficient mode of relief. Instead of encouraging him to wait, under an efficient specific treatment, until the slow separation of the necrosed bone was effected, I sent him to Dr. J. H. Goodwillie, whose demonstrations in removal of necrosed bone by aid of the dental engine I had witnessed on several occasions, and who subsequently published an account of the case at my request, and has sent me a copy for insertion in this place. Of the condition of the patient, Dr. G. says:

"He now has necrosis of the vomer and vault of the palate, with a small hole in the latter. Fœtid discharge from the nose, occasionally stained with blood from excessive granulations. Administered iodide of potassium and cod-liver oil. Local treatment consisted in blowing into the nasal cavities iodoform and camphor triturated *to an impalpable* powder, with subnitrate of bismuth

and sulphate of potash, to reduce the superabundant granulations, and so have less bleeding during the operation. By invitation of the late Professor James R. Wood, M.D., to deliver a clinical lecture on extirpation of bones of the mouth and nose, I operated on this patient at his clinic at Bellevue Hospital, January 15, 1880. Administered four ounces of whiskey before the operation, and kept him under the influence of nitrous oxide during the operation, which lasted about fifteen minutes. No external incision was made, and the necrosed vomer lower portion of the ethmoid, both inferior turbinated bones and vault of the hard palate, were removed, by the revolving knives, through the nostrils.

No portion of the soft tissue on the hard palate was removed. On the completion of the operation, he was directed to blow his nose, to free his nasal cavity of the cut-up necrosed bones and blood, and then he was positively forbidden to again blow his nose, for the next twenty-four hours. After that time, the clotted blood was carefully removed by the dressing nasal forceps, and the nasal cavity completely covered by blowing in the iodoform and camphor powder.

"On the second day a nasal douche was given before the application of powder.

"On the next day after the operation he was able to attend to his daily duties.

"The wax model illustrating his case shows the opening in the palate one-fourth inch in length before the operation. Atrophy of the nose before the operation, from the non-respiration and constant blowing of the nose, as seen in the right ala, and the development of the ala, as seen in the left side of the nose, after the operation.

"The other model shows the opening in the palate closed and a new deposit of bone over the palate.

"He is in perfect health at the present time."

In syphilitic caries involving the vomer, the nasal and turbinated bones, and contiguous bony structures difficult of access to ordinary surgical proceedure, the removal of diseased bone requires especial instruments

and skill not within the reach of the ordinary surgeon. The dental engine affords access to such necrotic processes, and until the surgeon can personally avail himself of the facilities it affords, for removal of carious bones in such situations, it is my opinion, that the best course will be, to relegate cases of this nature, to men who, like Dr. Goodwillie, have the mechanical skill and experience in the use of the dental engine requisite to perform the operations necessary for the complete removal of diseased bone in these localities. Otherwise we must usually follow the old plan of waiting, until the separation occurs, through the tedious process of exfoliation, aided by such internal remedies as have heretofore been relied upon for the care of these cases. This involves the danger of deformity, and delay in cure, which it seems to me few surgeons, aware of what especial skill in the management of the dental engine can accomplish, will feel inclined to accept. My own experience in several cases of syphilitic caries of the bones of the skull, where I had operated for removal of the diseased bone, and found rapid recovery result, has convinced me that, when syphilitic necrosis occurs, it is a purely local matter, and that it is good practice, in all such accidents, to remove the dead bone at the earliest practicable period, and that, as a rule, to which there are few exceptions, such removal will result in as prompt recovery as when the necrosis has occurred from other causes than syphilis.

LESSON XXI.

GUMMY TUMOR OF BONE—PRODUCING BRAIN SYMPTOMS, ETC.

Clinical case in illustration. Such lesions of rare occurrence before the second or third year of syphilis. Insidious in access. Sometimes producing extensive loss of bony tissue. First signs often through occurrence of vertigo, epilepsy, aphasia, or paralysis. Same symptoms may occur from accidents of the acute stage of syphilis. Cases in illustration. Possibility of confounding the brain and nerve disturbances of late syphilis, with those due to processes of the active stage of the disease. Mauriac's views in support of this position. Cornil's views.

CASE VIII. L. G., 35; policeman. In good general health. Had a history of irregularly treated syphilis, twelve years previous. About five years ago, he first noticed a swelling on the top of his head; also soon after, another on the left side: not tender, causing no inconvenience or pain. About a month after, he received a blow on tumor No. 1, after which he had much pain, and it finally suppurated and discharged pus freely. Examination showed an ulcer, about an inch in diameter, perforating the scalp just anterior to the vertex. The probe touched bony material at once, and a loose piece, half an inch square, was readily extracted. The second and more recent swelling was about the size of half a pullet's egg, very hard and insensitive. The man was at once put upon a mixture of biniodide of mercury and iodide of potassium, the latter in increasing doses.

The open lesion, which was at first quite painful, soon became less so, and the iodide, at the end of a month, had been raised to seventy grains three times a day, in a tumbler of milk, and was well borne. Within three months (notwithstanding several intervals of two or three days each, when he was prevented from taking his medicine) the hard tumor had entirely disappeared. His only complaint was of occasional vertigo. This continued after the healing of the necrosed lesion, which occurred a month or two later, leaving a cicatricial de-

pression which indicated loss, through to the inner table of the skull. The vertigo, which appeared to be symptomatic of a bony growth on the inner surface of the cranium, after some four months more of treatment finally disappeared. He was, however, kept on the simple mist. biniodid., a drachm thrice daily for the following year, and he has had immunity from trouble for the past three years.

Remarks.—Tumors of the cranium rarely occur before the second or third year of syphilis, and more often, not before the twentieth or later. Their access is very insidious, and as they are usually without pain, often come to considerable size before discovery. If the patient is temperate, and in good general health, they may remain stationary, at any point, without apparent change, until some irregularity in living or depression of the vital powers, disease, or injury as from a blow, when they inflame and break down, leaving a bony ulcer involving the thickness of the external table and the diploe. Penetration of the internal table is rare. The extent to which the skull may be damaged in this way is scarcely conceivable. The same mode of implication may extend even beyond its paricles to the bones of the face. The first announcement of trouble, in cases of cranial syphilis, may be through the occurrence of some nervous trouble from pressure on the brain; vertigo,as in the case just cited; epilepsy, aphasia, or muscular paralysis. The reasonable suspicion of antecedent syphilis, should be the signal for prompt and efficient treatment, addressed to the removal of syphilitic sequelæ. *Brain and nerve disturbance occurring during active stage of syphilis*, during the early months of syphilis, *i.e.*, in the acute or secondary stage, localized paralysis or acute brain disturbance may occur—not due to the accumulation of the so-called gummy material, which does not exist during the active stage, but from the pressure caused through the formation of an accidental papule, or its equivalent, within the skull, or in the track or sheath of a nerve. Quite recently I have seen a facial paralysis extending to the hand of that side, in the papular stage of syphilis, passing off under treatment, simul-

taneously with the other lesions of that stage. Within the last three months a young gentleman under my care in the fifth month of syphilis, with papules, though sparse, yet distinct and characteristic, was suddenly attacked with acute mania. Two distinguished alienists of this city who were called in, pronounced the case one of commencing paresis, and sent the young man to Bloomingdale Asylum. In the course of a few weeks he was sufficiently recovered to be able to signify to his medical attendant at the asylum, that he was under treatment for syphilis when attacked with his mania, and showed the stains left by the papules. The result was a resumption of treatment for syphilis and complete recovery, within a very short time, when he voluntarily returned to my care.

The possible error of mistaking conditions, like the foregoing, for late accidents of syphilis, will be apparent.*

Syphilitic ostitis and periostitis, osteophytes, exostosis, epiphysial and parenchymatous, enostoses eburnation of bone, etc., of the *active period* of syphilis may be, I think, legitimately claimed to result from one and the same cause, viz., the cell aggregation and proliferation, *in loco*, which when occurring in the integument constitutes the papule.

This view would rationally explain the position of M. Mauriac, recently quoted in the American edition of Cornil on Syphilis, and which thus considered, is so entirely in harmony with my own position, that I shall yield to the temptation to quote some of M. Mauriac's statements bearing on this point. He says: †

(1) "Pericranial periostitis is often among the early manifestations of syphilis . . . even before the secondary lesions.

(*a*) "It is seated exclusively in the periosteum of the

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* An accidental papule sometimes may be seen developing in the anterior chamber of the eye during the active stage of syphilis, which has received the title of *gummy tumor of the iris*. This apparent misnomer is calculated to create the impression that gummy tumors do sometimes occur during the early months of syphilis, I think, which can be satisfactorily proven to be an error.

† Cornil on Syphilis, Am. ed., 1882. page 264.

cranium, and if hyperæmia or inflammatory lesion of the osseous tissue exists it is *secondary* and remains subordinate to the periostitis.

(*b*) "Pericranial periostitis is the result of a true inflammatory process—an irritation or active process, as indicated by its acute symptoms and active course.

(The same may be said of the initial lesion of syphilis, or the papular eruption, both of which have been shown to produce irritation, through mechanical obstruction to the processes of nutrition rather than from the inflammatory nature of the lesions.) He further says:

(*c*) "This variety of cranial tumors, when a result of acquired syphilis in the adult, *has a tendency to resolution, either spontaneously or by appropriate treatment.* The swelling *readily disappears without leaving any trace.*

(Italics my own, to indicate the exact correspondence of these tumors in their behavior with that of the papular eruption.)

(*f*) "The tumors may be discrete or confluent, and usually are located on the anterior half of the cranium. *Their duration varies from four to six weeks when not submitted to treatment. Under proper medication they disappear sooner.*

(2) "Periostitis of the ribs, costal cartilages, and sternum may occur at the beginning of syphilis.

(3) "Periostoses and exostoses may develop at other parts of the osseous system during the early period of constitutional syphilis.

(*a*) "The period of incubation of these osseous lesions, dating from the appearance of the chancre, varies from thirty to one hundred and twenty days.

(*b*) "They may appear several days before eruption of the secondary cutaneous or mucous lesions. They occur spontaneously without the intervention of any exerting cause.

(*c*) "They seem to result from a form of syphilitic infection, in which the virus is unusually active, as compared with the resistant powers of the organism contaminated.

(*5—a*) "They may recover spontaneously, but they

disappear very much more rapidly under mercury and iodine, with local anti-phlogistic treatment.

(*b*) "They complicate the prognosis of syphilis, although they are often associated only with mild lesions in other organs and do not necessarily indicate a malignant local process or serious general constitutional tendency."

It appears to me to require a very moderate degree of perspicacity, to discover a remarkable similarity, in time, mode, and degree of development, in behavior after development, with and without treatment, and in relation to the prognosis of a given case, with that of the papular eruption. Considering, then, the power of penetrating through any and every tissue, occasionally manifested by the amoeboid cell, or syphilitic disease germ, the wonder only appears to be that such accidents as the local proliferation and accumulation of such cells, in various localities, outside their usual channels, are not more frequently observed. The probabilities appear to me that such erratic accumulations do very often occur, in the way just mentioned, but, that, as they are most likely to be located in the softer tissues, the mechanical disturbance is not sufficient to attract attention; but when occurring in the bony structures, or between these and the periosteum, very naturally periostitis of the mild and transient character, described by Mauriac, would be likely to take place. It is also a significant fact that such proliferations are favored by a sluggish circulation, such as may be inferred, in cases as Mauriac says (3) "in which the virus is *unusually active as compared with the resisting power of the organism contaminated.*"

In connection with the statements of Mauriac and with the views just expressed, it will be interesting to recall what M. Cornil says as to the mode of origin of syphilitic osteo-periostitis. "Syphilitic periostitis does not differ materially from ordinary osteo-periostitis, limited to the superficial layer of the bone and the periosteum, it most frequently occurs at the end of the secondary or in the tertiary period, attacking the tibia, clavicle, sternum, bones of the head, etc.

"Beneath the periosteum, between it and the bone, *there collect numerous round cells, analogous to those of embryonal marrow.* At the same time the deep layers of the periosteum are inflamed and *contain cells interposed between the fasceculi of fibres.* The neighboring connective tissue of the periosteum, generally presents a slight inflammatory œdema, so that the tumor, situated between the skin and bone, is due both to the swelling of the periosteum and to the inflammatory œdema of the subcutaneous connective tissue. The surface of the bone beneath the periosteum, has the openings of the Haversian canals enlarged and filled with marrow, which is either red and embryonal, or is gray and gelatinous, *consisting of the round cells of the medulla.* The fat has disappeared from these changed canals. This form of mild periostitis *may disappear and leave no trace*, even when it is quite deep, and in a flat bone, as the sternum ribs or cranium. It is accompanied with an embryonal condition of the marrow of the whole bone." (Cornil on Syphilis, Am. Ed., Henry C. Lea's Son & Co., Phila., 1882, pages 247, 248.

LESSON XXII.

LATE BRAIN LESIONS OF SYPHILIS—GUMMOUS INFILTRATION OF.

Clinical case in illustration. Prompt beneficial effects of specific treatment. Large doses of iodide of potassium evidently beneficial. Prompt retrogression in patient's condition through their discontinuance. Renewed improvement through resumption of remedies in mild form, and subsequent deterioration. Resumption of large doses of iodide of potassium objected to, and final relapse of the patient resulting in confirmed dementia. Remarks. Mr. Hutchinson's views of the diseases of the brain due to syphilis. Correspondence of the same with conditions in foregoing case. Suggestions of treatment for similar cases. Iodide of potassium in large doses claimed to be essential in treatment of the sequelæ of syphilis. This confirmed by experience of accepted authorities.

W. S. S., 37; civil engineer. History of a mild form of syphilis at 24; indurated initial lesion; sparse papular; syphilide; partial alopecia; mucous patches in throat. Desultory treatment by mercurials for three or four months. No appreciable evidence of disease after the sixth month.

Eleven years after, while in South America, engaged in very engrossing mercantile business, while in robust general health, he gradually became conscious of a failing and uncertain memory. His partners had observed this previously. He became also unusually emotional; tears coming without due occasion. He would drop asleep over his ordinary work, omit words in his business letters, recognizing this himself, on reperusal. He continued for two or three months to transact business, but was no longer trusted to do so without supervision. His physicians pronounced his trouble acute-softening of the brain, and he was sent home. He came under my care in March, 1878. He was still in excellent health. In addition to the foregoing symptoms, he had some aphasia and slowness of utterance; he was no longer able to correct his written mistakes as before, but was able to give a connected account of his trouble and also of his previous syphilis. He had

up to this time been treated, chiefly, by use of the bromides and strychnia, but had slowly, but steadily, deteriorated mentally, while his general health was yet perfect. He was an excessive smoker, and drank alcoholic beverages two or three times a day.

Mr. J. was at once put on the mist. biniodid. hydrarg. a teaspoonful thrice daily, with the addition of one drop of a saturated solution of the iodide of potass. with each dose, in half a small tumbler of milk thrice daily. Smoking and spirituous liquors wholly interdicted—plain wholesome food, regular hours, took the place of ill-selected food and late hours. The solution of the iodide was increased by one drop for each dose of the mixture, and given separately from it in a half tumbler of milk, and this continued up to the tenth day, when he was taking 30 drops or 30 grains of the iodide of potass., besides the 8 grains in his biniodide mixture in which he got also $\frac{1}{16}$ of a grain of the biniodide of mercury. Already there appeared some signs of amendment. The iodide was now increased more slowly: only one drop per day instead of one at each dose, as he complained of a little sense of nausea at times after taking the medicine. The milk was increased so that at the end of the third week from this he was taking 52 grains in a tumbler of milk, besides his mixture, containing 8 grains more, making one full drachm of the iodide of potassium, and $\frac{1}{16}$ of a grain of the biniodid. of mercury three times daily, and bearing it perfectly; smoking but one cigar daily and drinking but claret with his dinner. He had now improved so much that his friends remarked it on meeting in the street. He was less somnolent, and his difficulty of utterance was scarcely noticeable, as he was naturally slow of speech. This treatment was continued without change in any particular for three months, with gradual improvement, when, notwithstanding several lapses in his abstinence —on one occasion dissipating for several days—he had so far recovered that he considered himself, and his friends considered him, quite well. His medicines were given, however, with the distinct understanding that unless *some especial* contra-indication occurred, they should be

continued in same doses, viz., 1 drachm of potass. iodide, and $\frac{1}{15}$ hydrarg. biniodid. thrice daily for at least one year. Continuing apparently well for the next few months, he went to London, where he consulted an expert, who, while approving the previous treatment, thought it had been continued long enough and directed that it be discontinued. At the end of a month the patient went to Paris, and after a short period of dissipation was seized with acute mania and was placed in a Maison de Santé, where he soon became aphasic and somnolent, and his case was accepted as one of acute idiopathic cerebral ramollissement. A history of the case was sent to the physicians then in charge of the case, with suggestion to resume the former specific treatment. Under mercurial inunctions and small doses of potass. iodid. the patient once more improved, and hopes of complete recovery were held out. From being unable to recognize his relations, even requiring aid in all the operations of his excretory functions, and even sitting at times with open mouth and food unmasticated in it, he became able to help himself in all ways, to write legible and coherent sentences and dates, to recognize and converse intelligibly, though with thick and at times somewhat difficult utterance. At this time, being in Europe, I was desired to see him in consultation with the medical officers under whose care he was, and found him in the condition last above described. The former diagnosis of the syphilitic origin of the trouble was concurred in by the resident physician, but great surprise was expressed at the magnitude of the doses of iodid. of potass. which had been used. When their immediate resumption was urged, a deprecating shrug accompanied the consent given, and it seemed scarcely probable, although the recommendation was enforced by cases and authorities, that the patient would get the full measure of what was, evidently, considered heroic treatment. Within a few months he began to retrograde; had frequent epileptiform seizures, and now, after a year, is still under the same care, in a state of hopeless dementia.

Remarks.—Mr. Hutchinson, of London,* in discussing the diseased conditions of the brain due to syphilis, says, "If we say that we recognize three forms of cerebral disease—one in which the symptoms result from arterial occlusion, one from irritation of gummata, and one from periosteal thickening—we may assume that sudden attacks of paralysis denote one, that the second has all the symptoms common to cases of tumor, and that severe pain and headache go with the last. . . . No doubt in some cases all three lesions present together, and in many two of them." The probabilities seemed to me in favor of the accumulation of germinal material (gummy deposits) in the adventitia of arteries, as described by Heubner† and by Edes,‡ sufficient to produce in the first instance symptoms of pressure, then of irritation, finally obstructed circulation and consequent softening. The two causes, viz., arterial occulusion and irritation and pressure from gummata, combining in this case. The prompt benefit from specific treatment in the first instance warrants the belief that its continuance as originally contemplated would have not only prevented the relapse but in all probability have resulted in permanent cure. In any event the fair and full trial of it could not have eventuated more disastrously than its omission. Similar accumulation (gummy deposits) occurring in the spinal cord or at any point throughout the nervous system, producing paralysis in various localities and degrees, even in some instances perfectly simulating locomotor ataxia,§ and general paralysis of the insane, would be treated with equal benefit, through the same means and measures made use of in the early stages of the foregoing case. Inunctions of the mild mercurial ointment, a drachm morning and evening, instead of, or even in cases of urgency, in addition to, the administration of mercurials

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* London *Medical Times and Gazette*, Feb. 7, 1877.

† Cornil and Ranvier, Pathological Histology. Am. Ed., p. 331.

‡ Physiological Pathology of Syphilis. Otis. Putnam's Sons, 1881.

§ See Professor Erb's paper "On the Role of Syphilis as a Cause of Locomotor Ataxy," in "Transactions of the International Medical Congress," seventh session. London, 1881. Vol. ii., p. 32.

internally. The iodide of potassium might also in obstinate cases be carried up to its highest point of tolerance, or until the urgent symptoms yielded. As high as 2 ounces of the iodide in the 24 hours have been administered, with final relief of grave destructive late lesions of syphilis.*

The varieties of syphilitic sequelæ, dependent upon locality and tissues involved, it will readily be seen, may be interminable. If such lesions are, as is claimed, dependent upon obstructed lymphatic channels or spaces, it will readily be seen that they may occur at any point in the human organism to which nutritive material is carried. The attempt to classify them in regions, organs, and tissues, while aiding in the study of special symptoms and local disturbances due to their initiation, development and progress, unless suitably guarded by explanation, is open to the objection that from this fact they are liable to be made the subjects of consideration as so many varieties of disease rather than the same variety simply modified in appearance and effects through the influence of locality. It will be recalled as a significant fact that no matter what the locality, appearance, or symptoms of presumably syphilitic origin, one and the same line of treatment is indicated in every lesion occurring throughout that period of syphilis known as the tertiary and quarternary stages of syphilis, or the period of syphilitic sequelæ.

* Genito-Urinary Diseases with Syphilis. Van Buren and Keyes. Appleton & Co., New York, 1874, p. 570.

LESSON XXIII.

SYPHILIS OF INFANTS AND HEREDITARY SYPHILIS.

Does not differ essentially from syphilis of adults. There must always be a syphilitic disease-germ to initiate the disease. Difference in syphilis of the embryo. Syphilis of the infant and syphilis of the adult all dependent upon the same influences, modified by the nature of the tissues involved. Treatment of all must be based on same principles. Reasons for this view. Syphilis as a result of obscure hereditary influence not accepted. Reasons in support of this view. Disease of embryo or infant often resulting from pre-existing syphilitic disease of parents. Not necessarily syphilitic. No authenticated cases of syphilis in embryo, or infant conceived after contagious or active stage of syphilis in parents has passed.

If the position taken in the preceding lessons is correct—viz., that syphilis is the result of undue proliferation of germinal cells, brought about by the influence of a syphilitic cell or disease-germ, which has been brought in immediate contact with a healthy germinal cell, then all syphilis must be attributed to a similar cause. There must always be a syphilitic disease-germ to initiate the disease. The different modes through which contact, initiating the disease in adults or children, is effected, has already been explained. Syphilis in infants cannot differ from this, except so far as the disease is modified by the immature tissues in which the disease is developed. The treatment of syphilis of infants must be based on the same principles as that for adults. In this view, strictly speaking, there can be no such thing as *hereditary syphilis*. If, as has been shown by citation of numerous instances, notably by results of the recent extensive observation of M. Fournier and others—the infectious property of syphilis is *self-limited*, and does not continue beyond a period of three or four years, all cases of transmitted syphilis beyond such period, whether by immediate contact or through alleged hereditary influence, becomes impossible. If it can be ***shown that no*** well-authenticated case of transmission

of syphilis has occurred beyond a period of three or four years, as has been claimed, then an hereditary influence extending through generations cannot be accepted. The necessities for the production of syphilis require for its initiation *a disease-germ of syphilis*. The development of the disease, following its contact with healthy cell elements, is well understood—a certain definite course in its progress is recognized as necessary in all cases—a stage of proliferation with contagious non-destructive lesions—the so-called primary and secondary periods—then a stage of accumulations of lymphatic elements, non-contagious, but which produce destructive lesions through mechanical interference with processes of nutrition. In order, therefore, to the production of the disease in the adult, in the infant, or in the embryo, the infecting cell of syphilis must first be brought in contact with healthy cell material. No mysterious hereditary influence is necessary, or can be admitted. If the disease-germ of syphilis by direct contact with external parts or through its amoeboid power traversing tissue, reaches healthy cell material, whether in the adult, the infant, or the embryo, then the syphilitic influence is directly transmitted, and its development must be governed by the same laws that characterize its progress in the known behavior of the disease in the adult, modified to greater or less extent by the age and degree of stability of the tissues in which the disease is developed. First, the localized proliferation and accumulation of cell material not necessarily destructive; second, accumulations of cell material, which induces destructive action through interference with processes of nutrition. In this way it will be seen that syphilis in the embryo, syphilis in the infant, syphilis in the adult, is the legitimate result of similar—in point of fact identical, processes—producing results which, while apparently differing in many respects, may yet be explained in complete harmony with the known behavior of syphilitic disease in the adult. It is undoubtedly the fact that much disease in fœtal and infantile life results from pre-existing disease in the generative organs of the parents, who have been subjects of syphilis—but that any syphilitic

disease, proven to be such by its power to transmit syphilis, has been communicated to healthy persons, by infants conceived after the active or contagious stage of syphilis has passed, there is no well-authenticated evidence to prove.

LESSON XXIV.

CHANCROID: ITS NATURE AND TREATMENT.

Definition. Character. Usual origin. Destructive. Contagious. Venereal. Description. Secretion always inoculable. Loses power in each successive inoculation. Under favoring circumstances its progress self-limited. Under unfavorable conditions assumes a vicious type. Phagedenic form. Serpiginous. Extension through lymph vessels to glands, producing bubo. Pus from chrancroidal bubo possesses properties of original sore. Chancroid varies in activity. Activity usually corresponds to that from which it is derived. Hence every grade, from typical chancroid to simple excoriation may be met. History of chancroid. At one time confounded with syphilis and gonorrhœa and treated with mercury. Ricord differentiates between gonorrhœa and chancroid. Bassereau proves the distinctions between chancroid and syphilis. Clerc's views. All pus shown to possess contagious properties. Low condition favoring production of sores by inoculation. Dr. Wigglesworth's experiments proving production of contagious sores from simple pustules. Non-specific nature of chancroid thus shown to be probable. Causes which tend to intensify its activity. Fournier's experience in proof of this. Conclusion inevitable that chancroid is not of specific origin, but a self-engendered disease resulting from stimulation and vitiation of benign natural processes. Chancroid often mistaken for syphilis. Necrosis the characteristic of chancroid. Growth the characteristic of syphilis Manner in which the two separate diseases may be associated. Difficulties in diagnosis. Syphilis and chancroid never in any relation except as life may be in relation to death. Syphilis always the type of rapid growth of germinal elements. Chancroid always characterized by death of tissue.

Chancroid is an acute, contagious ulcer, recognized as resulting from venereal contact. It is a purely local disease, possessing characteristics which entitle it to be considered, *par excellence*, the highest type of acute ulcerative action. In the great majority of cases it is the result of inoculation of the purulent secretion of an already existing ulcer of a similar character. Applied to sound integument or mucous membrane, it is capable, under favoring circumstances, of effecting a solution of continuity of the part, and of communicating to it, at once, its destructive and contagious properties. More commonly and readily, it is established upon an abrasion

of the skin or mucous membrane produced *in coitu.* On application of the purulent secretion of typical *chancroid* to an abrasion, either on the person already affected or on one previously free from the disease, congestion, inflammation, suppuration, rapid destruction of tissue follow in quick succession. The ulcer, thus formed, presents all the characteristics of rapid destructive action. It is sharply cut, with ragged edges and pultaceous floor, and secretes pus freely. Chiefly characterized by its contagious property, the chancroid is seldom single, several distinct lesions usually presenting at the same time. Occurring under circumstances of good general health, cleanliness, and temperate living, its progress is usually self-limited; gradually increasing, from two to five weeks, it acquires a diameter of from three to six lines; the loss of tissue is then slowly restored, and a scar like that of an ordinary burn is left. From first to last, its secretion is inoculable, and the sore is capable of being reproduced upon the person bearing it. When reproduced by artificial inoculation, it loses its contagious power, in each successive inoculation, until the secretion from it is no longer inoculable. It will thus be seen, that the tendency of the disease, under favoring conditions, is always towards recovery. When acquired, under unfavorable conditions however, such as a depraved constitution, irregular life, filth, and alcoholic excess, the chancroid assumes its most vicious type. Characterized now by a high grade of inflammatory action and an increased destructiveness, it not unfrequently takes on a peculiar action which is termed *phagedenic*, through which, in a few days, or even hours, important loss of tissue ensues, not rarely resulting in irretrievable mutilation, and possibly in loss of life. In other rarer instances, the chancroid takes on a sluggish but persistent form, known as the *serpiginous*, with a gradual, irregular loss of tissue, involving the integument only, but continuing often for years in spite of every means and mode of treatment. The extension of the *chancroid*, usually by continuous tissue, not unfrequently takes place through the entrance of the contagious secretion into a lymphatic vessel (opened by chancroidal

ulceration), and its passage along that vessel to the adjacent lymphatic gland. This accident may occur at any period during the continuance of the chancroid. The gland, in this manner affected (usually in the groin, and known as the chancroidal bubo), becomes tender and swollen. Evidences that the peculiar destructive chancroidal action is going on, within the substance of the gland, become daily more distinct, until, in a few days, an abscess is formed. On the discharge of the purulent contents of this abscess, they are found to possess the peculiar properties of pus from the original ulcer, and the open bubonic abscess takes on the appearances and other characteristics of the typical chancroid.

The *venereal ulcer or chancroid*, in its early stages, is promptly amenable to judicious remedial measures. The application of any caustic, of sufficient power to destroy completely all the tissue which has been implicated in the diseased action, suffices to change the contagious venereal ulcer to a simple sore, when it goes on to recovery without other treatment than such simple sores require. The conditions which determine the severer forms of the chancroid, are recognized as already stated. It is also found that the particular lesion which may present, partakes in great degree of the activity, greater or less, which has characterized the lesion from which it was derived, so that every grade, from the simple excoriation to the sharply defined and most active ulcer, may be met. Hence, all do not require the prompt and energetic course necessary to arrest and cure the typical chancroid. In the milder varieties, the judicious application of carbolic acid, iodoform, sulphate of iron, and other, even simpler antiseptic, sedative, and astringent agents, may suffice to bring about an arrest and cure. In the lightest forms, it is often difficult to distinguish from non-venereal pustules which result from acrid sebaceous secretions, or from connection with a female suffering from an acute form of simple leucorrhœa.

In regard to its history, the chancroid is conceded to be of ancient origin, even to antedate the advent of *syphilis*. It has various synonyms—viz: "pseudo-syphilis," "soft chancre," "non-infecting chancre," "chan-

croid," etc. By the latter term, *chancroid*, it is almost universally known at the present day. It was distinctly recognized and described by the ancients as a disease known from the earliest times. Notwithstanding this, shortly after the recognized appearance of syphilis in Europe in 1492, it became confounded with that disease. Its purely local character was obscured, and it was subjected to constitutional treatment as a form of syphilis. Its chief characteristics, however, always most marked, were never quite lost sight of. Evincing its destructive property *at once*, on inoculation of its secretion upon healthy tissue, and commonly associated with inflammatory enlargement and suppuration of contiguous lymphatic glands, it was thus directly opposed to the sluggish course of the syphilitic local affection and its non-suppurating glandular concomitants. Yet it was so often found associated with and followed by, the constitutional manifestations of syphilis, that its distinctive significance was doubted. When, after a time, the well-known acute venereal ulcer was occasionally observed exchange its soft edge and base, for the indurated tissue known to characterize the early syphilitic lesion, the fallacious theory of *post hoc ergo propter hoc* prevailed, and thus the confusion of the two distinct diseases, became complete. From this time, *all* the contagious venereal diseases, gonorrhœa, chancroid, and syphilis, were accepted as practically identical, requiring the same constitutional treatment. It was found, however, after the habitual mercurialization of persons afflicted with soft sores or with gonorrhœas, for more than two hundred years, that constitutional syphilis did not necessarily follow the occurence of the soft ulcer nor of a gonorrhœa, even when no treatment was resorted to, while the ulcer with indurated base and edge was invariably succeeded by the general manifestations of syphilis. John Hunter in 1786 was the first to recognize, publicly, the value of the induration characteristic of the venereal sore which was followed by constitutional syphilis, thus making the first positive step, toward identifying and restoring to the different venereal disorders, their distinctive individuality. Hunter, however,

misled by an experiment upon his own person, taught that while the local manifestations of the venereal diseases were different, their source was identical, and that the peculiar form and nature which they assumed in any given case was dependent upon some peculiar condition or idiosyncrasy of the affected individual. In 1798, Benjamin Bell of London claimed a simple origin for gonorrhœa, and in 1830, M. Ricord of Paris, after a series of observations and elaborate experiments, in inoculating the purulent fluid of gonorrhœas, and the secretions of the soft and hard venereal lesions, demonstrated the purely simple, non-specific nature of gonorrhœa, thus completely and for ever eliminating it from among the manifestations of syphilis. Ricord, however, notwithstanding his numerous and carefully-observed inoculations, and while distinctly recognizing the local and ultimate differences between the hard, or Hunterian, chancre and the soft sore or chancroid, yet accepted and taught Hunter's view, viz., that the difference between them was not one of origin, but of personal condition or idiosyncrasy. It was reserved for M. Bassereau of Paris (a pupil of M. Ricord), to demonstrate in 1852, the fact that, in the disease then known as syphilis, comprising the soft local venereal ulcer and the indurated infecting venereal sore, with its consequences, two separate diseases existed. Upon the confrontation (*i.e.*, personal comparison) of a very large number of persons affected by venereal disease, with those from whom their disease had been acquired, Bassereau found that in every person presenting a venereal ulcer, accompanied by well-pronounced evidence of constitutional syphilis, the person from whom the disease had been acquired was also, or had recently been, the subject of ulcers which were followed by constitutional syphilis, and that in no case was syphilis ascertained to originate from a person bearing the soft venereal ulcer alone. Similar observations, by confrontation, were made by Messrs. Dron, Clerc, Diday, Rollet, and Fournier in 1856, and in 1857 by Messrs. Fournier and Caby, under the supervision of M. Ricord, with the result of proving that in all cases of chancroid, the type of ulcer remained unchanged in

passing from one individual to another. Nevertheless, M. Clerc, while accepting and confirming the observations above alluded to, claimed to have produced the typical chancroid by inoculation of the secretion of an infecting (syphilitic) chancre, upon a person previously the subject of syphilis, and thus to have demonstrated that the chancroid was the product of the inoculation of the syphilitic virus, upon persons then or previously affected with syphilis. Clerc also claimed, that, while, as a rule, the chancroid, thus originated, usually transmitted only chancroid, yet on being inoculated upon a healthy person, it was capable of reverting to its original type, and hence of communicating syphilis; thus asserting the unity of origin of the two diseases. Those holding this view were known as *unicists*. Rollet and others held, on the contrary, that not only were chancroid and chancre (the initial lesion of syphilis) separate and distinct diseases, but that they owed their origin to separate and distinct poisons. Thus the school of so-called *dualists* was initiated. The position of M. Clerc was supported by the observations of Henry Lee of London, the late Prof. Böck of Christiana, Melchior Robert, and others, who succeeded in producing the typical chancroid upon persons syphilitic and non-spyhilitic by inoculations of pus from an irritated syphilitic chancre. It was required that the degree of irritation in all cases should be sufficient to induce a free *purulent* secretion. Sores produced in this manner were inoculated, in successive generations, upon persons quite free from syphilitic taint, and behaved in all respects like the ordinary venereal chancroid. It was, however, found that when the superinduced irritation subsided, and the secretion was no longer purulent, it was no longer auto-inoculable. Hence it became evident that the property of inoculability was consequent upon a peculiar action resulting from the persistent irritation of an already diseased surface. The fact that the chancroid could be established upon persons entirely free from syphilitic taint, and not be followed by syphilis, demonstrated that its existence was not necessarily dependent upon the syphilitic principle. Experiments were then made by Pick, Bidencap,

Koebner, Böck and others, to ascertain the effect of inoculations of pus from simple lesions on persons free from syphilitic taint. The result showed that affections in non-syphilitic persons which are of slight virulence, the secretions of which are not inoculable, can be made to produce an inoculable secretion by the application of an irritant. Kaposi states that, in his experiments the pus taken from acne, and from scabies in non-syphilitic individuals, has produced pustules, the pus from which was inoculable in generations on the bearer as well as on other non-syphilitic persons. In 1866, Dr. Edward Wigglesworth, Jr., of Boston,* while studying under Prof. Zeissl of Vienna, and being entirely free from any suspicion of venereal taint, but in somewhat impaired general health, inoculated his own arm with pus taken from a simple pustule of acne. This produced a similar pustule at each of the three points of inoculation. Pus from these being again inoculated, a third generation was established. Nine distinct sores, the result of the inoculation, were present at the same time, and, pursuing a similar course, finally healed, leaving as many distinct cicatrices, indicative of loss of tissue through the process of ulceration. This experiment, during its progress, was under the personal observation of Prof. Zeissl, and was repeatedly exhibited to his class, as demonstrating the contagious and destructive properties of non-specific pus, under certain circumstances unconnected with syphilis, or with any venereal influence. Observations (personal) have shown that the muco-purulent secretion from non-specific nasal catarrh will sometimes produce excoriations of sound cuticle. That contact with secretions from non-specific leucorrhœas will sometimes promptly cause pustular eruptions (*herpes*) of the preputial mucous membrane of the male; and these more or less rapid in development and progress according to the degree of activity of the inoculating secretion. In some instances so simple that they are scarcely more than sero-purulent vesicles, and in other cases observed

* Reported by Dr. Bumstead in his paper "On the Unity and Duality of Venereal Sores," read before the Centennial Medical Congress of Philadelphia.

so vicious that in appearance they do not differ at all from the typical chancroid; the secretion being also *auto-inoculable*, as proven by the occasional occurrence of similar lesions upon opposing surfaces.

Mr. John Morgan of Dublin, in his work on venereal diseases (1873), cites numerous instances in which he has observed the typical chancroid to result from inoculation of the muco-purulent secretions of leucorrhœas in syphilitic women, upon other women, also subjects of syphilis. Vidal cites a case, where pus, taken from a pustule of simple ecthyma, in a patient suffering from typhoid fever, was promptly inoculable on the patient, but failed when inoculated upon a healthy person. It is therefore shown that the quality of pus is variable, according to the circumstances under which it is produced and the condition of the person upon whom it may be inoculated. That a low condition of the general system, from any cause, predisposes the healthy tissues to take on ulcerative action, and to elevate the accompanying purulent secretion, to a point of contagiousness. Lesions, especially of mucous membrane of the human genital apparatus, of both male and female, are common under the circumstances peculiar to the venereal act. Inflammations of mucous membrane, in the same locality, are frequent, and characterized by muco-purulent secretions, often profuse and acrid; and this, too, when the subjects of them are in good general health and living under the most favorable hygienic conditions. When, therefore, it comes to be considered that, the most frequent habitat of the chancroid, is in localities where venereal excess and every kind of debauchery abound: when to this are often added the potent element of syphilis and scrofula, hereditary and acquired, filth, and irregular living: and when (as has been shown by Fournier* and others) chancroid is found by far the most frequent in proportion to syphilis among the debased and dissolute, the conclusion is inevitable that chancroid is, and

* Fournier noted in his private practice, 82 simple, 252 infecting. In Hopital du Midi of 341 chancres, 215 were simple; and in the report of service in the same hospital, where 10,000 cases of venereal sores were treated, 8,045 were said to have been simple chancroids.

of necessity must be, a self-engendered disease, possessing no specific virus, but acquiring its power for destruction and contagion, through the stimulation and vitiation of benign natural processes.

The venereal ulcer, or chancroid, acquires its chief importance from its liability to be mistaken for, and treated as, the initial lesion of syphilis. The distinction between the two lesions at the outset is often impossible. The active characteristic of the chancroid is recognized as a necrosis—that of the syphilitic lesion one of growth or proliferation. The surface of a sore, then, may be the field of chancroidal action, while the living tissue beneath may be at the same time a centre of proliferation of syphilitic disease-germs, which are constantly gaining access to the general circulation through the contiguous lymphatic vessels. These germs may be originally deposited upon a simple abrasion or one already the seat of chancroidal action. If the former, the imposition of the secretion of a chancroid upon the same point, if the disease-germs have been freshly deposited, might cause their destruction, and thus leave only the chancroidal element; but once the syphilitic principle has extended below the surface and has entered a lymphatic vessel, it has gone beyond the sphere of action of the chancroid. The only method of determining whether a given chancroid or other lesion, occurring after a suspicious venereal contact, is or is not to be followed by constitutional syphilis, is to reserve a final decision for full forty days subsequent to the exposure. This course should be pursued even though during the interval the suspected lesion, possessing all the characteristics of the typical chancroid, should have fully healed. If, during time above specified, no hardening of the tissues composing the edge and base of the sore has taken place, nor, if healed, of the cicatrix, nor any enlargement of the adjacent lymphatic glands, can be discovered, then, and not until then, can the patient be assured that he has had an uncomplicated chancroid, and that no syphilis will follow. Those milder forms of ulcerative action which are just within the line of distinction between the simple so-called herpes and the chancroid, are the most frequent to exhibit subse-

quent evidences of syphilitic infection. By reason of their inactivity, they are less likely to destroy any of the germs of syphilis which may come in contact with their surface.

The frequent association of chancroid with syphilis will never lead to mistaken identity, if it is constantly borne in mind, that syphilis is always, in all its manifestations, a process of growth, of proliferation. The most scientific and critical examination of the products of syphilis, from the *initial lesion* to the *gummy tumor*, has never been able to detect any abnormal material. Nothing but excessive accumulations of tissue-building cells. Chancroid, on the other hand, from its inception to its cicatrization, is a process of necrosis—literally, *death* of tissue. So that *syphilis* and *chancroid* are always, and only, in relation to each other, as *life* to *death* —each the highest type of its own peculiar action.

LESSON XXV.

NATURE OF CHANCROID.

Evidence that it is non-specific. New foci of contagion essential to long continued reproduction. Difference between contagious ulcerations produced by various irritants and by contact with pre-existing chancroid only one of degree and not of kind. Changes in simple purulent lesions through non-specific causes may engraft a contagious property upon them which is practically identical with that of lineal chancroid. Cases in illustration.

Before proceeding farther it is essential that the nature of chancroid should be fully appreciated.

If it is a specific disease, that is to say, only capable of being set up through contact with the secretion of a previously existing chancroid, then acquirement of chancroid is proof indisputable of criminal venereal contact, either by the subject of it, or of the one from whom it was mediately or immediately contracted. It will at once be seen, that this is a point which may become of great importance in its medico-legal relations. It will then be worth our while to pass in review some of the known facts bearing upon this matter.

First let us determine exactly what is understood by the term *chancroid*. We may accept the usual definition, namely, that sores promptly following venereal contact, (from 24 hours to 8 or 10 days,) possessing the destructive and contagious property, are called *chancroid*, and are claimed, by certain authorities, to be due, in every instance, to a specific virus.

Fournier says this in the most emphatic way, thus: "If all the patients in the world with chancroid, would avoid contact with others, until their malady got well, the disease would cease from off the earth." This is quoted in a recent work on syphilis, etc., by Drs. Van Buren and Keyes, and emphasized by a positive statement that chancroid arises only from chancroid.*

* "Genito-Urinary Diseases with Syphilis." New York, D. Appleton & Co. Page 477.

It is known and accepted that chancroids vary in activity, from those which are highly contagious and rapidly destructive, to those which are feebly destructive and are inoculated with difficulty. This is a well-known clinical fact, and has been repeatedly proven in the experiments with artificial inoculations by Böck and others.* "A certain pus is employed ('chancroidal') and re-inoculated until it will no longer produce a pustule; *then fresher pus from some younger chancroid*, until it also fails." †

If this decadence takes place in the artificial inoculation, it is not reasonable to suppose that the same result would be reached by repeated inoculations through venereal contact. Hence the chancroid, by the continued re-inoculations of venereal contact, would grow less and less virulent, as communicated from person to person, until it finally died out.

Unless therefore new foci of contagion were created, *or new virulence added*, chancroid would long ago have *ceased from off the earth.* We must then take one of these two positions in regard to it; either some added virulence must be accepted as arising from circumstances connected with the venereal contact (since it has been conclusively shown that by simple re-inoculation chancroid speedily loses its contagious and destructive properties), or that from circumstances connected with venereal contact, new chancroids are originated. It is not necessary that we should be able to explain the exact combinations which increase the virulence of a declining chancroid, or which give rise to it *de novo*, in order to prove that certain possible conditions really do intensify and even originate chancroidal action or virus. If there is a difference between the behavior of the chancroidal virus, when inoculated by means of a lancet, and when inoculated through venereal contact, that difference can only be referred to the circumstances attendant upon the venereal act. How then do the circumstances differ in an artificial and in a venereal in-

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* *Bumstead* on Venereal Diseases, 3d ed, page 217 et seq.

† *Van Buren* and Keyes, p. 470.

oculation? In the first we have the virus inserted free from local or general circulatory excitement. In the second both are distinctly present. Under circumstances of equal cleanliness and equally free from undue tendency to purulence, the result might not be markedly different. But to the latter mode of inoculation, viz., that by venereal contact, we may have in addition, various potent influences, as such increased irritation from irritant leucorrhœal menstrual and preputial secretions, filth, excessive venereal indulgence. Each one of these added conditions is well known to be capable of initiating local inflammation, and of increasing inflammatory processes already instituted. It can even be shown that a combination of these conditions may originate a lesion which distinctly exhibits loss of tissue, and the secretion of which is capable of setting up a similar lesion on an opposing surface, therefore possessing the contagious property. If this can be proven, it seems to be clear that the difference between a lesion thus produced and the typical so-called *specific* chancroid is simply one of degree, and it may be logically claimed that circumstances which have been shown capable of setting up such a lesion and which are shown to add to the virulence of a declining typical chancroid, may, under favoring conditions, produce an actively destructive, promptly contagious lesion, that is to say, a typical chancroid.

Now it is a well-recognized clinical fact that certain conditions predispose to purulence. A lowered state of health, free from any disease, was shown in Dr. Wiggleworth's case, not alone to favor simple suppuration, but to be capable of producing pus of a distinctly contagious character.*

Persons affected with Syphilitic disease,* Scrofula, Scorbutus, chronic Splenitis, etc., are also predisposed to purulence; this can also be said of the subjects of every species of dyscrasia. Local conditions may also increase the suppurative tendency. Redundant preputial tissues, producing undue heat, moisture and friction,

* Lesson I. Page 6.

favor purulence; also, dependent position. Prof. Böck's experiments in inoculations of chancroid, showed that the higher upon the body inoculations were made, the less tendency to excessive suppuration and also to phagedena.

Again, it is a well-established fact that changes occasionally take place in purulent secretions, through which new qualities and powers are developed. Benign or 'laudable' pus may thus acquire a highly irritant property, as shown in the following case:

CASE I.—A gentleman presented to me some time since complaining of an inflamed condition of the glans penis and prepuce, which inflammation, as he said, followed every connection with his wife. On examination the preputial tissues were found to be redundant and the mucous membrane of the glans, as well as of its preputial reflection, was intensely congested and bathed in a muco-purulent secretion; this condition appearing at once after connection, increased, the parts becoming moist and painful and continuing more or less so for several days. The wife was said to be afflicted with a profuse purulent vaginal discharge. It was also stated by the patient that connection with his mistress was not followed by any such trouble.

Again in certain cases, instead of a diffused inflammation, we may find more strictly localized inflammatory lesions from a similar cause, as will be shown in the following case:

CASE II.—Mr. H. consulted me about five years since on account of a pustular eruption on the preputial mucous membrane near its attachment at the fossa-glandis. His first trouble had appeared about six months previously as a single pustule in the fossa on the right side. This was shown to a surgeon, who notwithstanding the patient's assurance that he had no connection except with his wife, promptly pronounced it a chancroid and cauterized it with nitric acid. Within a day or two several small vesicles appeared in the vicinity, when the surgeon came to the conclusion that the primary lesion *was of the* same character, and that all were herpetic. *The vesicles* also became pustular and healed under a

simple astringent dressing. There was a history of several subsequent similar attacks. In view of these facts the half dozen lesions presenting on his first visit to me (previously alluded to), although distinctly ulcerative, with inflamed border, and varying in size from a small split pea to a grape-seed, were considered of herpetic origin. The correctness of this view was confirmed by their rapid healing under simple astringent applications. A mild tannic acid lotion was preseribed as a prophylactic; which, however, did not prevent recurrence of the trouble within a week. This yielded like the previous, and a lead lotion was used with the apparent effect of preventing further trouble for nearly a month, when the patient, went off on a fishing excursion. On his return, some ten days after, he presented not only pustules on the site of the previous ones, but several on the glans penis *exactly corresponding to the locality of pustules on the preputial mucous membrane when drawn forward on the glans.* In addition there was a somewhat painful enlargement of the inguinal glands of the right side, attributed by the patient, to taking cold after resting the butt of his bass-rod, for several hours, in the groin of that side. The pustules healed somewhat tardily under repeated applications of nitrate of silver, but the glands went on to suppuration and the formation of deep sinuses. All healed, however, in a couple of months, when, three days after connection with his wife, another crop of pustules was discovered.

It was then suspected that the difficulty was the result of the connection, and upon a careful retrospect, the patient came to the conclusion that several, if not all of his previous attacks, had followed similar connection after about the same inferval.

On inquiry, the wife was found to have been, for the previous six months, under treatment for an obstinate uterine catarrh by a distinguished gynecologist, who fully confirmed my opinion, that contact with the acrid leucorrhœal discharge, had occasioned the husband's trouble. Her final recovery and his subsequent immunity from the so-called herpetic trouble fully supported this

conclusion. Both the gentleman and his wife were wholly free from suspicion of any illicit contact.

Another instance of ulcerated and contagious lesions from non-specific causes, will be recognized in the following case:

CASE III.—Mr. S., aged twenty-seven, had been married about two years when, after the birth of a second child, his wife suffered from a leucorrhœa which continued more or less troublesome for several months. In seeking my professional aid for himself, he stated that during this time he was subject to occasional attacks of herpes preputialis, and that whenever any abrasions occurred during connection, they were sure to be followed by points of ulceration, which only healed after several days' treatment by bathing and simple cerate. On examination, several sharply cut ulcers, from one to two lines in diameter, were seen on the preputial reflection and in the fossa glandis. There were also two on the glans penis, more recent and smaller, which matched exactly upon similar lesions on the preputial reflection, when the prepuce was drawn forward. The current attack was said not to differ essentially from those to which he was accustomed, except in that it was associated with enlargement of glands in both inguinal regions. One point, especially in the right groin, was inflamed, sensitive to touch and fluctuating. This was opened, and discharged a small quantity of laudable pus. The ulcerations healed under the influence of cleanliness and simple applications; the patient necessarily keeping at his business as book-keeper in a large wholesale establishment; but the glandular abscess, the only one occurring, lasted for a full month before healing was complete. The patient's general health was fair. No scrofulous or syphilitic antecedents. The only apparent cause predisposing to ulcerative trouble was a very moist and redundant prepuce, which was subsequently removed. Since the circumcision, now four years, there has been no reported recurrence of the herpetic trouble.

Again it would seem that ulcerations may occur, under certain circumstances, as a result of contact with *vitiated normal* secretions, as shown in the following:

CASE IV.—A gentleman who had been under my professional care for several years previous, and had no occasion to misrepresent his case, sent for me. He stated that he had a gonorrhœa acquired from an illicit connection with the wife of an intimate friend, thirteen days previous. On the completion of the act, the lady discovered that she was menstruating, and so remarked, with many expressions of regret. Some four days after, a little soreness was felt in the urethra, near the orifice, and in a day or two more, a whitish discharge appeared. He consulted a medical friend at his club, who after hearing of the exposure, pronounced the trouble gonorrhœal and treated him with capsules and injections. After ten days of this, getting neither better nor worse of the discharge, a tenderness and swelling of a right inguinal gland occurred. Through his wife's solicitation he sent for me; on examination I found a very scanty purulent discharge from the meatus urinarius, on opening which, a sharp-cut ulceration was seen just within the orifice, and about the size of a grain of rice; there was no urethral tenderness beyond this point. The gonorrhœal remedies were discontinued, and the lesion thoroughly cauterized with solid nitrate of silver. An inflamed gland in the right inguinal region, size of a walnut, was also present, no fluctuation; this was painted with iodine. Suppuration occurred after several days, and the abscess was freely opened, discharging apparently healthy pus. Auto-inoculation of this pus failed to produce any result. The urethral ulcer resisted repeated cauterizations for about a fortnight, and then healed. At about this time the wife began to suffer from painful urination, and an examination revealed a superficial ulcer of mucous membrane, the size of a three-cent piece, just below and infringing upon the meatus urinarius, secreting pus freely. The husband acknowledged to an attempt at connection on the evening following the illicit intercourse, but stated, that with this exception, it was the only one, except with the friend's wife, that he had for a full month. In addition, the lady had a swollen and inflamed inguinal gland in the right groin. The lesion at the meatus

urinarius was touched with pure carbolic acid, previously to which, however, the purulent secretion from it was inoculated on the thigh of the husband. The results of this inoculation were negative. Notwithstanding repeated applications of the carbolic acid, the ulceration in the wife progressed in depth and extent during the following ten days, until it invaded the urethral canal a full quarter of an inch; then an application of pure nitric acid was made. During this time, several more unsuccessful inoculations were made upon the husband. Much urinary distress occurred, and notwithstanding the application of the nitric acid, the ulceration progressed along the urethra, which in the meantime was treated by suppositories of iodoform and cocoa butter. The lady was in delicate health but without any recognized constitutional dyscrasia. Tonics were administered, but the suffering increased and the ulceration was advancing into the deeper part of the urethra. During all this time, the lady with whom the husband had the illicit intercourse and her husband had been calling almost daily, on visits of courtesy and condolence, and were both apparently free from any trouble. A distinguished surgeon, an authority on genito-urinary diseases, was then called in consultation. To my great surprise he stated it as his opinion that the ulceration in the wife's case was non-specific, and only a coincidence; not at all the result of contamination from the husband, but from other and accidental causes, and advised continuation of application of the iodoform: if this failed to benefit, a change of air, a sea voyage. No improvement taking place in a week, the parties made a sea voyage of but five days, and, without other treatment, recovery practically took place within a fortnight.

LESSON XXVI.

DOES DIAGNOSIS OF CHANCROID REST UPON CHARACTER OF LESION OR ON ITS SOURCE.—ANALYSIS OF CASE IN POINT.

Inoculability not a sure test as to origin of lesion. Clinical case in illustration of the fact that the elements of destructiveness and contagiousness do not depend upon a specific virus. Mode of development of chancroid. Varieties of chancroid. Modifications from syphilitic influence.

In the previous lesson, the diagnosis of simple origin, of the apparent chancroid, was made, in the last case presented.

It is, however, very evident that if no lesion is to be accepted as a chancroid, unless proved to have arisen from contact with a lineal * chancroid, the specific nature of chancroid may be accepted as demonstrated. The diagnosis, then, in any instance, will not rest upon the character of the lesion, but upon its source. Thus in the case cited, according to this ruling we have not a chancroid. A suppurating sore occurs in a lady who never before had an ulcerative lesion of any sort; it makes its appearance on the urethral orifice a few days after contact with her husband, who has a sore on his urethral orifice, which appeared a few days after a contact with another woman, and was followed by a suppurating bubo. It looks like a typical chancroid; it behaves like it, in its destructive tendency, in its advance and its retrograde under treatment, and its final cicatrization after about two months' duration, under improved hygienic conditions, and yet it is not accepted as chancroid, and why? First, because it is clearly not the product of a lineal chancroid. This is, of course, sufficient for those who thoroughly accept the specific nature of the disease; but there are others, who decide this lineal matter by the inoculability or non-inoculability of

* *i.e.* Descended in unbroken line from the first chancroid as claimed by those who assert its specific origin.

its secretion. With them the production of true chancroid, by inoculation of a given secretion, proves that secretion to have come from a chancroid. Assertions to this effect, would appear to be the result of experience among the class most prone to suffer from the results of venereal dissipation, where probabilities are all in favor of chancroid having been acquired from contact with chancroid, and among whom the contagious element of the chancroid is kept by various influences up to a high point of activity.

There can be, however, no question that chancroid, proven of direct lineal descent from a typical chancroid, may be met, which is inoculated with difficulty and which is but feebly destructive; that in point of fact, chancroid descended from typical chancroid is seen of every grade of destructive and contagious power. Experiments have proved that the true chancroidal virus gradually loses its power by repeated inoculation, and also that various conditions of health may prevent the success of inoculations with fresh virus and under circumstances otherwise favorable. "Susceptibility to inoculation is impaired, or even lost, temporarily, during the occurrence of any febrile attack or great depression of the vital powers." *

Susceptibility is also *increased* by constitutional dyscrasia, of *various* kinds: thus the syphilitic dyscrasia, it is well known, predisposes to purulence. Typical chancroids, destructive and inoculable in generations, have been repeatedly proven to result from the inoculation of pus from an irritated syphilitic chancre, also from the purulent secretion of secondary syphilitic lesions, and also from scabies and acne. Baumler, a recent German authority, says: "According to its source and mode of its origin, as well as the *susceptibility of the individual affected*, will the pus poison and evince this (chancroidal) property, *in greater or less degree. Whence the pus derives this property, in what it consists, and why all pus does not possess it alike, are questions yet to be solved.*" †

Inoculability, then, is not a *reliable* test as to the origin of a sore.

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* *Bumstead*, p. 317.
† *Zeimssen*, Vol. III., Am. Ed., pages 94 and 95.

Again, inoculation of a leucorrhœal secretion, especially from a cervicitis, or a metritis, has been claimed capable in certain instances of producing inoculable sores. This is further proven by the following extract from a distinguished authority:

* "In March, 1840, a woman from the neighborhood of Arles, aged 22, and remarkably beautiful in form and appearance, was thoroughly examined, as was supposed, by Prof. Lallemand, and no symptom of venereal disease was discovered. This examination was made at the request of an officer, who complained that she had infected him. Several similar complaints being subsequently made by others, she was sent to the police station, where she was again examined by M. Delmar, in the presence of a considerable number of students. *The neck of the uterus still appeared healthy*, but on pressing it with the speculum it discharged a muco-purulent fluid, which was inoculated, in four places, upon the patient's thigh, *with the effect of producing four well-marked chancroids.*"

In this connection it will be interesting to recall the cases in the previous lesson, where ulcerated lesions on the penis resulted upon contact with virtuous women, who suffered only with sub-acute metritis.

How do these women differ from the beautiful woman of Arles, as to the character of these uterine secretions? Contact with them produces sores proven to have a contagious property. Must we then say that they are subjects of chancroid in the interior of the cervix, or uterus? The woman of Arles communicated *chancroid*, because she had a uterine leucorrhœa, and because she was a prostitute, not because she had a chancroid. The most rigorous and repeated examinations failed to find any chancroid upon her, and yet she was *the source of chancroid to others.*

The man, whose urethral sore communicated a similar sore to his wife's urethra, had not chancroid, because his sore was acquired from contact with menstrual fluid under circumstances of unusual excitement, from a lady of supposed virtue, and not from a prostitute.

The foregoing cases and remarks are chiefly intended

* Bumstead, p. 359. 3d Ed.

as a preface to the final and important statement, viz., that the elements of destructiveness and contagiousness in a venereal lesion are not, in my opinion, dependent upon a *specific* virus, but are engendered by various causes and conditions, and that, clinically, we shall have to deal with venereal lesions in every degree of activity, which activity will be found to depend as frequently upon the constitution and circumstances of the patient, as upon the variety and origin of the sore from which the chancroid was derived. We may then say that *Chancroid*

1st. Begins as a destructive process, either upon a pre-existing lesion, or upon sound tissue. It is usually set up by contact with the purulent secretion of a *similar* destructive process, *which had a similar origin, or which may have been developed from a suppurative process of a lower grade.*

2d. The destructive process thus initiated (either upon sound tissue or upon a pre-existing lesion) proceeds steadily to the formation of a pustule, or an ulcerated surface, by a more or less rapid molecular necrosis. This necrosis, occurring under differing conditions, and in different localities, gives rise to characteristic forms of the chancroidal lesion, which may be described as follows, viz.:

1st. *The Chancroidal Abrasion;* 2d. *The* PUSTULAR *Chancroid.*

These may be again divided into the *slowly destructive* and the *actively destructive* varieties. We may have as modifications of these,

From Condition.	From Locality.
The Indurated Chancroid.	The Follicular Chancroid.
The Inflammatory "	The Papulo Pustular "
The Gangrenous "	The Ecthymatous "
The Phagedenic "	The Sub-Preputial "
The Serpigenous "	The Chancroidal Bubo.
	The Bubonic Chancroid.
	The Urethral "
	The Rectal "

The Ex-Ulcerous Chancroid of Clerc, and the Ulcus Elevatum.

Modifications of all the foregoing forms and varieties *by the coincident development* of implanted syphilitic elements on the site of the chancroidal lesion.

LESSON XXVII.

ORIGIN OF THE CHANCROIDAL ABRASION.

Most frequent localities of chancroidal abrasion. Physical appearances. Pustular chancroid. Mode of origin. Clinical case in illustration. Chancroid divided into two varieties according to activity of destructive process. Cases in illustration. Character of chancroid dependent upon its source. Chancroid modified by various influences and causes.

Abrasions of mucous membrane are frequent as the result of violence during the act of coition: they occur most frequently about the fourchette and the vestibule of the female, and about the preputial orifice, and the frenum, and along the preputial reflection of mucous membrane in and behind the fossa glandis in the male.

All injuries of this character, on being brought into contact with the secretion of an active chancroid, are at once inoculated, and the suppurative action is thus initiated over the entire surface of the lesion. It is to the abrasion, thus complicated, that the term *chancroidal* is applied. To the naked eye it appears at first like a simple scratch or chafe, but an examination of its secretion shows abundant pus corpuscles, within three or four days, and often within twenty-four hours. By the aid of a good magnifying glass the advancing molecular necrosis may be seen, in the dentated edges, in the minute sloughing points on the surface of the lesion, and the secretion is inoculable. Sooner or later, in accordance with conditions which are known to render chancroidal lesions more or less active, the abrasion may be merged into the characteristic chancroid. Its shape, which at first corresponds with that of the surface inoculated, now changes, through the advancing ulceration. The edges become ragged and abrupt, the floor, excavated and covered with the débris of disorganized tissue, gives rise to a profuse secretion of pus. The time for these changes in different cases may vary from a few days to several weeks.

ORIGIN OF THE PUSTULAR CHANCROID.

The pustular chancroid arises either from the erosive property of the chancroidal secretions which have been deposited in the folds of integument or mucous membrane, or from the absorption of the secretion into the follicles of mucous membrane, which have been bathed in the secretion of chancroid.

The time of its appearance after contact varies from three or four days to eight or ten, and in certain authentic instances even longer.

The follicular starting point of the disease, assumed by Cullerier, Bumstead, Acton and others, has been substantiated by a case which came recently under my observation. Mr. W—— came to me complaining of having bruised his glans penis during a connection four days previous. On the morning following the indulgence the part felt very sore and was swollen and inflamed. These conditions had been gradually increasing in intensity, until he presented his case to me. I found the inferior portion of the glans much tumefied, from the meatus back to the fossa glandis, and for half an inch on either side of the median line (the frenum had been smoothly carried away by a chancroid ulceration, for which I had treated him a year previous). The injured part was swollen, and presented a smooth, shining surface of a deep red color. By the most careful examination, with the aid of a magnifying glass, I could not discover any point of abrasion or solution of continuity whatever. I advised a simple water dressing, slinging up the penis, so that engorgement from the dependent position of the organ might be relieved, and as perfect rest as possible obtained. He called on the following day, somewhat relieved, but in appearance the parts had not improved; the color was even deeper than on previous examination. A wash of lead and opium was substituted for the water dressing, and the patient advised to keep the recumbent position. On the next *day, the* third from his visit to me, and the seventh *from the* impure connection, he again presented him-

self. The tumefaction was much the same; the color had deepened and was now of a violet tinge, and I discovered, as though under a glass, numerous pale whitish points varying in size from a pin's point to a pin's head, occupying a space a quarter of an inch broad and one third in length on either side of the median line on the inferior aspect of the glans. Previous treatment was continued, and I saw my patient daily for three days following, making in all *ten* days from the connection. On the morning of the tenth day I discovered some half a dozen whitish points *just underneath* the mucous membrane; these were then opened into with a fine-pointed bistoury, and discharged minute quantities of pus. Under the magnifying glass, the little cavities left after the discharge of the pus were characteristic of chancroidal ulceration. In brief, all the points, some twenty or thirty in number, finally worked their way to the surface, occupying some three days longer, and they soon coalesced from the extension of the ulcerative process, resulting in a true chancroid, three fourths of an inch in length, by one third of an inch in breadth, occupying the site of the original white points. The first pustules were visible through the mucous membrane, but evidently deeper than its thickness, on the seventh day after the absorption. The first of these came to the *surface* on the tenth day, but it was not until the thirteenth that all had reached the mucous membrane on their outward march. Applications of the strong nitric acid resulted in a complete recovery in a few days. Occasionally single, chancroid is accompanied as a rule, or soon followed, by others, in the immediate vicinity or at different points. Commencing usually as a fine whitish speck, scarcely larger than a pin's point, it soon increases in size, and, unless occurring on an already inflamed surface, presents a distinctly inflamed border. Its progress (more or less rapid, according to circumstances and conditions which are known to increase or retard its activity) is by an acute ulceration, before which the tissues give way in irregular form, both at the edge and floor (as heretofore described in case of its advance from a previously

abraded surface), accompanied with more or less local inflammation and pain. Its progress, like that of the chancroidal abrasion, is variable. In typical cases, under circumstances of usual health and condition, reaching to the size of a five-cent piece, and penetrating to the depth of one or two lines, in the course of three or four weeks, while, under other circumstances, its depth and its extent may be greatly increased.

These peculiarities of the action of the chancroid are the same, whether beginning on an abraded surface or as a pustule, and warrant the division of chancroid into two forms previously noted, viz., the *slowly destructive* and the *actively destructive.*

To show you that this division is not simply a technical one, I will recall four cases presented to you at our last two sessions, which illustrate the validity of the distinction.

CASE I.—Wm. B., waiter, about 25 years of age, gave a history of exposure through vicious sexual contact, eight weeks previously. Four or five days after, he noticed several white pimples on his prepuce behind the *fossa glandis.* He touched them with "blue stone" from time to time, and after a week, others came on his glans penis. He then used a wash and kept them clean, but they refused to heal until he went to Charity Hospital, about a week ago, seven weeks, after their appearance. Here the sores on the prepuce were cauterized, on several occasions, with nitric acid, also three about the size of a pea on the glans. His general condition as he came before us was fair, not rugged. He presented several superficial cicatrices on the internal reflection of the prepuce, and a raw surface about the size of a three-cent piece, yet unhealed, but granulating well. On the glans, were three fresh cicatrices, which, as I was careful to show you, matched exactly upon three distinct cicatrices on the prepuce when drawn forward. This case I presented as chancroid of the first variety; demonstrated as slowly destructive and also contagious, as proven by auto-inoculation.

CASE II.—A blacksmith, aged 45, was shown you in

contrast. A large pallid man, evidently in low condition. Just two months before, he also had a connection, and no trouble resulted for the next ten days, when his attention was attracted to his penis by soreness. He then discovered three inflamed pimples, one on a redundant prepuce and two on the body of the penis. These progressed steadily, and thinking they were simple boils, he neglected them until the scabs came off a few days ago, when he found deep ulcerations in their place, each as large as a dime. He was admitted to Charity Hospital, and the sores, which were recognized as typical chancroids, were cauterized with nitric acid. When shown to you, three days after, they were still of same size before mentioned, and fully one fourth of an inch deep, penetrating fully and sharply the swollen integument. This case was presented as illustrating the *actively destructive* variety of chancroid. With much the same history as the first, it was yet seen to be in marked contrast with it in regard to the activity of the destructive process. There was no history of any antecedent syphilis in either case.

CASE III. was of a lad of twenty. He was in good health, history of an impure connection four weeks previously. A pimple near the frenum appeared five or six days after; this he treated with repeated applications of "blue-stone," and it healed in a couple of weeks, having carried away the frenum. A soreness of the right groin then set in, and culminated in an abscess; this I opened before you, discharging about an ounce of unhealthy looking pus.

Both its appearance and course were spoken of as characteristic of the chancroidal bubo. The locality of the original sore was pointed out, as one most liable to be followed by such an accident, inasmuch as the lymphatic vessels, connecting this point with the glands of the groin, are known to be numerous and superficial. No other cause for such a complication could be elicited.

CASE IV. presented to you last week came to our clinic the week previous, too late in the hour to be available as an example. The young man, 25 years of

age, gave a history of impure connection the week previous, and had just discovered a little sore just within the urethral orifice. A little feeling of hardness associated with this sore and the long interval since the connection, gave rise to suspicion of syphilis. In order to clear this up, two inoculations were made under the left nipple of the patient by Dr. Bangs, our chief clinical assistant, and the patient was ordered to report on the following Saturday, two days after; this he failed to do. He was presented to you one week after, with a sore that had penetrated fully one third of an inch, and had completely carried away the right side of the meatus, exposing the urethra for that distance. The attempted inoculations, as shown you, were wholly abortive, although as I saw them one half hour after the puncture, they were surrounded by a congested areola half an inch in diameter.

This case I presented as demonstrating several points: 1st. The long interval of apparent incubation. 2d. The slow progress of the lesion up to the week previous, thus marking it as belonging to the slowly destructive variety of chancroid, if it were chancroid. 3d. The sudden change from the slow to the actively destructive variety. 4th. The failure of a carefully performed inoculation of the secretion of the lesion upon the person of the patient, thus going to prove that a destructive chancroid may under certain conditions fail to give an affirmative proof by inoculation, as claimed by Böck and others.

Now while I do not present these cases as absolutely proving the points I desire to illustrate, as there may be various valid objections urged against them, yet I claim that they form links in a chain of evidence showing that chancroid is of variable quality and force, and also that the quality and force is determined not by any specific virus but by circumstances and conditions. It will be well for all who study and treat this disease, to be cognizant of this, and to consider the causes which are known to effect the degree of destructiveness and contagiousness in each case, instead of attaching too *great* importance to the dogmatic and unsupported

assertions, of those who claim one continuous lineal descent, for all inoculable and destructive venereal sores.

It may, I think, be safely claimed that the character of a chancroid is greatly dependent upon the degree of activity of its immediate predecessor, and that it may itself be modified or intensified by the following influences:

1st. General condition of the person so inoculated, especially in relation to any diathesis or dyscrasia.

2d. Locality of the inoculation.

3d. Influence of alcoholic stimuli, low and irregular living, etc.

4th. Local sources of irritation, such as standing at work, walking, or horseback exercise, indulgence in coitus, uncleanliness, etc.

5th. Application of external irritants, administration of internal medicines, especially mercurials.

For the convenience of description, various names have been applied by authors to designate the several modifications of chancroid. These have been already cited, and will be seen to fall naturally under two heads, as modified by condition and locality.

LESSON XXVIII.

MODIFIED BY CONDITION.

Chancroid modified by condition. Characteristics of simple chancroid. Induration produced by irritation. Differentiated from syphilitic induration by results of treatment. Inflammatory chancroid. Description of. Causes of. Gangrenous chancroid. Causes of. Characteristics of. Phagedenic chancroid. Definition of. Characteristics of. Cases in which it usually occurs. Serpigenous chancroid. Description of. Causes of.

FIRST: THE INDURATED CHANCROID.

The uncomplicated chancroid has a soft base and edge differing in suppleness but little, if at all from the surrounding tissue. In this condition we have a valuable diagnostic mark separating chancroid from the initial lesion of syphilis, which, in typical cases, presents a distinct induration of the tissue on which the lesion is located. Venereal sores often present, however, about which a varying amount of induration is present; not seldom occurring at an early period in a chancroidal lesion, before the loss of substance is well marked, or coming on later, in a well-marked chancroid, giving rise to suspicion of underlying syphilitic action. It is well then to understand, that such induration may result from any form of irritation, and may be a purely inflammatory aggregation of cell material. Chancroids thus complicated are termed *indurated.* The test of the nature of the induration, in any case, is by simple treatment. If the induration is thus rendered more dense and sharply defined, it will prove, as a rule to which there are few exceptions, that it is the result of true cell growth caused by the syphilitic influence, and that the lesion is either the initial of syphilis complicated by accidental ulceration, or that it is a true chancroid complicated with syphilis.

If, on the contrary, the induration disappears wholly under the influence of rest and local sedatives, and the

sore heals without subsequent induration, it is of an inflammatory character, and the lesion so complicated is proven of purely local nature, and has thus been but an *indurated chancroid.*

SECOND: THE INFLAMMATORY CHANCROID.

Instead of becoming indurated under various causes of irritation as in the previous variety, the tissue surrounding and underlying the chancroid may become more tender and swollen, assuming a puffy appearance, and the surface more intensely red and extended.

This condition may supervene upon any stage of chancroid, whether slowly progressing or healing, and is the evidence that a more rapid destructive action has been initiated, or is imminent.

The same condition may obtain, on the early appearance of the chancroid, as a result of intensity in the secretion inoculated, or from constitutional taint, excess, sexual and alcoholic, as well as from local irritation.

THIRD: THE GANGRENOUS CHANCROID.

This is but the fruit of the unrelieved inflammatory form, usually the result of interference with the circulation of the part by swelling and inflammatory infiltration of the tissues, in which case, sloughing of contiguous structures occur *en masse;* especially is this apt to take place in debilitated and dissipated subjects. When occurring upon persons in good condition, it is the result of some mechanical constriction, as in case of subpreputial chancroids complicated with phimosis.

The occurrence of gangrene, in such case, once announced by the fœtid odor, if not arrested by treatment, will require but a few hours for the deep red surface of the inflamed prepuce to turn black, and the slough to disintegrate and separate from the living tissue, at or near the line of constriction. The effect of the gangrenous accident, is to destroy all contagiousness in the associated chancroid, and the parts heal, after the falling of the slough, as if no such complication had been present.

FOURTH: PHAGEDENIC CHANCROID.

This term is usually applied to all chancroids which progress with unusual rapidity. Hence it is made to include all degrees, from the inflamed chancroid, to that form in which a sloughing of tissues takes place *en masse*. Instead of a simple death of tissues through arrest of circulation, it is the result of an added destructive element, in some respects similar to that which causes hospital gangrene. It is characterized, in the milder forms, by gradual advance in destruction of tissues, in spite of the ordinary treatment, and of circumstances favorable to recovery; still further by the occurrence of a putrefactive change. This is heralded by a mawkish and, finally, by a distinctly gangrenous odor and an increasing rapidity of the destructive action in all the dimensions of the lesion, involving any and all tissues and vessels. Progressing in aggravated cases with great rapidity; destroying important parts even within a few hours. Accompanied, whenever the loss of tissue is at all considerable, by pain often very great, and by more or less general constitutional disturbance. This grave complication, is confined almost wholly to subjects of intemperate habits, who have also been subjected to low conditions in living, although it may take place in persons who, while living under favorable hygienic conditions, are of scrofulous habit; or it may be the result of contamination from the secretion or exhalations from similar processes.

FIFTH: THE SERPIGENOUS CHANCROID.

This a variety of the phagedenic, which is quite independent of any tendency to sloughing or gangrenous action, and is confined solely to the integument. It is recognized, in its early stage, by obstinate resistance to treatment. Progressing very slowly, and superficially, healing on one side under treatment, while progressing on the other; healthy-looking granulations springing up here and there—even little islands of healthy-looking *tissue appearing*, apparently as the result of some effi-

cient application, and then melting away under its continuance. Finally, in certain cases, creeping over large tracts of integument, the groins, perineum and buttocks, and in forms which have suggested the name of this complication. The secretions of this variety of sore are thin and copious, but not inclined to form incrustations. They have the power of producing a chancroidal sore by auto inoculation. It does not necessarily produce the serpigenous variety when inoculated upon other persons. The subjects of this accident are usually of a scrofulous diathesis.

The modifications of chancroid, from locality, are chiefly important in regard to treatment.

LESSON XXIX.

DIAGNOSIS AND TREATMENT OF CHANCROID.

Difficulties in diagnosis. May be confounded with herpetic lesions. Treatment of. Modified by condition. Reasons why insignificant lesions often require great consideration. Management in early stage. Treatment by excision, by cauterization. Best methods described. Character of subsequent treatment. Various applications. Diagnosis and treatment of the indurated chancroid, of the serpigenous chancroid, of the follicular chancroid, of the papulo pustular variety, of the ecthymatous form. Diagnosis and treatment of sub-preputial chancroids. Possible source of error in diagnosis.

When seen in the earliest stage—viz., the Chancroidal Abrasion—it is difficult, and often impossible, to decide whether it is the result of irritation through some vicious vaginal secretion or lesion other than chancroid, or not. Hence all lesions, first seen as abrasions, should be treated tentatively, until the characteristic chancroidal ulceration surface is developed. A mild, astringent sedative lotion, say three grains of the acetate of lead to the ounce of rose water, may be applied on a thin film of borated cotton three or four times a day. If the lesion is a pustule, and has made its appearance a day or two, or three or four after exposure, it may be of herpetic origin. A single herpetic pustule is not very common. A solitary pustule, following five or six days after a suspicious connection, is more apt to be chancroid. Careful examination will sometimes detect one or more little vesicles, or their remains, in the immediate vicinity of the pustule. This warrants the inference that the pustule had its origin in a vesicle, and was thus of herpetic nature and not chancroid, which always *begins* as a pustule. We may venture, in such case, to expect that simple treatment will suffice, especially if to this is added rest and freedom from irritation of every kind. Nothing is more essential, in the treatment of any inflammatory lesions, than rest and cleanliness. This is eminently true of chancroid, and all the lesions that may be mistaken for it.

If the suspected lesion *increases*, in spite of rest, cleanliness and a mild sedative lotion, it is safe to include it at once under the class Chancroid. If it is inclined to be superficial and sluggish, we will designate it as of the slowly destructive variety, and treat it with a solution of sulphate of iron, applied on a film of cotton two or three times daily. This, or an application of a mild solution of carbolic acid, is often promptly curative. If there is much redness or tenderness, the watery extract of opium may be added, thus:

℞ Ferri Sulph. grs. X.
Ext. Opii Aq. grs. X.
Aq. ad. ℥ i.
M.

℞ Acid Carbolic, grs. V.
Sol. Morph, U.S.P. ℥ i.
M.

The general condition should also be considered. If there is reason to suppose the patient especially inclined to suppurative trouble from scrofulous diathesis, or from general debility, or personal idiosyncrasy, in addition to any measures addressed to the general health, it may be well to administer small doses of the sulphide of calcium, $\frac{1}{10}$ gr. every two hours, either in freshly made solution or in parvules. These measures, even in the very slight forms of suppurative lesion (which are oftentimes difficult to distinguish whether of true chancroidal origin or not), will in some cases be found worth considering and adopting. Many cases of most insignificant character, in a surgical point of view, cause great anxiety and mental suffering, and should be met, at the outset, with the greatest consideration from the surgeon, not only because of conditions present, but because of the *possibilities* that these innocent-looking lesions may hide the progress of a syphilitic inoculation. If under the above mentioned mild applications, the sore (or sores, as there are commonly several) heals rapidly or slowly, and, finally, cicatrizes completely, it is yet most important to keep in mind the fact, that sometimes, just such lesions, even weeks after an apparent cure, begin slowly to in-

durate and finally demonstrate that a syphilitic infection has been initiated. It is by no means infrequent that such an accident occurs under cover of a supposed chancroid or an herpetic eruption; or an abrasion irritated into seeming viciousness, by simple vaginal secretions, or a want of cleanliness or care.

If, however, the lesion shows early, that it belongs to the actively progressive variety of chancroid; if it becomes sensitive, and progresses in depth and extent, with undermined and irregular edge, and worm-eaten, sloughy floor (and this may often be seen under a good magnifying glass a short time after its appearance), active measures are often promptly curative. If the ulcer is situated on the free margin of the prepuce, it may sometimes be removed by excision—previously cleansing the parts with a 10-grain solution of carbolic acid—and cutting through the entire thickness of the prepuce, then stitching the edges together. Union by first intention may thus be secured. Great care will be necessary to prevent inoculation of the cut surfaces, *in which case, the chancroid will be greatly increased.* When situated on the reflection of the prepuce, or in the fossa glandis, or on the glans penis, or in the vicinity of the frenum, or in any locality on the male or female genitals, where they may be thoroughly and easily exposed, and when the inflammatory action is not great, the complete destruction of the chancroid—one or more—should be effected at once. The best and most convenient means is by application of the strong nitric acid. The solid nitrate of silver stick is often used for this purpose. This is not sufficiently powerful to be depended upon. The actual cautery is excellent, but formidable, requiring ether, to be well borne. The nitric acid may always be at hand, and is, when well applied, thoroughly efficient in the great majority of cases. A convenient method of application is by means of a film of cotton, wound upon the point of a sharpened match or a wooden toothpick, using only enough to hold a drop or two of the acid. It may thus be carried to the surface of the chancroid without danger of dropping on healthy tissues. Apply freely and let it soak in, until the floor and edge

are completely saturated, repeating the application, if necessary, until this is effected. A small chancroid requiring a minute or so, but one the size of a dime may require several. If favorably situated, the size of the lesion does not contraindicate the attempt to destroy it in this manner. When the saturation with the acid is complete, a bit of cotton, soaked in a solution of acetate of lead and extract of opium—10 grains each to the ounce of water—may be applied. If the sores are multiple, or large, placing the patient under the first effect of ether, for the application, is very desirable. The resulting slough, usually falls off within from three to five days, and, if the application has been effectual, a healthy granulating surface will be left. This heals readily under the slight stimulation of a weak solution of carbolic acid—5 grains to the ounce. Should the ulcerative action show a disposition to return, a second application may be made. This may even be required a third or a fourth time, if great care has not been taken to destroy all the tissue involved in the chancroidal process. If, instead of active destructive action, there should simply be a sluggish and unhealthy condition of the sore remaining, this will be best treated by applications of iodoform in powder or in combination with equal part of vaseline:

℞ Iodoform, ʒi.
Vaseline, ʒi.
Oleum Rosæ. X.
M.

or

Iodoform, ʒi.
Balsam Peru, ʒi.
M.

If the secretion is very profuse, 10 grains of tannic acid may be added. The odor of iodoform is often an insuperable objection to its use. The addition of balsam Peru, or a few drops of any of the essential oils—lavender, bergamot, neroli—or ten grains of thymol to the dram of iodoform, will sometimes make it endurable. But the best deodorizer for iodoform that I have found is the oil or attar of roses, in the proportion of one drop of the oil to ʒi. of iodoform. Nothing favors the best results of applications, and the most rapid healing, so effectually as complete rest of body and mind.

DIAGNOSIS AND TREATMENT OF THE INDURATED CHANCROID.

One of the chief diagnostic points in chancroidal sores, is the freedom from positive induration; a suppleness of the tissues on which they are situated. A certain degree of induration, however, may be present from irritant or even astringent application, or friction by the clothes of the patient, raising the question as to whether or not this is the result of syphilitic infection. In such cases the sore should first be treated by removal of all irritating surroundings, by rest, and an application of the lead and opium dressing. If the induration is not syphilitic, it will pass off under this treatment, when the destructive method may be pursued as previously indicated.

The neglect of cleanliness, undue exercise, long standing position or irritant applications, irregular hours, or alcoholic excess, especially in persons of dissipated habits and low generni condition, often causes a highly inflammatory condition of the chancroid. The immediate result of this, is to increase pain and swelling of the tissues in the vicinity of the chancroid, and to accelerate the destructive action. Soaking the parts with opiated water as hot as can be borne, and as continuously, with attention to the general care of the patient, is the most prompt way of reducing this complication. If the lesions are upon a female, prolonged hot sitz baths are essential.

DIAGNOSIS AND TREATMENT OF THE PHAGEDENIC CHANCROID.

If relief does not follow, the phagedenic condition may be superimposed upon the inflammatory. Still more rapid, destructive action with putrescent odor, the true "molecular gangrene" takes place as alluded to in the previous description of this form of chancroid. When rapid destructive action is thus set up, and important parts are threatened, a prompt and thorough soakage of the shreddy, pultacious, sloughy surface with strong nitric acid, is indicated, or, better still, an application of

the actual cautery, repeated from time to time, until, by application of hot water, or by the aid of charcoal poultices, the slough is removed. Free use of the iodoform in powder is also efficacious, not only for its disinfectant but for its anæsthetic effect. The pain in rapidly destructive lesions of this sort is often very great, and the internal administration of opium acts beneficently. Twenty-grain doses of the potassio-tartrate of iron, as recommended by Ricord, may usually be administered to advantage. At Charity Hospital, the treatment by immersion in hot water by means of the sitz bath, with the water kept up to 100 F., has proved one of the most effective adjuvants in the treatment of sloughing phagedena in females, (in whom applications are usually most difficult,) keeping the patient in for even ten or fifteen hours consecutively, and practically the same method for males.

DIAGNOSIS AND TREATMENT OF THE SERPIGENOUS CHANCROID.

This is notably the most rebellious to remedies of all the forms of venereal lesion. The size to which it insidiously attains under the usual treatment for superficial slowly destructive chancroids, (iodoform, carbolic acid, etc.,) is apt to cause a hesitation in resorting to applications of nitric acid, acid nitrate of mercury, or any of the destructive agents in ordinary use for the treatment of chancroids. The apparently healthy granulations which spring up in the sore, and which often go on to production of new integument at one side, even while it is slowly melting away at the other, flatters the surgeon into the belief that mild measures, with appropriate constitutional treatment, will finally effect a healing. The result is, that serpigenous chancroids are occasionally met which have existed for years, and have come gradually to occupy many inches of surface.

Especially is this seen in females, where the groins, the perineum, the entire vulva, the vaginal walls, the rectum, and the integument around the anus, may be continuously involved. Few venereal hospitals, or out-door

departments, are without specimens of this sort. Passing usually under the title of *chronic chancroid*, (to which a suspicion of obscure syphilitic constitutional vice is usually attached) they finally, in most cases, cease to receive any especial surgical care, and are often relegated to the class of incurables. The actual cautery is the one and only effectual remedy in the treatment of serpigenous chancroid, no matter what the size or locality. Placing the patient under the influence of an anæsthetic, thoroughly apply at a white heat the cautery iron, or the platinum point of the gas, or the galvanic cautery, over the entire surface, following down into every crypt and sulcus, with the same animus as if dealing with a well-marked case of *lupus excedens*. Follow up with hot water immersions, sedative lotions, iodoform, etc., until the slough has separated, and as long as the new surface appears in satisfactory condition. If a retrograde is threatened, re-apply the cautery, as often and as long as is necessary. This will not usually be required oftener than once in one or two weeks. Several cases within my experience, that had been considered beyond the reach of surgical aid, were, in this way, finally brought to a complete cure.

The modifications of chancroid from location are noteworthy: first, in regard to diagnosis; second, in regard to treatment.

DIAGNOSIS AND TREATMENT OF THE FOLLICULAR CHANCROID.

This commencing apparently underneath the mucous membrane, may quite readily escape observation, especially when it commences deep in the substance of the follicle. The inflammatory swelling and redness often precedes the appearance of the pustule several days.

DIAGNOSIS AND TREATMENT OF THE PAPULO-PUSTULAR CHANCROID.

This is most often seen on the integument of the labia majora, and the mons veneris, of females. They are usually

sluggish in character and quite inclined to burrow. They originate in a follicle, and are occasionally quite numerous, a dozen or more appearing at about the same time, and usually in connection with previously existing chancroids of considerable size, within or about the vulva. No applications have any effect which are not preceded by removal of the small scab and discharge of the contents of the pustule. After this, the treatment may be by prompt destructive agents, or by iodoform. If they are not discovered and treated early and effectually, the probabilities are in favor of coalition of the pustules, extension of the chancroidal process, and a stubborn persistence of the trouble.

DIAGNOSIS AND TREATMENT OF THE ECTHYMATOUS FORM OF CHANCROID.

This is covered by a broad thin brownish scab, is usually on the integument of the penis or on the thigh, and may be mistaken for a simple herpetic lesion. Removal of the scab shows the characteristic chancroidal appearance of the edge and floor of the sore. Very often it belongs to the slowly destructive variety of chancroid, penetrating the thickness of the integument, or nearly so, but without much tenderness or surrounding inflammation.

Treatment by prompt destruction of the diseased tissue, if active. If sluggish, application of iodoform, pure, or in combination with tannin, or balsam Peru, or by carbolic acid and glycerine, equal parts, applied in the same way as directed for use of strong nitric acid. For the same purpose, a solution of permanganate of potass, 2 grs. to the ounce of water, or sulphate of copper, 2 to 5 grs., may be applied on a little borated cotton or lint. This if on the penis should be protected by a thin wrapping of oiled silk, retained by a narrow cotton bandage, the end of which may be conveniently split into four tails, brought around, and tied.

DIAGNOSIS AND TREATMENT OF SUB-PREPUTIAL CHANCROIDS.

These require especial instructions for management,

only when, on account of the narrowness or swelling of the preputial orifice, they cannot be readily exposed. If the phimosis is congenital, the existence of sub-preputial chancroids may be infered by more or less swelling and tenderness following a suspicious sexual connection. The two difficulties with which they may be confounded are, balanitis and initial lesion of syphilis. Mild astringent sub-preputial injections, as, 5 gr. solution carbolic acid, 10 gr. solution of sulphate of iron, or the lead and opium solution, may be used. If the phimosis is inflammatory, persistent soakage of water as hot as may be comfortably borne will also be required. If the reduction of swelling finally permits exposure of the affected parts, they may be treated according to conditions presenting. If, on the contrary, the swelling and sensitiveness increase, and blood is mixed with the secretion—and this in spite of rest and fomentation—no time should be lost in slitting up the prepuce on the dorsum, previously syringing out the preputial cavity with a 10 grain solution of carbolic acid. The division may be done with the bistoury, and the cut surfaces thoroughly dried and cauterized with pure carbolic or nitric acid. But the best way of dividing the preputial tissue in such case is by introducing a bit of pure platinum wire, perforating the prepuce at the base of the glans superiorly, and attaching it to the galvanic cautery battery and drawing it slowly through the intervening tissues. A small wooden tube, wetted, may be slipped over the wire to protect the glans. Should the lesion be situated on the inner surface of the prepuce, or should the slitting not expose the whole diseased surface, the circumcision may be completed with the wire, or with a bistoury if preferred.* Should the lesion prove to be chancroid, the danger of inoculatiou of cut surfaces is always great,

* A case of threatened sloughing of the prepuce from chancroidal action in its interior, occurred in my service at Charity Hospital not long since. The swelling was enormous, and extensive destruction of tissue was imminent. The whole prepuce was removed by means of the galvano-cautery wire, without hæmorrhage. Several chancroids in the fossæ glandis were cauterized at the same time. The case went on to a rapid and complete recovery under antiseptic and simple applications.

no matter what are the precautions taken; but the danger of damage to the glans penis, through the chancroidal action, if not arrested, by relieving tension and by potent local application, is so great that the inoculation of the entire cut surfaces is a lesser evil. The after-treatment of the circumcision, under such circumstances, is the same as ordinarily pursued, until some evidence of chancroidal action is manifest. In this and in the chancroids or other lesions which may be left on the glans or elsewhere, the same application already described for the lesions on open surfaces, will be required. It must not be forgotten that an initial lesion of syphilis, irritated by confined secretions, may simulate a chancroid in the inoculability of its secretion, and that a chancroid may be irritated so that induration shall be present, simulating that of the initial lesion of syphilis. Previous instructions as to diagnosis in such doubtful cases will guide.

LESSON XXX.

DIAGNOSIS AND TREATMENT OF CHANCROIDAL BUBO AND BUBONIC CHANCROID.

Manner in which these lesions occur. Definition. Usual teachings in regard to the chancroidal or virulent bubo. All buboes, not syphilitic, which do not suppurate, claimed as sympathetic or scrofulous. Phagedenic buboes. All sores which give rise to suppurating buboes not necessarily chancroidal. Early treatment of gland swelling associated with chancroid. Calcium sulphide an efficient agent in arresting the suppurative process. Statistics in proof of this. Later treatment. Rest in bed important. Danger of extension of trouble through formation of sinuses. Signs of such accident. Treatment necessary to their arrest and subsequent cure. Chancroids of the anus and rectum. Usual mode of advent. Aids to diagnosis. Modes of treatment. Chancroids of anus and rectum. Mode of origin. Aids to diagnosis. Modifications of treatment to meet varied conditions. General remedial measures when local remedies prove inefficient. The exulcerous form of chancroid the mildest type. Mode of treatment. The ulcus elevatum not a true chancroid. Mode of treatment. Modifications resulting from the union of the contagia of chancre and chancroid. Syphilitic disease more likely to be associated with the milder forms of chancroid. Frequency of this accident. The term mixed chancre a misnomer. No mixing possible. Each disease always independent of the other, and always of necessity antagonistic. Possible development of the initial lesion of syphilis after the healing of a chancroid.

Inflammation of lymphatic glands in connection with chancroid is not uncommon. The tumors, thus occurring, are termed *chancroidal buboes.* The inflammation is set up in such glands through the passage of the pus of the chanchroid through a lymphatic vessel. Inflammation is immmediately set up in the substance of the gland, which soon swells and becomes painful. Swelling of a lymphatic gland, from any cause, is usually called a bubo. Painful swelling of a lymphatic gland with inflammation, finally extending to the integument covering it, is termed an *inflammatory bubo.* When the inflammation is set up by inoculation, through the lymphatic vessels in connection with chancroid, it is termed a *chancroidal* or *virulent bubo.*

When an inoculation is thus effected, suppurative action is set up which (it has been taught as a rule to

which there is no exception) goes on to the formation of an abscess, and steadily progressing, in the course of two or three weeks, sometimes longer, finally finds its way through the parenchyma of the gland and the overlying integument. When this is effected, the lesion is called an open chancroidal bubo, or a bubonic chancroid. The purulent product of this lesion is, if not identical, analogous, in character, to that of the original chancroid.

This accident may be initiated at any period in the course of the chancroid, from its first appearance as a small suppurative point, throughout its existence. This is a strong argument in favor of the early and thorough destruction of chancroid. The activity of the suppurative process in the gland, bears a tolerably definite relation to that of the lesion from which it originates. When the source of the pus is active, virulent, it is not probable that any course of treatment, local or general, will prevent its termination in open bubo or chancroid. Where glands, associated with chancroid, inflame and yet do not go on to formation of abscess, or when abscess is thus formed and its contents are absorbed through treatment, local or general, it may be claimed that the chancroid, from which it is derived, is of mild type. It is, however, the habit of surgeons to classify all buboes (not syphilitic) which do not suppurate, as sympathetic or scrofulous.

Those resulting from irritation and not from inoculation, are termed sympathetic buboes. Whenever, through suppurative process, or by surgical inteference, the chancroidal bubo is open, it goes on to exhibit the diagnostic appearances of the original chancroid. Pus secreted by it, when inoculated at other points, or on another individual, produces the characteristic chancroid.

When the lesion from which it is derived, assumes the phagedenic form, the danger of extension of phagedenic action, to the bubonic chancroid, is imminent. Phagedenic action may also be set up in a bubonic chancroid after the original chancroid has healed. In such case the treatment should be the same as that pre-

viously directed (p. 244) for the phagedenic chancroid.

The earlier the destruction of a chancroid is effected, the less the danger of a complication through medium of the connecting lymphatic vessels. This accident seldom affects more than a single gland, and that usually in the groin, corresponding to the side on which the chancroid is situated. Occasionally, however, through intercommunication of lymph canals, it may appear in the opposite groin, even in both groins. A sore of very mild type may give rise to a bubo which may go on to suppuration. All sores which give rise to abscess of lymph glands are not necessarily of chancroidal origin. It is only by the activity of the contagium and of the inflammatory and destructive processes, exhibited in the inguinal lesion, that we can decide in what grade to place it.

It is safe, at first, to treat all imflammatory gland swellings in connection with chancroid, as if they were of simple origin, that is, by rest in the recumbent position, by local sedative applications, and at once to begin the use of the sulphide of calcium internally, giving parvules $\frac{1}{10}$ gr. every hour or two, or using a solution made fresh every day—

℞ Calx Sulphurata..... grs. 2.
M. Aq..... ʒiv.

A teaspoonful every hour or two. Also using pressure (when it is well borne), by means of a compressed sponge, retained by a spica bandage, and moistened with the *lotio plumbi et opii.* If pressure is productive of pain, and this continues after it has been on for a little time, cold applications, even the ice bag, will usually give comfort, and, later, allow the pressure. If the feelings of the patient permit, the cold may be maintained and in some cases abort the bubo. Tincture of iodine painted on morning and night is also valuable, if the patient cannot take the rest required for other treatment. It has the advantage of being easily kept in place, and the popular credit of favoring abortion where this is possible, and when this cannot be hoped

for, of favoring suppuration. The early evacuation of the resulting abscess is usually advised. My habit, formerly, was to introduce a bistoury and make a free incision parallel to the long axis of the tumor at the earliest recognition of positive fluctuation. My later experience with the sulphide of calcium, administered internally, has caused me to delay operative interference until inefficiency of the sulphide of calcium has been fairly demonstrated.*

Once the bubo has been laid open by an incision, extending through its long diameter, it will be usually sufficient to pack the cavity with cotton or lint saturated with the ordinary tincture of iodine. This is a good styptic and has sufficient cauterant property to destroy

* If suppuration, going on to the production of an open lesion, is inevitable, undoubtedly it is wise to encourage it, to evacuate the virulent product at the earliest moment, and thus afford access for efficient treatment for the destruction of this new formed chancroid. For this reason I had been an earnest advocate for early incision into suppurating buboes associated with chancroid. My experience in the few cases above alluded to, however, made me incline to the belief that a thorough and extended trial of the sulphide of calcium, in cases of inflammatory buboes associated with chancroid, might give such results as to make its use imperative in every such case.

In order to gain further light on this important matter, a systematic use of the calcium sulphide was made, in my service at Charity Hospital, in eighteen consecutive cases of inflammatory bubo occuring with, or as the immediate sequel of, well-pronounced chancroid. All the facts, considered of importance, were noted by myself and under my direction by Dr. Johnson, my House Surgeon.

Out of eighteen cases of inflammatory bubo presenting the rational evidences of chancroidal origin, and treated systematically by the use of small doses of the sulphide of calcium, resolution occurred in fifteen, and in only three cases was incision ultimately required. Applications of tincture of iodine and systematic compression were also employed in every case.

If we apply to these cases the usual rule that chancroidal buboes always eventuate in chanchroidal abscesses, always suppurate and require evacuation by natural means or surgical procedure, then we must hold that only three out of fifteen cases of inflammatory buboes associated with chancroid were the result of transference of the suppurative process from the chancroid to the adjacent lymphatic gland. It is just possible, however, that the influence of the sulphide of calcium may, in arresting suppuration, extend to the true chancroidal bubo. The apparent successful use of this drug in the series of cases herewith presented, at least suggests, and invites, a trial of its efficacy in all instances of threatened glandular suppuration, whether of purely sympathetic origin or associated with chancroid.

the chancroidal contagium and stimulate the abscess cavity to healthy granulation. Iodoform may be substituted if the iodine is objected to on account of pain; the pain caused by it, however, is very commonly transitory. Rest in bed is essential after the opening of the bubo, and until healing is well advanced, on account of the tendency to burrow, which abscesses in the region of the groin are wont to exhibit. The announcement of such an accident, is often, through a sharp rise of pulse and temperature, while the pain in the vicinity of the burrowing may be very slight. Whenever fever suddenly starts up in a patient suffering from an inguinal abscess or sinus, even when nearly healed, it is an almost certain sign of the formation or extension of a sinus, usually at the most dependent portion. In this event, after ascertaining its full extent by probing, in every case slip in a grooved director to the very bottom of the sinus, and if its direction is such as to make it surgically a proper thing to do, pass in a blunt curved bistoury and cut out—being careful not to leave a little pocket at the bottom. Injection of tincture of iodine may be made to advantage when cutting is not considered feasible. For the same purpose, a silver probe, dipped in nitric acid, (which forms a coating of nitrate of silver), may be conveniently applied by insertion of the probe. When possible, in cases where it is not considered judicious to lay it open throghout, the sinus should be drained by a counter opening, and, if suppuration is extensive, drainage effected by small perforated, rubber tubes, or carbolated threads. If not treated with promptness, extensive sinuses may form, requiring months to heal.

DIAGNOSIS AND TREATMENT OF THE URETHRAL CHANCROID.

A slight smarting on urination, or purulent discharge, appearing at the urethral orifice, six or eight days after impure connection, is suggestive chancroid of the meatus. Especially is a little blood in the discharge valuable as a diagnostic point—careful examination should

be made at once. This form is quite common, and is usually slow in its progress. If the tissues at the lower part of the contracted orifice are very thin, as is often the case, snipping them with a pair of blunt scissors will sometimes permit free application to the lesion without greatly increasing the surface thus exposed to inoculation, The use of a meatoscope, or a Toynbees ear speculum, will be of service in making examination and application beyond the orifice where, fortunately, chancroids are seldom met. If seen early, and the meatus is of sufficient size to expose it wholly, after cleansing with a weak carbolic lotion, and the part made properly dry, it should be thoroughly destroyed with nitric acid (after the manner described for small chancroids in other localities), subsequently dressing with a little thin linen wetted with a sedative lotion, or by small suppositories composed of equal parts of iodoform and cocoa butter. If the entire surface of the lesion cannot be exposed, treatment by iodoform suppositories will be best, using frequent hot water soakage, and insisting upon absolute rest.

DIAGNOSIS AND TREATMENT OF CHANCROIDS OF THE ANUS AND RECTUM.

These may occur as a result of connection *a posteriori*, or from inoculation. This accident, through chancroids previously existing in the vicinity, is suggested by pain in defecation and purulent discharge. The introduction of the finger may be sufficient to make out a diagnosis, but the short rectal bivalve speculum, with narrow blades, will give access, when required, for diagnosis and treatment. But little especial treatment will be required, beyond that already suggested for other varieties. Cauterization to be made use of when called for; and absolute cleanliness insisted on.

If great difficulty and pain are experienced in introduction of necessary instruments and dressings, or if the lesion is penetrating the tissues rapidly, or is rebellious to treatment, the external sphineter may be divided *through the lesion*, and the cut surface treated, together

with the chancroid, by application of iodoform and tannin suppositories, subsequently using nitric acid if necessary to arrest the disintegrating process, and then resuming the iodoform suppositories, until healing is complete. The use of the vaginal speculum, in treating chancroid of the ostium vaginæ and parts beyond, is absolutely essential, not alone for the security of reaching the full extent of the lesions, but for occasional examinations beyond the site of existing lesions, and to insure against insidious development of new points. The healthy tissues adjacent to contagious surfaces, should be kept constantly separate by thin layers of carbolated or iodoform dressing; and by occasional soakage in hot water, secure absolute cleanliness, and relief to inflammatory conditions.

In all cases of chancroid, which, when judiciously cared for, are still rebellious to treatment—particularly those where ulcerations and sinuses have occurred, the general condition of the patient should receive especial attention. In cases of scrofulous habit, cod liver oil, iron, etc., are often of service in hastening the healing of a sluggish chancroid. The case cited page 223, where all measures failed, until a change of climate and a sea voyage wrought a prompt cure, is significant.

THE EXULCEROUS FORM OF CHANCROID, described as existing without perceptible loss of tissue, being either on a level or slightly above the surrounding surface, and hence not characterized by the usual marks of chancroidal action—must be classed as of the mildest form, and amenable usually to local astringent sedative applications. The sulphate of iron as a lotion—10 grs. to ℥ 1 of water—is often promptly curative.

THE ULCUS ELEVATUM, a lesion of the same type, is scarcely to be classed among chancroids, as it lacks wholly the characteristic features of such lesions. It is usually not larger than a flattened pea, and found on the borders of a prepuce, which is bathed in secretions more or less vitiated. It partakes more of the nature of a papilliary hypertrophy, and a local treatment adapted to such overgrowth should be employed, viz.: removing first the source of the irritant secretion, then

apply the powdered persulphate of iron, or if necessary, to touch, lightly, with pure chromic acid.

MODIFICATIONS RESULTING FROM DEVELOPMENT OF SYPHILITIC ELEMENTS, IMPLANTED ON THE SITE OF A CHANCROIDAL LESION.

The milder the form of chancroid, the more likely to develop a syphilitic complication, after syphilitic exposure. Active chancroidal action, is doubtless as destructive of the syphilitic contagium, as of healthy tissue, but when, as is sometimes the case, the contagia of both chancre and chancroid are implanted on the same abrasion, at about the same time, the chances are, that the syphilitic disease germ, will find its way into a lymph space, and out of the reach of harm, before contact with the destructive chancroidal cell. This latter, going steadily on in its characteristic destructive action, while the proliferation of the syphilitic disease germs is progressing underneath. So it often happens, that, while the chancroid is in full typical action, the tissues underlying and surrounding, become gradually stiffened and indurated, until a sore presents, equally characteristic of both chancroid and the initial lesion of syphilis. This is known as the "*mixed chancre.*"

It will be at once seen that there is not, and never can be, any *mixing* of the contagion of chancroid and syphilis, one representing the *destruction* and the other the *growth* of tissue elements. Necessity for the treatment of the chancroid, is the same as before, but the complication requires the constitutional treatment appropriate for syphilis, at the first moment, when, through development of other characteristic syphilitic lesions, the diagnosis can be definitely settled. The development of induration of syphilis, after the healing of a chancroid (the tissues about which have remained supple throughout its existence) is also not uncommon, The possibility of such an occurrence must be borne prominently in mind, for several weeks after the healing of any lesion resulting from a suspicious sexual contact.

Remedies and Remedial Agents Referred to in this Volume, and their Application.

For Local Application to the Initial Lesion of Syphilis.

In the non-ulcerative forms; the indurated papule, and the dry scaling patch.

No. 1. White precipitate ointment, vaseline; equal parts; or,

No. 2. The mild mercural ointment; or,

No. 3. The oleate of mercury, 6 per cent solution, with vaseline; equal parts.

Apply by gently rubbing in a small quantity morning and night.

In all Uncomplicated Open Initial Lesions.

No. 4. Calomel pure, dusted on and protected by a thin film of borated cotton; or soaking the cotton with the following solution, and apply; or,

No. 5. Calomel, 20 grs.; lime water, 4 ounces; mix; or,

No. 6. Corrosive sublimate, 10 grs.; lime water, 6 ounces; mix.

For the Inflamed Initial Lesion.

Diluted solution of sub-acetate of lead, 4 ounces.

No. 7. Aqueous ext. opium, 10 grs.; or,

No. 8. Iodoform, 30 grs.; glycerine, 1 ounce; oil of roses, 1 drop; mix; apply on lint.

For the Phagedenic or Gangrenous Form.

No. 9. Iodoform, a sufficient quantity; 1 drop of the oil of roses to 30 grs.; applied freely.

Internal Remedies for Treatment of Syphilis, from date of Initiation, for at least 12 Months.

No. 10. Blue mass., 60 grs.; exsicated sulphate of iron, 30 grs.; make 30 pills (pil. duplex), one three times a day; or,

No. 11. Protoiodide of mercury, exsicated sulphate of iron, 40 grs.; aqueous extract of opium, 4 grs.; mix, make 40 pills; one three times a day.

External Applications for Innunction.

No. 12. The mild mercurial ointment; a piece as large as a filbert rubbed in thoroughly, morning and night; or,

No. 13. Oleate of mercury, 10 per cent solution; vaseline an equal quantity; a teaspoonful rubbed in, morning and night, always in a fresh and protected place.

For Mercurial Fumigation, or the Mercurial Bath.

No. 14. Calomel, (resublimed) 15 to 30 grs.; nightly, or every two or three nights, until its specific effect is obtained. Further directions on page.

AFTER THE TWELFTH MONTH, THE MIXTURE OF THE BINIODIDE OF MERCURY AND THE IODIDE OF POTASSIUM.

No. 15. Biniodide of mercury, 3 grs.; iodide of potassium, 120 grs.; tincture of orange peel, 1½ ounces; syrup of orange peel, 1½ ounces; distilled water, up to 8 ounces; mix; a teaspoonful three times a day, or if gastric or intestinal irritation ensues—

No. 16. Biniodide of mercury, 3 grs.; iodide of potassium, 120 grs; fluid extract of thuja, 8 ounces; mix; a teaspoonful three times a day.

In addition to the foregoing,

DURING THE SEQUELÆ OF SYPHILIS.

No. 17. Iodide of potassium, 1 ounce; distilled water, 6 drams; mix. Beginning with 5 drops in a small glass of water, or preferably of milk, increasing by a drop for each dose, gradually increasing the diluent to a tumblerful, until sixty drops are taken, equivalent to 60 grains of the iodide of potassium, three times daily, after meals, unless iodism occurs. In this case begin again with the minimum dose, and increase as before up to 40 drops, and then increase by 1 drop, until 60 grains is again reached. If decided benefit does not take place, the quantity may be even farther increased up to twice that amount, in grave cases, and continued, if well borne, until all signs of the disease have disappeared.

If the iodide of potassium is not tolerated, the following may be administered.

No. 18. Iodine, 24 grains; distilled water, 2 ounces; iodine of potassium, 48 grains; dissolve and add common molasses, or Stuart's syrup, 8 ounces; let it stand 12 hours. Administer from a dessertspoonful, gradually increased to a tablespoonful, thrice daily after meals.

IN THE ALOPECIA OF SYPHILIS.

The following lotions will be found serviceable:

No. 19. Bi-chloride of mercury, 3 grains; hydrochloric acid, 30 minims; distilled water, 8 ounces; then add, spirits of cologne, 1 ounce; rose water, 1 ounce; glycerine, ½ ounce; mix; or

No. 20. Castor oil, 1½ ounces; rectified spirit, 1½ ounces; spirits of cologne, 1 ounce; tincture of cantharides, 2 drams; mix, apply nightly, washing the hair every morning with castile soap.

FOR LOCAL APPLICATIONS IN THE TREATMENT OF CHANCROID IN THE SLOWLY DESTRUCTIVE FORMS.

No. 21. Sulphate of iron, 10 grains; aqueous extract of opium, 10 grains; distilled water to 1 ounce.

No. 22. Carbolic acid, 5 to 10 grains; solution of morphia, (U. S. P., containing 1 grain of morphia), 1 ounce. If the secretion is profuse,

No. 23. Iodoform and tannic acid, equal parts, dusted on; mix; in the more acute forms,

No. 24. Iodoform, 60 grains; vaseline, 60 grains; oil of roses, 1 drop; or,

No. 25. Iodoform, 60 grains; oil of roses, 1 drop; apply in powder; or,

No. 26. Iodoform, 1 dram; carbolic acid, 1 minim; oil of peppermint, 6 minims; mix.

FOR DESTRUCTION OF THE CHANCROID, OR PHAGEDENIC CONDITIONS.

Nitric acid, pure; galvano cautery, or the thermo cautery.

FOR SLUGGISH CONDITIONS.

No. 27. Permanganate of potassa, 2 grains; distilled water, 1 ounce.
No. 28. Carbolic acid, pure; applied daily; or,
No. 29. Carbolic acid, 10 grains; glycerine, 2 drams; distilled water, 6 drams; mix; apply on a thin film of cotton.

FOR APPLICATION TO BUBONIC ULCERS, AND SINUSES.

No. 30. Tincture of iodine, pure; and, for arrest of suppuration in any case.
No. 31. Sulphate of calcium, 1 grain; distilled water, 2 ounces; a tea spoonful every hour, solution to be freshly made every day; or,
Parvules, $\frac{1}{10}$ grs. each.

FOR APPLICATIONS TO THE PHAGEDENIC CHANCROID.

No. 32. Hot water immersion, temperature 100° F.; actual cautery; charcoal poultices
Internally, (Ricords formula).
No. 33. Potassio tartrate of iron, $\frac{1}{2}$ ounce; distilled water, 3 ounces; syrup, 3 ounces; mix; a dessertspoonful to a tablespoonful three every six hours, preferably after meals.