VENEREAL DISEASES

STURGIS

THE

STUDENTS' MANUAL

OF

VENEREAL DISEASES

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SEVENTH EDITION

REVISED AND IN PART REWRITTEN

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TO THE

MEDICAL STUDENTS OF THE UNITED STATES

THIS REVISED MANUAL ON VENEREAL DISEASES IS INSCRIBED WITH THE HOPE THAT IT MAY BE OF ASSISTANCE TO THEM IN THE PROSECUTION OF THEIR VENEREAL STUDIES

PREFACE TO THE SEVENTH EDITION.

It had been a question in the mind of the author whether it was worth while to reprint a seventh edition of this little book, inasmuch as it had practically fulfilled its function, which was to teach the students of the medical department of the University of the City of New York to whom he was lecturing at the time the manual was published, but Dr. Cabot expressed his belief that if the book were rewritten and brought up to date it would again find favor among the coming generation of medical students and a renewed sale.

So far as the author individually was concerned, he felt much indisposed to give time to the revision of the book, but upon Dr. Cabot's agreement that he would do part of the work Dr. Sturgis consented to take charge of the chapters on Chancroid and Syphilis; Dr. Cabot to revise those on Gonorrhea.

We trust that the book in its revised and improved shape will find acceptance by the medical students of the United States, to whom this book is dedicated, and we venture to ask for this new and revised edition some portion of the kindly reception and favor which has been accorded to its predecessors.

F. R. Sturgis.
Follen Cabot, Jr.

New York City. *December, 1900.*

PREFACE TO THE FIRST EDITION.

It has been said, with much truth, that books are read in inverse proportion to their length, and in preparing this manual I have steadily kept the question of length in view.

Written for students of medicine, it has been my aim to make the book concise, and at the same time practical. I have, therefore, as far as possible, eschewed all mooted points in venereal medicine, and confine myself to giving a careful, and at the same time condensed, description of the commoner forms of venereal diseases which will fall to the lot of the average young practitioner to treat, together with the most appropriate remedies.

How well I have accomplished my task remains for others than myself to say. I trust, however, that it will satisfy a want which, from my experience as a lecturer in this branch, I know exists, and with this hope I send the little manual into the world to take its chances.

16, West Thirty-second Street,
New York City. 1880.

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VENEREAL DISEASES.

CHAPTER I.

SIMPLE VENEREAL ULCER AND ITS COMPLICATIONS.—THE CHANCROID.

Before calling your special attention to the cases which I have brought from the wards for the purposes of illustration, it may not be inapt to define what is meant by venereal diseases, and to set before you the principal groups into which they are divided.

Speaking broadly, venereal diseases are those due to, and originating in, sexual contact, and although many forms of these diseases are transmitted without any sexual contact, as I shall show you further on, the name may, for convenience sake, stand. They are at present divided into three principal groups or divisions: *Gonorrhea, chancroid,* and *syphilis.* Each is distinct and separate one from the other, having nothing in common with each other, although they may all be present in the same person at the same time, and they are possessed of certain characteristics which are more or less peculiar to themselves.

Of these three diseases only the last one, *syphilis,* is *constitutional;* the other two, *gonorrhea and chancroid, are local.* I say this advisedly, notwithstanding the fact that within recent years cases have been reported in which systemic

infection appears to have been induced by, or to occur after, an attack of gonorrhea, owing to the absorption or transportation of the bacterium peculiar to gonorrhea, the diplococcus of Neisser. For the present, however, you may assume it as true that *gonorrhea and chancroid are local diseases; syphilis is not: that infects the entire system.*

The first case I present for your consideration is one of chancroid in a male subject, whose history, I regret to say, is imperfect, no uncommon occurrence in cases coming into hospitals; but from what I can glean from him and the record book, his sore, which you see is quite a large one, came on *two or three days after coitus*, and was at first quite small. Here is a point to which I wish you to attend, one of the most important upon which to base your diagnosis of a *chancroid*, and equally noteworthy as a *differential* mark between this lesion and the *first manifestation of syphilis*—what is commonly known as *chancre*. *The sore came on two or three days after coitus;* in other words, but a short time elapsed between the infecting connection and the resulting ulcer. The effect was almost immediate.

When we come to treat of syphilis, we shall find that this is no longer true; an appreciable interval elapses between cause and effect: what is technically called the period of incubation.

Chancroids, then, have at the most a *very short period of incubation*, sometimes *none* at all, and this depends much upon the manner in which the poison, or virus, so called, is deposited beneath the mucous membranes. If in coitus the membrane is abraded or torn, the chancroidal action begins *at once*, while, on the other hand, it is *delayed* if the discharge is deposited in a fold of mucous membrane or in a follicle; but even then the delay is usually one of only from *thirty-six to forty-eight* hours.

Another circumstance in the case is worthy of remark: the ulcer has *increased in size*—at first, he says, it was quite *small*. This denotes, in chancroids, a tendency to spread and become larger instead of smaller, a tendency due to the *destructive* character of the poison. Let me say here a word or two about this *virus*, or poison. Until within a comparatively short time it was believed to be an unknown quantity, and, notwithstanding what I am about to tell you now, I am inclined to believe that that definition still holds good. The present is an era in which the cause of nearly every disease is ascribed to some bacterium or bacillus, and venereal diseases have been no exception to this rule. Without going back to earliest times, let it suffice to say that about the year 1889 an Italian of Naples, named Ducrey, discovered what he believed to be the bacillus of the chancroid. This he regarded as the solution of the virus of the chancroid. He, moreover, believed that there was only one form of bubo which accompanied the chancroid, to wit: the simple or inflammatory type, the chancroidal bubo being due, in his opinion, to auto-inoculation of the wound resulting from the opening of the bubo. This piece of information fell upon deaf and inattentive ears.

In the same year that Ducrey published his conclusions Krefting, a Norwegian, published views similar to those of Ducrey, except as to the bubo; on that point he differed from Ducrey.

One peculiarity about this *bacillus* was that it was *incapable of artificial propagation:* it could not be cultivated on any of the media which heretofore have been used for the propagation of any given bacterium on foreign soil. And, more than that, in the *pus*—for only the pus was taken by these two observers—there was *such a variety of bacteria*—streptococci, staphylococci, and other saprophites—that it

was *impossible to determine which given bacterium was the real cause of the trouble*, and, inasmuch as it was incapable of artificial cultivation, it seemed to put an end to the determination of this question.

These two observers, remember, had merely taken the *pus;* but in all of the specimens it was noted that there was an *extraordinary looking bacillus* which was *short*, with rather *bulbous extremities*, which was *constant* in all specimens, and this both Ducrey and Krefting considered as the *bacillus of the chancroid*, and it was known as the Ducrey-Krefting bacillus.

Later Unna, a German of Hamburg; made sections of *chancroidal tissues* and therein found a *bacillus* which, however, differed from the bacillus of Ducrey and Krefting in that it was *made up of chains or long rods.* This bacillus he considered a *streptobacillus*, and he found in this the *same inability to cultivate* it upon any of the usual bacterio-cultural media. It *differs in some respects from the other bacillus*, and some bacteriologists consider this of *no importance*, regarding the two as practically identical, while others decline to adopt this view. The same variety of bacteria was also discovered in these sections, but in lesser degree, and the *further from the surface of the ulcer* the sections were made, the *fewer became the number of other bacteria* and the *more constant became this one peculiar streptobacillus.* It was fairly supposed that *this* bacillus was therefore *pathognomonic* of the chancroid, and the opinion was still further confirmed by Krefting's experiments, in which, finding that he could not cultivate the bacillus by the usual methods, he used its natural soil—to wit, the *human body*—as the *cultivating medium*, and, by *repeated auto-inoculations* and *examinations* of the pus, he was later on able to *eliminate* from the purulent secretion of these chancroids of inoculation

every variety of bacterium except the one bacillus, the *diplobacillus* of Ducrey and Krefting; and he also obtained this *same bacillus from the pus of a virulent bubo.* He believed that the *bacilli of Ducrey and Unna are the same*, and that the question of difference in form is accidental and perhaps dependent upon different stages in the growth of the chancroid. That is the position in which the matter stands at present, and I have explained this to you as succinctly as possible, in order to give you all the information with regard to the causation of this variety of disease; although I am perfectly frank to say that I believe the importance of this discovery is grossly exaggerated. Indeed, I believe the statement which I made in my earlier editions still stands good: that it *holds in venereal parlance* much the same *position that the letters x, y, and z do in algebra;* it is still an *unknown quantity*, notwithstanding the discovery of the bacilli of Ducrey-Krefting and Unna. As to its practical value, I am equally skeptical. It certainly makes no difference in the treatment whether the bacillus is the cause or merely an accidental accompaniment. The *treatment* will be the *same in either case;* and its only *value* will be the *negative one* as regards diagnosis. If you at the termination of your student's career are expert pathologists and microscopists,—which you are almost certain not to be,—you will find that the number of bacteria and microbes which you scrape off the surface of a chancroid will be so confusing that you probably would not recognize the bacillus of the chancroid were you to meet with it; indeed, the excitement and interest which attended the subsequent discussions on the bacillus of the chancroid have very much diminished, and I do not think that the average practitioner cares much whether the

bacillus is the cause of the chancroid or not. *He knows his treatment will be the same in either case.*

I shall, therefore, continue the use of the term "virus," as it is one of great convenience and it would be difficult to find a good substitute. I shall certainly not speak of the bacillus as being the cause of the chancroid until it has been more clearly demonstrated that it is the real cause. In this connection let me call your attention briefly to the facts that *nonvenereal sores* have been *capable of auto-inoculation within certain limits*,—to wit, those of *ecthyma* and *pustular acne*,—and the secretion also of an *initial lesion of syphilis, if this latter be irritated*, is *capable* not *only of auto-inoculation*, but also of *inoculation on another person without producing syphilis*, albeit, as a rule, the secretions of syphilis are *not auto-inoculable.*

Now, the bacillus of syphilis is entirely different from the bacillus of the chancroid, and, so far as I am aware, no bacillus has as yet been discovered to account for the presence of an ordinary ecthyma or pustular acne, and if this be correct, it would appear that there are other causes besides the presence of a bacillus to account for the auto-inoculability of chancroidal pus. I shall, therefore, in these chapters retain the word "*virus*," begging you, meantime, to remember that it means an *indefinite something*, endowed *with properties*, which *produces certain results;* and that that indefinite something may possibly be due to the existence of a bacillus, but the correctness of which surmise must still be regarded as nonproven.

To return to the chancroid. Two points we have brought out, and mark them well: First, *a period of incubation, at the most very short, sometimes absent;* and, second, *a tendency to destructive action.* Let us now examine the sore and see what else we find. We notice *one* rather large

ulcer, of *irregular* shape, *uneven* floor, a moderately *copious, purulent* secretion (this has been somewhat modified by treatment), and upon putting the ulceration on the stretch we observe that it extends beyond the *apparent* edges of the sore. I repeat *apparent edges*, because this peculiarity has a decided bearing upon treatment. Chancroids frequently burrow, going along faster below than they do above, hence the external aspect of the sore is no necessary index of its real area; the edges of the ulcer are *undermined*, and if in the treatment you decide to destroy the chancroid by caustics, *convey the destructive agent beneath the edges and beyond the apparent limits of the sore, even into sound tissues.*

The number and shape of the ulcers are the next points which invite discussion. In this subject there happens to be only one ulcer, but such is not always the case, as witness this second man. Here we find three chancroids of various sizes. This multiplicity may be produced in one of two ways: either as original foci of infection or by inoculation.

Note, therefore, *that the chancroid is capable of self-propagation upon the person having it, and also upon others to whom the poison may be conveyed.*

It is eminently *contagious* and *auto-inoculable.* I shall call your attention again to this point when I come to speak of the initial lesion of syphilis (chancre). In shape the sore is irregular, owing partly to the seat—on the inner layer of the prepuce and the fossa glandis—and partly to the natural tendency chancroids have of spreading irregularly and sending out shoots, but there is often another reason: several chancroids may be seated close to one another and, by destroying the intervening sound tissue, present to view an ulceration with irregular scalloped edges.

The secretion, as has been already said, is *copious* and

purulent, caused by the *destruction* of tissue, for pus, as you know, is *dead tissue*.

Have we explained all the noteworthy characteristics presented by this chancroid? By no means, for upon handling it we are struck by the fact that though the ulcer is large and angry looking, the tissues upon which it is seated are perfectly *supple* and *soft*. And here let me give you a word of warning as to the use of the word *soft*, which has proved a fruitful cause of misunderstanding. Better expunge the word from your venereal vocabulary and call the chancroid a *simple venereal ulcer*, as contradistinguished from the initial lesion of syphilis (chancre), which is termed the *specific venereal ulcer*. In the discussions which in former days have been had upon the nature of these two ulcers it was stated and generally believed that no soft sore —*i. e.*, one which had no induration at the base—was ever followed by syphilitic manifestations. This belief is now proved to be erroneous, and sores devoid of indurated bases have been the precursors of secondary symptoms—in other words, *the initial lesion of syphilis may be soft*. The importance of this you will see later on. If this be true, the inapplicability of the term to a chancroid is apparent, for a *chancroid is never followed by general manifestations; the initial lesion always is*, and of this I shall speak more fully later on. Do not, therefore, call the chancroid the *soft* venereal ulcer, but *simple* venereal ulcer, if you do not wish to use the word chancroid.

Now, to go back to the chancroid. We find *no induration* at the base; the tissue upon which it is seated is perfectly supple and yields readily to pressure, in a manner entirely different from what it does in this third patient, who is the subject of an initial lesion and beneath whose sore, on palpation, you can discover a gristly hard sub-

stance, the nature of which you will learn more about by and by. We have, then, discovered another trait of a chancroid, to wit: *an absence of indurated base;* but remember this loses some of its diagnostic importance, from the fact that the initial lesion (chancre) sometimes presents the same peculiarity.

Before passing to the next point let me sketch the salient features of a chancroid, such as we have discovered upon the cases examined to-day. They are these:

Absence, or at most a very *short* period of *incubation.*

Tendency to *spread* irregularly in size and depth.

Tendency to *undermining* of the walls of the ulcer.

Copious purulent *secretion.*

Contagious and *auto-inoculable* character of the pus, thus producing multiple sores.

Absence of *induration* of the base of the ulcer.

Thus far we have studied the chancroid in its simplest form. We will now consider the complications most liable to occur with this disease.

The first and the one most intimately associated with the chancroid is the bubo, or swelling of glands, usually those of the groin. This is due to two causes, the first being from sympathy (sympathetic inflammation), the second, and most serious, from absorption of chancroidal matter from the ulcer by the lymphatics. I am myself satisfied that this occurs, notwithstanding the fact that the statement has recently been advanced that the chancroidal bubo becomes so from auto-inoculation after opening the bubo, and not from the absorption of matter from the ulcer.

The two subjects I bring before you illustrate these points beautifully. This first patient has, as you see, a large, indolent, brawny swelling in his right groin, and upon his

penis he still bears a chancroid, but in the stage of repair. Number two also has a chancroid, seated close to and invading the frenum, but in his groin we find a different condition of things to what we did in number one. Here we find an open ulceration, presenting an uneven, grayish floor, everted and undermined edges, and secreting an abundant amount of pus, recalling to mind the characteristics of the chancroid already presented to you. Indeed, you would be right to call it a chancroid, for such it is: *caused by the absorption of the chancroidal matter through the chain of lymphatics, and deposited in the nearest glands* (in this case the inguinal), there to produce a condition of affairs similar to what obtains in the original ulcer. In other words, you have here a typical chancroidal bubo, pure and simple. These two, then, represent the varieties of bubo found with a chancroid; the first one, a bubo from sympathy, which *frequently does not suppurate*, and if it does, furnishes *laudable, healthy pus; the second one, the true chancroidal bubo, due to absorption of matter from the ulcer, which invariably ulcerates and presents subsequently the appearance of a chancroid—indeed, is a chancroid.*

There are two other points to which I wish to call your attention: the diffused brawniness of the surrounding tissues in both cases and the side of the body upon which the buboes are seated.

The glands themselves do not seem to be the only parts affected; the *circumglandular tissue is involved* as well, presenting a thickened, doughy mass in which the *glands can be indistinctly felt.* Note this well, I pray, for when you come to handle cases of *syphilis* you will find a very opposite condition of things; the glands will *not* be fused together nor with adjacent tissue, but they will be *distinct, well marked*, and *indurated.*

The other point is this: in the second case the bubo is seated upon the groin opposite to the side of the penis upon which the chancroid is; in number one it is upon the same side. The cause is the position of the ulcer. Deduce then the following rule: *Buboes are usually seated upon the same side of the body as the ulcer which causes them, except when it (the ulcer) is seated upon the frenum, when they will be frequently found upon the opposite side. The same is true when the chancroid in the female is seated upon the "fourchette," and this is due to the decussation of the lymphatics at these two points.*

In all the cases I have shown you the lesion has been seated upon the *mucous membrane* of the genitals. This is its usual seat, but it may be met with upon the skin of various parts of the body, such as the *face*, the *head*, the *fingers*, and, as I have seen in one case, in the *throat*. Such places are *not common* seats of the chancroid, so you may always *suspect the nature of a sore when located on the parts I have just mentioned;* it is much more likely to be *syphilitic;* at any rate, always bear that point in mind.

The course of a chancroid is always *destructive*, and if not properly treated, may result in severe disfigurement and loss of tissue.

This is *especially* the case when the chancroid is seated upon the *frenum* or in the *urethra* just within the meatus urinarius. In the former place perforation and destruction of the frenum are to be looked for; and what will perhaps surprise you, is a greater loss of tissue than you had at first counted upon, for here, particularly, the burrowing tendency of the chancroid is shown, and long before the frenum is ulcerated through the sore has attained large dimensions. In the latter place (the urethra) the sore extends rapidly, is difficult of treatment from its comparative inac-

cessibility, and upon cicatrization produces partial closure of the meatus, requiring subsequent surgical treatment.

As I have already stated, these ulcers have a tendency to *spread*, and, from their facility of auto-inoculation, to *multiply;* hence the treatment to be effective must be *prompt* and *thorough.* Under proper care the copious purulent *secretion* is *diminished*, the *gray floor disappears*, *granulations* spring up over the surface of the sore, and the undermined *edges fill up* level with the walls of the ulcer. But bear this point in mind : a *chancroid is dangerous up to the very moment of its complete cicatrization; no matter how superficial or simple it may look, do not remit the thoroughness of your treatment until cicatrization is complete.* I have seen chancroids *almost well relapse* (without a fresh infection) from just that want of care, the slight remaining discharge being sufficient to reinoculate the almost cicatrized sore.

Phagedena is another and perhaps the worst accident which can attack a chancroid, and when it becomes *serpiginous*,—that is, when it extends in one direction while healing in another,—may last for a long time (several years) and seem well-nigh hopeless of cure. It, fortunately, is not common, in this section of the country at least, and occurs in those persons whose health is broken down from alcoholic excesses or constitutional debility, such as scrofula and the like. Remember that it is due to *constitutional*, *not local*, *causes*, and to combat it successfully you must take your measures accordingly. This grave accident attacks not only the chancroid itself, but the chancroidal bubo, lasts for an indefinite time, and will put you to your trumps to cure.

Before passing on to the consideration of treatment there are other complications to which I wish to direct your

attention, to wit: *phimosis* occurring *with chancroid*, and *chancroids of the anus*. You already know that the *first* of these complications occurs *with syphilis and gonorrhœa*, as well as with chancroids, and it is important for you to be able to tell which one of these diseases lurks behind the constricted foreskin, not only for diagnosis, but for treatment. In cases of *gonorrhœa and chancroid* there is a *copious purulent secretion* from beneath the prepuce; but in *gonorrhœa* this matter *is not auto-inoculable*, while in *chancroid it is*. With a *chancroid* the *penis* is much more *painful*, *edematous*, and *swollen*, and the *lymphatics* on the dorsum penis are more apt to be *inflamed* and *tender* than is the case in gonorrhea; *but the crucial test is auto-inoculation*. If the hidden ulcer be an *initial lesion*, the secretion is *very scanty*, if indeed there be *any;* the prepuce is *hard* and *indurated*, instead of being *edematous* and *doughy*, and the *secretion is not auto-inoculable*.

Chancroids of the *anus* are, in the male subject, *very rare* indeed; and where you find them, always suspect sodomy, and I believe you will seldom be wrong. The same is still *more true* as regards the *initial lesion* of syphilis (chancre) in both sexes. But with *women*, so far as the chancroid is concerned, it is different. With them *anal and rectal chancroids are not rare*, and their presence does not imply *Venus præpostera*. The secretion from the chancroids of the female genitals naturally flows over the perineum and anus; very few feminine ani but are abraded; auto-inoculation occurs, and the thing is done, and a very nasty thing it is too. The ulcer extends in all directions, eats through and neutralizes the action of the sphincter ani, producing incontinence of the bowels; burrows up into the rectum; is continually irritated by retained fecal matter; is extremely difficult to heal, and, when it finally does, nearly always leaves

a stricture of the rectum behind it; and if to that you add phagedena, a not infrequent complication in broken-down harlots, the picture is a pretty dismal one.

Chancroids of the female genitals *differ* in *no essential respect* from those of the male in appearance or course. Their usual seat is at the *vulva and introitus vaginæ;* they are next most frequent on the *cervix uteri*, and are very rarely met with in the *vagina* between these points.

Buboes in women are not so common as in men, excepting when the chancroid is seated at the "fourchette," when they follow the same course of action as that already detailed in the early part of this chapter.

CHAPTER II.

TREATMENT OF THE CHANCROID.

In the preceding chapter we went over the description of the chancroid and the complications which are its most frequent concomitants, reserving the question of treatment to a chapter by itself. This, then, will form the subject of this chapter, and at the outset I want to impress upon your minds the two cardinal points of treatment, which are, *first, the arrest of the virulent and destructive character of the ulcer; second, cleanliness.*

First, then, as to the *arrest* of the virulent and destructive character of the ulcer. This is done either by the *actual cautery* or other caustics, in severe cases, and by *alterative applications* in mild ones. Of the first division of remedies the *white iron*, or the *galvanocautery*, takes the front rank as a destructive agent; next to that comes the *strong sulphuric acid;* third, chemically pure *nitric acid;* fourth, pure *carbolic acid;* fifth, *chromic acid*, and sixth, *pyrogallic acid.* A neat way of using the sulphuric acid is by the medication known as Ricord's *carbosulphuric paste*, which is made by taking a small quantity of finely powdered *willow* charcoal, adding, drop by drop, enough of the acid to make a paste of the consistence of thick cream. This is put on with a porcelain or glass spatula, *taking care* (*remember the undermined edges*) *to carry the agent into sound tissue both underneath and on the surface of the edges of the chancroid. Nitric* or *carbolic* acid may be used in the same way. The advantage of this method is that, besides destroying the

virulent ulcer, it makes a firm *dressing* by the drying of the charcoal on evaporation of the acid, which, dropping off at the end of several days, reveals the chancroid *almost, if not entirely, healed.* If you prefer to use the acids in a fluid form, then some subsequent *dressing* must be used, and of all dressings I infinitely prefer the *dry* to the *wet.* One of the best preparations is *iodoform finely* powdered, either alone or in combination, thus :

℞. Pulv. iodoformi, ... 1 part
Lycopodii, ... 2 parts.
M.
Triturate well. Apply locally.

The lycopodium has, probably, only a mechanical action, but it absorbs fluid very readily, while the iodoform acts as a local stimulant and alterative. Another good prescription is :

℞. Pulv. iodoformi,
Pulv. ac. tannic., ... p. æ.
M.
Triturate and use locally.

This is more astringent than the other.

The following prescription is useful when the ulcer is flabby and indolent :

℞. Pulv. iodoformi, ... ʒj
Zinci sulphat., ... gr. v
Pulv. ac. tannic., ... ʒj.
M.
Triturate. For local use.

One serious objection to the use of iodoform in private practice is its strong and pungent odor. Many attempts have been made to overcome this, but they have all been futile ; for you may perfume and scent it as much as you will, the smell of iodoform lingers there still. But there are other preparations which have the advantage of iodo-

form without its disagreeable feature. These I shall mention in the order of their usefulness. They are *orthoform, aristol, and iodol.* These may be applied full strength without combining them with any other drug.

Should you from any cause decide to use a wet in preference to a dry dressing, you will find the formulæ which I give below as good as any you can use :

℞. Ac. carbol. cryst., ... ʒj–ij
Aquæ, ... ʒviij.
M.

Or—

℞. Zinc. sulphat., ... gr. v–xx
Aquæ, ... ʒij.
M.

This latter application is an excellent dressing where the ulcer is flabby and indolent. The strength of twenty grains to two ounces should only be used when the ulcer is unattended with inflammation ; if there be any, the weaker solution is better.

Another very excellent dressing for chancroids is a *weak solution of nitric acid*, thus :

℞. Acidi nitrici, c. p., ... ʒj
Aquæ, ... ʒviij.
M.

You observe that in the list I have written for your use the *nitrate of silver* does *not* appear. This may seem strange, for the lunar caustic is the one thing *par excellence* which is daubed over any suspicious looking ulcer. But I say to you, *do not use it* if you mean to use a *caustic.* Nitrate of silver is *not*, in the true sense of the term, a *caustic ;* its action is very superficial, inasmuch as it quickly forms with the albumin of the tissues an insoluble albuminate of silver, and it can not destroy deeply or thoroughly, as do the sul-

phuric and nitric acids. *Confine its use, then, to those cases where you desire to stimulate indolent, slowly healing chancroids; when you wish to destroy, select some other agent.*

Extreme heat also seems to act favorably in the treatment of chancroids, but inasmuch as in private practice its use would be very inconvenient,—and, indeed, it is likely that patients would not carry it out efficiently or faithfully,—it will be of very little value, except so far as its use in hospitals is concerned. The usual way of using it is by putting the patient into a hot-water bath of a temperature of from 100° to 105° F., and even higher, if the patient can stand it, for from five to fifteen minutes. Another way, and one which is admissible in private practice, is to *soak the penis in hot water to the point of faintness;* and a third way is by the application of bags full of *hot sand*, surrounding the penis with them. This last I think is very uncertain in its use and of small value.

The foregoing rules for treatment are good where the lesion is exposed and accessible, but how shall we act in cases where chancroids are *concealed* either in the urethra or behind a phimosis? The first object to be attained is to relieve the phimosis; the second, to check the extension of the chancroid. In the first place you will find nothing better than freely bathing the genitals in *hot water* (as hot as the patient can bear it, even to the point of faintness) several times daily, and at night wrapping the penis up in a bandage wet with the following lotion:

℞. Liquor. plumb. subacetat.,
Tinct. opii, ... āā ℥j
Aquæ, ... ad ℥viij.
M.
Sig.—Locally.

In conjunction with the hot bathing *subpreputial injec-*

tions should be made several times during the day with a solution of carbolic or nitric acid, in the following manner: with a flat-billed syringe made of hard rubber throw up hot water between the prepuce and glans penis until the return flow shows no shreds or fibers; then, with the same instrument, inject carefully two syringefuls of either of the following solutions:

℞. Ac. carbol. cryst., ... ʒ ss–j
Aquæ, ... ʒ viij.
M.

Or—

℞. Ac. nitric., c. p., ... ʒ ss
Aquæ, ... ʒ viij.
M.

Care should be taken to see that the fluid reaches well back to all portions of the fossa glandis. After this is done a small dossil of lint or prepared cotton should be lightly placed at the orifice of the prepuce, between it and the glans penis. This plan of procedure should be steadily persevered in until the prepuce can be retracted and the glans penis freely exposed, when the chancroids can be treated as already advised.

Suppose this happy result is not attainable, what then must we look for? It may happen that the swelling and inflammation, instead of subsiding, increase; the entire organ becomes enormously edematous and purple, threatening gangrene, and it is evident that a very serious condition of things obtains; in fact, *gangrene will* rapidly supervene unless active measures are adopted to check it.

Sometimes, happily very rarely, the sphacelus attacks a large portion of the penis, causing very serious consequences; but usually it is confined to narrower limits, and nature is satisfied when she has relieved the constriction and reestablished the circulation. This she does in the following manner: One or more spots of a purple hue appear

upon the swollen prepuce, at points corresponding with the imprisoned glans penis beneath; these spots get darker in color, extend and coalesce, and by becoming gradually thinner admit of the exit of the glans penis through the opening safe and sound. The redundant and useless foreskin may be subsequently removed by operation. This is the course where everything goes on smoothly and safely, but sometimes active surgical interference becomes requisite. This happens when it is evident that extensive loss of tissue must supervene before the imprisoned glans penis can be liberated, and here you have to choose carefully between two evils. You must overcome the constriction by cutting through it; but remember what I have already told you about the *contagious* character of the chancroid. *The cut edges of the incision are sure to become inoculated, hence I advise you not to operate unless you must do so to save your patient from something worse than an extension of the chancroid.* But if you must cut, let me give you one or two hints as to the method. Carry your director between the prepuce and the glans penis in the median line * (*be careful not to pass it into the urethra*), and then slit the foreskin well up to the fossa glandis; that will liberate the glans, and, on retracting the prepuce, search for the chancroids. *Destroy them at once* with one of the strong caustics already mentioned, *and at the same time cauterize the cut edges of the wound you have made.* The subsequent dressing will be similar to the one I have already advised. The "dog's-ears" left by the operation may be subsequently removed by circumcision, *but not until the chancroids have entirely healed.*

If the chancroid be *in the urethra*, your tactics must vary

* The incisions are sometimes made upon the two sides instead of in the median line. This variety of incision is better if the foreskin is very much thickened.

a little. When situated close to the meatus, separation of the lips will expose the sore, which may be cauterized and dressed with one of the wet preparations previously mentioned. When beyond reach, upon separation of the lips of the meatus you must use a weak injection of carbolized * or otherwise medicated fluid, and afterward insert a dossil of lint or cotton wet with the same solution within the urethra.

Contraction of the meatus left upon cicatrization of the chancroid may be remedied by slitting the meatus with a bistoury or a meatotome.

Such dressings—indeed all dressings for the treatment of chancroids—should be applied three or four times daily, at the least.

When the chancroid is seated at the *frenum, threatening perforation*, do not wait for the ulcer to eat its way through, but anticipate matters by cutting the frenum. If hemorrhage result from the small artery seated in the frenum, tie, if requisite, but torsion will check bleeding in the majority of cases. You must then treat the chancroid, which will often turn out much larger than you at first supposed, by the rules I have already given you.

As regards the *treatment of buboes*, the rules are simple and easily laid down. Until the bubo breaks you can not be certain whether it is a simple or a chancroidal one you have to deal with. Your first efforts, therefore, should be to *cause absorption;* if the bubo is nonvirulent, you are often successful; but if, on the other hand, the bubo is due to the absorption of matter from the chancroid, you will find the swelling extend, the bubo rapidly become softer, and fluctuation more pronounced. *The moment you are sure*

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* Acidum carbolicum, $\frac{1}{8}$–$\frac{1}{4}$ gr. to aq. ℥j.

of fluctuation open the bubo, and this for a twofold reason. Pus, in my experience, whether due to virulent or nonvirulent buboes, is not absorbed when once it begins to form, and under these circumstances it is much better evacuated. If the bubo be a simple one, the moment the pus is let out the bubo heals up; if, on the other hand, it be virulent, the sooner you know this the better for your patient. But we will suppose that the bubo has not as yet shown any fluctuation; what methods shall we adopt to prevent the formation of pus? Four—viz., *leeches*, *rest*, *compression*, and the *local* application of the tincture of *iodin*. This latter must be applied *at least* once every day up to the point of vesication, and as soon as this is accomplished you will find the employment of the lead plaster of service. *Compression*, if you can persuade your patient to go to bed, can be best obtained by placing a bag of small shot, weighing from two to four pounds, or a brick wrapped in flannel, directly upon the swelling; if your patient will not keep on his back, use a layer of compressed sponge and a spica bandage, which wet as soon as applied, when you will get even and firm compression from the swelling of the sponge. Should your attempts at resolution fail and suppuration threaten, favor it, as far as possible, by the application of poultices.

A word or two with regard to the application of *leeches*, should you deem them requisite. *Always place them at some distance from, and never on, the bubo.* Do not forget this, else you will run the risk of inoculating sound tissue from the leech-bites, if the bubo should prove to be chancroidal. It is seldom that leeches are of much service, and I should advise you to be chary of their use; they are not superior to the other methods I have mentioned.

The bubo is now ripe and is ready for the knife ; how is it to be opened ? I prefer doing so by an incision *parallel with the long axis of the body* first, and then, if requisite, carry the cut upward and downward in the direction of Poupart's ligament. *Lay sinuses open wherever you find them* if you hope to make a speedy and permanent cure. After the bubo is thoroughly opened, stanch the bleeding (exposure to the air will suffice in most cases ; if not, use ice-cold compresses), and in cases of simple buboes dress the wound with a weak carbolized lotion applied on cotton or lint. If, however, the *bubo be chancroidal, cauterize* it first according to the directions already laid down for cauterizing chancroids, and make what subsequent dressings you deem advisable, carefully packing the material *well beneath the undermined edges.*

An honest, free incision is, I believe, nine times in ten the best and quickest way to treat these lesions, but I will mention two other methods in vogue. One is by *aspiration—i. e.*, exhausting the bubo of its contents by suction with Dieulafoy's aspirator or the American modifications of his instrument. The other is by *breaking up the bubo—i. e.*, churning its contents with a blunt-pointed bistoury—a small incision having first been made to admit the entrance of the bistoury. Both of these methods are, of course, *only applicable to the nonvirulent* bubo, and even here I think other means are preferable.

If *internal* treatment be thought worthy of trial, it must be borne in mind that it is for its tonic effect more than anything else. Treatment directed toward *checking suppuration* I have found of very *little value*, although in the early editions of this work I spoke of calcium sulphid as a remedy which might produce this effect. Subsequent trials of this drug have forced me to the conclusion that it is

practically inert. The *tonics* most in use are dried ferrous sulphate, one to three grains, or reduced iron, one to two grains, in pill form, three times daily; the sulphate of quinin or dextroquinin, two to three grains, three times daily; and cod-liver oil, one drachm to one-half ounce, in similar doses. Of course, you will not forget *nutritious diet* and *stimulants*, as they are needed, but I should advise you to use the latter as little as possible. *Venereal patients do better, as a rule, without alcohol.*

There is one other subject in connection with these diseases which I wish to discuss with you before bringing this chapter to a close, and that is the one of *phagedena.* It will be sufficient to recall to your minds the cases of the three women which I showed you a short time since, where the ulceration had crept over the nates and down the thighs, up the abdomen and along the groins, breaking down the rectovaginal wall and destroying the labia vulvæ, to impress upon you the necessity of a vigorous treatment. Remember what I have already said to you about phagedena, that it is *due to constitutional, not local, causes*, and this will be the keynote of your treatment, *although not to the exclusion of local remedies; your main reliance must be upon internal and constitutional measures.* Foremost in this latter class stands the *potassiotartrate of iron*, which Ricord called the "born enemy of phagedena," and which he was in the habit of applying both topically and by the mouth, thus:

℞. Ferri et potas. tart., ... ℥j
Aquæ, ... ℥vj.
M.
Sig.—Internally, in teaspoonful doses, thrice daily; also for local application as occasion requires.

A strongly carbolized lotion will oftentimes be of service as a dressing in phagedenic chancroids, viz.:

℞. Ac. carbol. cryst., ... ʒij–v
Aquæ, ... Oj.
M.
Sig.—Locally.

By far the most frequent cause of phagedena is that condition of the system known as "*chronic alcoholism*," and which it should be your aim to relieve as far as possible. In such cases you will find the following prescription a serviceable one :

℞. Ol. morrh., ... ʒss
Ac. phosph. dil., ... ♏x–xxx.
M.
In one dose.
Sig.—Three times daily, or oftener if necessary.

This seems to act by toning up the depressed nervous system of chronic drunkards, and giving the body a chance to combat the disease.

Other tonics which are suitable in such cases are those which I have previously mentioned.

Among the *local* dressings, the potassiotartrate of iron and the carbolic acid are the best, but I wish to say a few words about the extirpation of a phagedenic chancroid. The only agents which are of any real value for that purpose are the hot iron and the galvanocautery ; the corrosive acids I have previously mentioned are of little use. In applying either of these agents remember to have the heat *white*, not *red*, for two reasons : first, because it is more effective ; second, because it is less painful. Remember also to carry the destruction of tissue, as in the case of the acids, *beyond the diseased parts*.

These constitute the most practical points in the treatment of this important affection ; and I have, as far as possible, confined myself to giving you what I have found the most efficacious remedies, without cumbering your minds with numbers of useless prescriptions.

CHAPTER III.

THE INITIAL LESION OF SYPHILIS.

In this chapter we break ground upon one of the most important venereal diseases which can afflict mankind, important not only from its effects upon the original bearer of the disease, but also from the horrible consequences which may be entailed upon the offspring of the syphilitic person; and in dealing with syphilis I shall try to give you, as clearly and practically as I can, the chief points of the disease, and in what its *first symptom*, the *initial lesion*, *differs* from the *chancroid*.

In the first place, let me explain why I abandon the name *chancre*. First, because it is *confusing;* and second, because it *means nothing*. The French, English, and most American writers call the syphilitic sore chancre, and the local venereal sore the chancroid; but the Germans expunge the word chancroid from their vocabulary, calling that lesion chancre, and our chancre the initial lesion of syphilis; this multiplication of names is confusing. Chancre, originally derived from cancer, means "something which eats or destroys." Now, the *initial lesion does not destroy*, and the word chancre does not necessarily mean anything syphilitic; but to say *initial lesion of syphilis*, means that it is the *first* symptom of acquired syphilis.

And bear this well in mind, *it is syphilis already; no local lesion*, as is the chancroid, but the *first symptom* of a disease which is always serious, sometimes grave in its results, and connected with other symptoms which do not

appear until some weeks after. I shall therefore call the *first symptom of syphilis the initial lesion*, and entirely abandon the word chancre.

The first case I have to present is of interest in several ways; and before commenting at length upon it, let me give you a few points in the history: The patient, a stout, well-built young fellow, twenty-four years of age, was admitted to the hospital November 7th. He says he has had *gonorrhea and chancroid several times*, but you observe *syphilis is not included* in the category. A very noteworthy omission. *Very rarely indeed does a patient contract syphilis more than once in a lifetime;* chancroid and gonorrhea can be caught *ad libitum*. But to go on with the history: On August 9th of the current year he contracted his present sore, thirteen days, he declares, after the connection. Here let us pause: *thirteen days after coitus the sore breaks out.* You remember what we found to be the case in studying the chancroid, "the sore came on *two or three days after* coitus"; here it is *thirteen*—four to six times longer. Deduce, then, this axiom: *The initial lesion of syphilis is endowed with a period of incubation which is denied to the chancroid;* but there is something still more interesting in this thirteen days' incubation. As a rule, the incubative stage of the initial lesion is longer: it usually lasts from *twenty-one to twenty-eight days* after the infecting connection. If, then, we reckon *twenty-four days as the average period of incubation*, thirteen days, the incubative period in this case, are shorter than usual, although it is not the shortest time recorded. The limits which are now recognized are, *maximum, ninety-eight days, minimum, ten;* and although these represent extreme cases, bear the possibility of their occurrence in mind in making your diagnosis. Those instances in which the period of incubation exceeds the maximum which

I have given you may discard, as they are based either upon errors in calculation or upon mistakes in diagnosis, and you may, therefore, adopt the following formula: *Always suspect the nature of a venereal sore which has not appeared until ten days or more after coitus.*

The history goes on to say that "it (the sore) commenced on the under surface and on the right side of the prepuce, and the soreness, swelling, and induration came on within four days. At present he has an *induration* extending all over his prepuce."

The induration, which is very perceptible, is, under the finger, of a *hard, resilient* character, entirely *distinct* and *separated from the surrounding* tissues, and is seated upon a *noninflammatory base.* Contrast this with what we found in the chancroid. In the latter the tissues were *soft* and *supple;* there was *no induration*, and the ulcer was angry looking—*inflamed*, in other words. In the initial lesion under observation the ulcer, if indeed we can call it an ulcer, is very *superficial;* it resembles *an erosion; the floor is clean and red in hue, the edges sloping and not undermined.*

Another point of interest is the fact that this variety of venereal ulcer does *not* have any tendency to *spread nor to eat* into the tissues, as does the chancroid; indeed, its whole course is *cold and slow*, and shows, nine times in ten, a *greater inclination to heal than to extend*—another point of difference between it and the chancroid, in which we found the opposite attributes.

Besides this, we observe the *singleness* of the lesion and the *scantiness of the secretion* as noteworthy conditions of difference between the two varieties of ulcer. With regard to the singleness of the lesion, you remember we found in chancroids that *multiplicity* was *not exceptional*, and that

this was brought about in two ways : either as *independent foci* of infection or by *auto-inoculation :* but in the *initial lesion of syphilis multiple sores are the exception* rather than the rule, *and when they occur, it is as independent foci of infection, never from auto-inoculation. Bear in mind, then, that the secretions of syphilis can not be inoculated as syphilis upon a syphilitic person.*

Now, while it is true that the secretions of syphilis are not inoculable as syphilis upon a syphilitic person, yet the secretion of an initial lesion or of a mucous patch, if irritated into purulent secretion, is *capable* not only of *auto-inoculation* upon the bearer of the sore, but it is also *capable of being inoculated upon a nonsyphilitic subject without producing syphilis*, acting somewhat as the chancroid does, but with this important exception—that the *ulcerations* produced by this *artificial inoculation do not* have a tendency to *spread to or destroy tissue ;* on the contrary, they usually *show a tendency to get well* unless they are further irritated.

The nature of the secretion is also deserving of a few words : it is *thin* and *scanty*, *not abundant* and *purulent*, as we find it in chancroids, and unless the ulcer is irritated from some cause, *never becomes purulent.*

I wish now to call your attention particularly to the *induration*, for this is a very important point, and one upon which too much stress can not be laid. Whenever this symptom is found *clearly* and *well marked*, it is of *value* as stamping the lesion with a character. But there are many cases in which the induration is *very thin and slight* (parchment induration) ; nay, more, where the *induration is entirely wanting.* Yet the sore has *not* changed its nature ; it is still *syphilis, and will be followed by secondary symptoms* as certainly as is the hard variety. This is why I urged you, when speaking of the chancroid, to abandon the use of

the word "soft"; for if you regard the soft sore as the one which is *par excellence* local and does not infect the constitution, what are you going to say of the sore which does contaminate, or, to speak more strictly, which is the first symptom of systemic contamination, yet which is "soft"? Pray what does the name tell you? Nothing; but chancroid and initial lesion do mean something; they tell you that the first is a local disease; the second, a constitutional one.

The term "hard sore" is also objectionable, because the hard sore means syphilis, in contradistinction to the "soft sore," which means the opposite; and yet some soft sores are syphilis. No! I think the names I give you are the best; if you know better ones adopt them; if not, use these with me.

Let me then give you another formula:

The initial lesion of syphilis is usually indurated; when present, this symptom is of great value; but its absence, which sometimes happens, does not change the nature of the lesion; it still remains syphilis. When the induration is absent, the diagnosis must be made from other characteristics.

We will now pass on to study the condition of the glands in the commencing stage of syphilis, and here we shall find many points of difference between the initial lesion and the chancroid.

To go back a little: you remember in studying the *chancroid* we found that the *inguinal glands* were *thickened and brawny*—confounded, so to speak, with the surrounding tissues in such a manner as to make a doughy mass, which showed, moreover, decided inflammation. Turn to the cases before us, and what do we find? The *glands* in the groin are *enlarged*, it is true, but they are *perfectly distinct* from one another; they *roll* about under the skin

freely and easily. When handled, they are *not fused* together nor with circumjacent tissue, as is the case with the chancroid, and they are *painless.*

Could anything be more opposite than these two kinds of bubo? yet this is not all. Syphilitic buboes *rarely suppurate; when they do,* it is from some *other cause* than the syphilis—generally from *debility* or an *enfeebled constitution,* and the *pus* they furnish is *laudable and incapable of conveying the disease either to the bearer of the lesion or to others;* in other words, they are *simple abscesses,* such as you are liable to meet with in any person who is run down in health. Neither are they dependent upon the site of the initial lesion, but *are met with on both sides of the body* and are *not due to the systemic poisoning* which has occurred; they are *due to some other cause than the one which has produced the initial lesion; nor are they due to absorption of matter from the ulcer.*

When I come to speak of the subsequent syphilitic symptoms, I shall show you how the glands over the body are similarly enlarged—what is called the *adenitis universalis syphilitica.*

Of the *initial lesion* of syphilis there are *several varieties:* the archetype, sometimes called the *Hunterian induration,* you have already seen. You can tell it as far as you can see it, and it is unmistakable, but unfortunately it is not always present. Sometimes the *initial lesion* has but a *thin, disc-like* layer of *induration* beneath it, which gives to the finger the sensation of a slight layer of parchment beneath the skin or mucous membrane—the "*parchment induration*" which I have already brought to your notice; and, again, very rarely, it is true, there may be *no induration* at all. The ulceration in the initial lesion is *usually* very *superficial,* and when seated upon a markedly indurated base, *is raised*

above the surrounding tissue; it is then known as the *ulcus elevatum*, and again it may be a *mere erosion* which, conjoined with *little or no induration*, is very puzzling and apt to mislead the surgeon as to its true character. *Beware of such!* Do not be in a hurry to pronounce positively on the nature of any such lesion, but suspend judgment, else you may make an awkward mistake by calling a given lesion innocent which a few weeks later will be followed by a general outbreak upon the skin and mucous membranes. In addition, the initial lesion has *no destructive* tendency, *no undermined* edges, *no gray floor;* on the contrary, it has a *red granulating appearance*, with oftentimes a *dark spot in the centre*, and is *prone to bleed* readily upon handling.

In those cases where the initial lesion itself gives little or no information appeal to the *chain of glands nearest to the lesion.* You will seldom find them intact, and their induration will often help you to a diagnosis.

Let me, before going further, make in tabular form a comparison between the initial lesion and the chancroid :

CHANCROID.	INITIAL LESION.
Little if any period of incubation.	Decided period of incubation.
Destructive, with tendency to spread.	Not destructive ; tends to heal rapidly.
Edges undermined.	Edges sloping, not undermined.
Copious, purulent secretion.	Scanty, serous secretion.
Contagious and auto-inoculable character of the pus.	Secretion not auto-inoculable.
Usually multiple.	Usually single.
Not seated upon an indurated base.	Generally indurated ; sometimes—rarely, however—not.
Glands liable to become inflamed ; when so, they may suppurate and become a chancroid, furnishing inoculable pus.	Glands indurated, not inflamed ; very rarely suppurate, and then from causes other than syphilis. Never furnish inoculable pus.

This gives you, at a glance, the important points of difference between the two ulcers.

The *site* of the initial lesion is a point of much interest, and I wish to recall to your minds what I said in an earlier chapter about some forms of *venereal diseases being transmitted without sexual contact.* This is the case in syphilis, the *initial lesion not infrequently* being met with upon the *lips*, the *cheek*, or upon the *nipple;* in the first two cases from kissing or from using contaminated utensils, a pipe, a spoon, or drinking-vessels ; and in the latter, from suckling a syphilitic child. Other places are the *fingers*, the *nose*, the *tongue*, the *throat*, and the palpebral conjunctiva of the *eye;* in short, lay it down as an axiom *that no portion of the body is exempt from being the seat of the initial lesion, although the genitals are the usual location, and naturally so from being more exposed.*

The *source* of infection is another point to which I invite your attention. A *chancroid*, as I have already explained to you, comes either *from a chancroid or a chancroidal bubo*, but *syphilis is caused* in other ways than from inoculation of the *secretion of an initial lesion.* The *secretion from mucous patches*, whether of skin or mucous membranes, as well as the *blood* of the syphilitic during the first twelve months at least of the disease, are capable of infecting a sound person, but, as I have already told you, they are *not auto-inoculable*, except in unusual instances. The *physiological secretions*, such as the tears, saliva, sweat, milk, and semen, are *all innocuous* so far as the question of direct inoculation is concerned. This latter, the *semen*, however, *may possibly be an exception*, for although it is *perfectly true that attempts at direct inoculation made from human semen have been negative*, it is *believed* by some to be *capable of contaminating the human ovum*, producing *syphilis in the off-*

spring without the mother participating in the syphilis of the father. It is the *contagious* property of *blood* and *mucous patches* which *causes many of the initial lesions of the lips, cheeks, and nipple;* the patient, not being aware of the danger, kisses healthy persons, who, perhaps, have an abrasion of the lips, and the disease is conveyed to them. As regards the *nipples*, the *mucous patches of the baby's mouth* perform the same office for the nurse.

Suppose the infection is derived in one case from the secretion of an initial lesion, in the second from that of a mucous patch, and in the third from syphilitic blood, how does the disease begin in these cases? *Always by an initial lesion seated at the point where the virus gained entrance; never in any other way. The only exception to the initial lesion being the first symptom of syphilis is found in the hereditary form, where the disease shows its appearance without any initial lesion having preceded the outbreak.* Syphilis does *not make its appearance* in the form of a so-called *secondary eruption without a preceding initial lesion*, although there are some cases where this would seem to be so. These cases are when the *initial lesion* is seated in some *unusual* or *not readily accessible place*—as, for example, in the *urethra of the male*, in the *cervix uteri*, upon the *lips* or *fingers* of both sexes. When it is seated in the urethra, palpation often reveals the remaining induration, and sometimes separation of the labia urethræ reveals the syphilitic erosion; a slight, gleet-like discharge is also present.

Another cause of confusion, when the patient has not come under observation until after the outbreak of general symptoms, is that the *initial lesion becomes changed into a mucous patch*—a symptom of the so-called secondary stage; but even here the *traces of the induration* will put you upon

your guard as to the real nature of this supposed mucous patch.

The *initial lesion* is also *subject to complications*, though to a less extent than the chancroid, the principal ones being *phimosis and phagedena.* When phimosis attacks the initial lesion, it is not so likely to produce such serious consequences as when it occurs with the chancroid, owing to the inflammation being much less, and also to the fact that the initial lesion does not ulcerate. The only danger to be apprehended from this complication is *gangrene*, and that may be so readily and easily obviated by an incision as practically to rob it of one-half its danger. You note that I said "*easily obviated by an incision*," and I wish you here to remember what was said in regard to this complication when speaking of the chancroid. Then I advised you *not to cut unless obliged to*, because the edges of the wound would become chancroidal; but *in the initial lesion no such danger is to be apprehended;* the *secretion* of the *lesion* and the *blood of* the syphilitic are *incapable* of being *auto-inoculated.* You may, therefore, operate, if you see fit, at once, so far as contagion is concerned, but I should *advise waiting a little* while, for the following reasons: first, because no operation should be done if the same result can be attained in any other way; and, secondly, because the induration, even if very thick and marked, will disappear under proper treatment, and, with it, the phimosis. But should *gangrene threaten*, then you not only may, but *should*, *operate* to avert this threatened evil, and you may practise the single or the double incision already advised in chapter II.

Phagedena in syphilis is of as *grave* import as in chancroid, and comes from the same cause, viz.: constitutional defects, due to alcoholic abuse or to a morbid diathesis, and it plays an important part as regards prognosis. The

ulceration, instead of being superficial, then becomes *deep and wide-spread*, the *floor is gray and pultaceous*, the *secretion* more *abundant*, and the *induration* may entirely *melt away* under the phagedenic action. Where the *initial lesion* is *phagedenic*, the *subsequent lesions are apt to take on ulceration and to pursue a rapid course*, being *rebellious to treatment* and exposing the patient to *grave and serious* consequences.

When we were discussing the chancroid, you remember I took occasion to speak to you about the *virus* of that disease, and I told you that while it was a term of convenience, the disease might possibly be due to the *existence of a bacillus*, and in these days when everything in heaven above and in the earth beneath is considered to be due to the presence of some bacterium it would be singular if syphilis escaped; nor does it. The so-called *bacillus of syphilis* has been named after its discoverer, *Lustgarten*, who states that it is *never found free in the tissues*, but is *inclosed only in the cells*. It is *not easy to find*, and by some syphilographers it is *doubted as being the cause of syphilis*. Now, while it is possible that this bacillus of Lustgarten may be the real cause of syphilis, the present condition of our knowledge causes us to give the Scotch verdict of "*not proven*"; hence I repeat here what I said when speaking of the bacillus of the chancroid, that I shall retain the words "syphilitic virus," and you must understand that this is an unknown quantity which is endowed with certain properties and which produces certain results. These *may possibly be due to the existence of a microbe*, but its *presence* is *not sufficiently established* to say *positively* that it is the *cause of the syphilis*.

Before going on to speak of treatment, let me say a few words about what is generally called the "*mixed sore*." I

wish the term could be abandoned, as it is confusing and does *not convey a correct idea* of the facts. It is really a *double sore:* there is *no mixture whatever of nature, course, or virus;* it is simply where *inoculation of a chancroid and syphilis occur simultaneously in the same person.* The two poisons being received at the same coitus, they operate differently as regards the time of their appearance. The chancroid appears first; remember, it has no period of incubation, and runs its course and perhaps gets well before the initial lesion comes upon the stage. At a later period, usually varying from ten to twenty-one days after the infecting coitus, the initial lesion appears, marked by its peculiar characteristics. It sometimes happens that the chancroid has not healed before the first symptom of syphilis is due. This, then, is what happens: the chancroid is surrounded with a ring of induration, the secretion becomes less copious, the floor fills up and appears redder and healthier, and the nearest chain of glands is indurated; the chancroid, in other words, has become changed into an initial lesion. But throughout the whole performance there is *no interchange of characteristics*, the *two lesions* remain *entirely distinct*, and "mixed chancre" is, to my mind, a misnomer; I prefer to call it a *double infection*, double in the sense that *two kinds of virus have been deposited in the same spot.*

It is in these cases of *double infection* that you will be most likely to meet with a *suppurating bubo*, the *pus* of which is *auto-inoculable*, and which, unless you are forewarned, may lead you to believe that syphilis is attended by a suppurating, auto-inoculable bubo. The *bubo is chancroidal*, similar to what we have already studied, *has nothing to do with the syphilis*, although it is contemporaneous with the initial lesion, and will require the treatment appropriate to chancroidal buboes.

As regards *treatment*, it is *simple* and, so far as the local trouble is concerned, *effective* in the majority of cases. In the first place, let me beg of you *never to cauterize an initial lesion unless it should be attacked by phagedena.* I know it is the rule to cauterize every suspicious looking ulcer, but in the case of the *initial lesion this not only does harm*, by irritating an otherwise simple ulceration, but it *retards its healing. Dress the lesion simply:* sometimes a piece of lint laid over the ulceration or erosion will suffice, but at other times a little more active treatment may be requisite. Of all *dressings*, I much prefer the *dry*, and of them iodoform heads the list, either alone or in combination with other drugs, thus:

℞. Pulv. iodoformi,
Lycopodii pulv., ... p. æ.
M.

Or—

℞. Pulv. zinc. ox., ... ʒij
Pulv. iodoformi, ... ʒj.
M.

Or—

℞. Pulv. hydrarg. chlor. mit., ... ʒj
Pulv. iodoformi, ... ʒij.
M.

Calomel, without anything else, may sometimes be used with advantage, but you must remember that calomel often acts as an irritant and produces an inflammation in a lesion which otherwise would remain bland and uninflamed.

As *iodoform* is as objectionable in syphilis as in the simple venereal ulcer on account of its pungent odor, you may also use here the same local dressings that you did in the chancroid, to wit: *orthoform, aristol, and iodol;* indeed, the tendency of the initial lesion is, as a rule, toward cicatrization, unless you imprudently meddle with it; hence you

may formulate this axiom: *In the treatment of the initial lesion the simplest and least irritating dressings are the best.*

Another method, known as the *abortive treatment*, at one time attracted attention, and that was the *excision of the initial lesion*, wherever it was possible to remove it, upon the theory that if this were done soon enough, constitutional infection would not follow, the argument being that the initial lesion was the starting-point of the disease. Subsequent experience has shown that *no matter how soon the initial lesion may be ablated, it does not prevent subsequent manifestations from appearing*, although in some instances the *subsequent lesions* have been *delayed beyond the time of their usual appearance.* This delay does *not* necessarily depend upon the removal of the sclerosis, because we know that, occasionally, the appearance of the initial lesion may be somewhat delayed, and the fact that subsequent symptoms did appear in spite of this slight operation would go to prove what I believe to be perfectly correct, that the *systemic infection takes place at the time of the contagious coitus;* in other words, the *initial lesion* is only the *first manifestation of a previous poison*, dating back, say, twenty-four days, and is *not the starting-point* of the *constitutional poisoning.*

If you prefer to use a *wet dressing*, a weak solution of carbolic acid is the best, of which the following will serve as an example:

℞. Ac. carbol. cryst., ... gr. ij
Aquæ, ... ʒ iv.
M.
Sig.—Apply on lint or cotton thrice daily.

Constitutional treatment, whether internal or external, is *better not employed*, save in exceptional cases, *until the subsequent* (*secondary*) *symptoms appear*, because in many instances it is impossible to diagnosticate the nature of

the lesion under observation, and inasmuch as *mercury*, when *given during the existence of the initial lesion*, has a tendency to *retard the outbreak of the secondary symptoms*, it leaves the surgeon in *doubt as to what the disease really is, and unable to tell his patient what or what not to expect. Delaying* until secondary lesions come on, or until the period at which they should appear has passed, *does not injure the patient's prospects of recovery*, and it does give the surgeon the opportunity of *informing the patient as to the nature of his disease*.

There are cases where it is *necessary to cure the initial lesion rapidly*,—as, for instance, in married people,—and to *retard* and, as far as possible, *check the subsequent manifestations;* but in such cases the patient should be told that by so doing the surgeon will be unable to tell him or her what subsequent symptoms to expect, or to count upon probable recovery, even after many months of treatment.

These exceptions do not then conflict with this general law, viz.: *Do not treat the initial lesion by the internal use of mercury, but await the development of secondary symptoms.*

Internal treatment by tonics, iron, quinin, and the like is *admissible* in this stage should the patient be *anemic*, a very frequent condition in syphilis.

CHAPTER IV.

SYPHILIDES OF THE SKIN AND ITS APPENDAGES.

In the last chapter we passed in review the initial lesion of syphilis, dwelling upon its characteristics and the main points of difference which exist between it and the chancroid. This one I purpose to devote to considering the nature of the subsequent lesions which occur in syphilis, what are commonly known as the secondary and tertiary symptoms, more particularly those which occur upon the skin, reserving the syphilides of the mucous membranes until later on.

In the first place, as regards the *nomenclature:* I wish you to remember that the terms *secondary and tertiary are ones of mere convenience*, and *must not* be *accepted* in a purely *chronological* sense. Many of the symptoms which are classed as tertiary may and do appear in the secondary period,—as, for example, the affections of the nervous system,—and should you be too bound down to name and rank all affections of the nervous system as necessarily tertiary, you will involve yourselves in much confusion and trouble. The true distinction I believe to be this, viz.: that during the *secondary stage the symptoms are more superficial and more amenable to treatment* than they are during the tertiary period, and that the *exudations* which occur during the *earlier stage* are *absorbed and removed more speedily* than those of the latter. In addition to this they have *not the same destructive tendency*, for we shall find as we go on that the *ter-*

tiary lesions are marked by deep, and oftentimes serious, loss of tissue, while the *secondary lesions* are, comparatively speaking, *mild, and leave behind no traces of their presence.* I, therefore, much prefer to speak of these lesions as the *superficial and the deep lesions of syphilis*, irrespective of their seat, whether on skin or mucous membrane, in the eye, ear, nervous system, or bone.

Before the symptoms upon the skin and mucous membranes appear there is a *period of rest* (*incubation*) between the occurrence of the *initial lesion* and the advent of the *subsequent manifestations*, during which time the *initial lesion* may have entirely *healed, leaving only the induration of its former site and an induration of the nearest chain of glands* as traces of its presence. Even these *latter may be very indistinct*, rendering the connection between the two sets of symptoms vague and uncertain, and the relation each bears to the other would be overlooked unless you were forewarned. Note, then, that there are *two periods of incubation in the early stages of syphilis, the first being between the infecting coitus and the appearance of the initial lesion, and the second between the appearance of the initial lesion and the coming-on of the early syphilides.*

The *length* of this incubative stage *varies* within certain limits, as does the incubation of the initial lesion. For all practical purposes you may consider the *maximum* limit as about *ninety days*, or three months, the *average being* from *forty-two to forty-five days*, or between six and seven weeks. The *minimum* limit you may fix at *twenty-five days*, or between three and four weeks, just about the length of the incubative period of the initial lesion.

Formulate for yourselves, then, this rule: *The early syphilides have, like the initial lesion, a period of incubation, the average length of which is forty-five days, but which may*

extend to ninety, beyond which time it is rarely protracted, unless it has been prolonged by the internal treatment of the initial lesion with mercury.

Before the early syphilides make their appearance there are certain *vague and by no means constant symptoms* which precede them by a few days, and which are known as "*prodromata.*" These are *fever, rheumatoid pains* of the muscles, *aching of the bones*, especially of the superficial long bones, such as the ulna and the tibia, and *headache*, usually confined to one lateral half of the head (*hemicrania*). The peculiar feature of these symptoms is that they come on *at night* when the patient is in bed, but not until the heat of the body has warmed the bed; hence in those patients whose occupations oblige them to turn day into night, such as bakers, the pains come on in the daytime, when they are warm in bed—so it seems to be really the heat which brings out the pains and not necessarily the time. When the patients are up and about these symptoms vanish. During the *fever* there may also be a *slight rise in temperature*, although this is not constant.

After the prodromata have lasted for a few days the syphilides make their appearance upon the skin and mucous membranes, and the first of these is known as the *erythema syphiliticum*, or, as it is commonly called, "syphilitic roseola." Here I wish to protest against the names which have been usually given to these syphilides of the skin. They are roseola for the erythematous and psoriasis for the squamous eruptions, such as come upon the palms of the hands and soles of the feet, ecthyma and rupia for the pustular crustaceous manifestations of the later stages of syphilis; and they are so named from the slight resemblance they have to the corresponding nonvenereal eruptions which appear on

the skin. The objection I make to these names is that they are *complicated and confusing*, and I much prefer the nomenclature I shall presently give you as being *simpler and more accurately describing their pathological condition*. The names I propose for your use are:

Erythematous,
Papular,
Pustular, and
Tubercular
} Syphilides.

These again may be subdivided as follows:

Erythema { Maculatum
Papulatum.

These also are called the macular and maculopapular syphilides. The papular syphilides are also divisible into the:

Papulæ { Miliares
Lenticulares seu
Squamosæ.

The pustular syphilides may also be divided into two groups, namely—

Pustulæ et
Pustulocrustaceæ,

And the tubercular into—

Tuberculæ et
Tuberculocrustaceæ.

In addition to these forms there is another variety, which is known as the gummatous syphilides, and this is further divided into the—

Ulcerating,
Nonulcerating
} Gummata,

according as they break down or not.

This includes all the varieties of the syphilitic manifestations of the skin, and the advantage of these names is that they describe accurately the physiological conditions of the lesion and its cause at the same time. Thus, papulo-squamous syphilide, although a little longer name than syphilitic psoriasis, tells you more, and the same is true of pustular syphilides as against syphilitic ecthyma. I shall, therefore, in describing the syphilides of the skin use the foregoing nomenclature, and the one which heads the list is the erythematous syphilide.

Varieties.—Erythema maculatum; erythema papulatum.

Synonyms.—Macular and maculopapular syphilides.

Erythema Maculatum.

This is the first one of the skin eruptions to make its appearance, coming on about forty-five days after the initial lesion, and is characterized by *rose-colored blotches, not elevated* above the surrounding skin, abundant over the entire *trunk, arms, and legs, sometimes invading the face*, notably the *forehead*, and occasionally being met with on the *palms of the hands and on the soles of the feet.* Just before the rash fully declares itself there is a peculiar *mottling of the skin*, looking as though the eruption were under the cuticle but had not yet made its way through. There may be at this time some *nocturnal syphilitic fever*, with a *slight increase of temperature.* One other symptom I have reserved, as I wish to dilate a little upon it, and that is, there is *no itching.* Syphilitic eruptions do *not itch*, although the skin of syphilitics is often irritable, hence if you inquire of such if there be any itching, they will as likely as not reply in the affirmative, yet when you come to examine the skin

there are no marks of finger-nails, such as are found in phthiriasis, eczema, lichen, etc. Do not, therefore, be thrown off your guard by any supposed itching of the skin in syphilis (of course, if lice are present, the case is different, but their presence and subsequent removal will explain and cure this symptom), although there may be, especially in women, an irritability of the epidermis.

The erythematous syphilide *pursues its course evenly and quietly*, passing on from the distinct rose-colored stains to a coppery hue, then to a dingy yellow, and *finally disappears entirely with a slight desquamation* of the cuticle, leaving no trace of its presence. A few words about the *coppery hue* of the syphilides: Its diagnostic importance has been *much exaggerated*, and you will, in many non-venereal skin eruptions, see as much of the copper color as you will in the syphilides.

Erythema Papulatum.

This variety of erythema comes on after the macular kind, sometimes even before its entire disappearance, and seems to be the intermediate link between the erythemata and the papulæ. It is *raised above the level of the skin*, is *flattened* and seated upon a *broad base*, is of a *darker hue* than its congener, the erythema maculatum, and is always *more or less scaly*. This desquamation in the syphilides is somewhat different from what takes place in the simple kinds of eruptions: it is *rather a peeling than an actual scaling*. It is less widely distributed than the macular kind, being found chiefly on the *back of the neck*, on the *back*, and on the *volar surfaces of the arms and legs;* it also affects the *palms of the hands and soles of the feet* rather more than does the erythema maculatum. Not infrequently, as I have

already said, it is found *conjoined upon the body with the macular variety;* indeed, in certain parts of the body where heat and moisture are found the *macular seems rapidly to pass into the papular eruption.* This is especially noticeable about the *genitals of women*, where these papules become quite luxuriant in their growth and secrete abundantly, *taking on the appearance of mucous patches, which indeed they really are;* perhaps you may recall several cases of the kind which I have already shown you in the wards. This variety paves the way to the next stage in the disease, where papules take the place of the erythemata.

Varieties. — Papulæ miliares; papulæ lenticulares; syphilis squamosa.

Papulæ Miliares.

The course which the erythemata pursue varies somewhat according to the intensity and the acuteness of the disease. Sometimes the erythemata will *entirely disappear*, leaving the skin unblemished, and this *freedom* from disease may last for *some weeks before the next step is reached.* Here you see, then, a tendency to incubation even between the various kinds of the eruption, but sometimes the attack is much more rapid than this, and before one form of eruption is gone another comes on, so that upon the same subject you will find macules, papules, and even pustules scattered over the body, constituting what is known as "*polymorphism.*" *Remember, then, that the papules may not appear until several weeks after the disappearance of the erythemata*, especially if a mercurial treatment has been instituted, or it *may come* "*with a rush,*" so to speak, one *train of symptoms crowding upon the other, leaving no interval of repose or apparent freedom* from the disease. We will suppose that the macules have disappeared and that

the papular stage is due; what must we look for? The *nocturnal pains* which had almost disappeared now *return*, and there may be *some fever*, when suddenly, over the entire *body, arms, legs, face, and scalp, small pointed elevations of a reddish color* break out, which are *closely packed together*, and are sometimes crowned at their *apices with a minute scale*. These go on for *several weeks*, getting more and more purple in hue; the papules become more scaly, less elevated, and finally disappear, *leaving a staining*, which, from being at first purple, becomes a yellowish-brown, and this in its turn *is absorbed*, leaving the skin free from scar or blemish of any kind. These papules are *small and bear some resemblance to the simple acne which invades the face and shoulders*, save that they are much more *numerous;* hence the name sometimes given it, of acne syphilitica. One peculiarity about this eruption—indeed, you may say about all the syphilitic eruptions—is a tendency to assume a *circular form*, grouping itself into the shape of a *ring, or segments of a ring*, over the body, having *sound skin within the circumference of the circle or between the segments of the same*, and this is kept up even into late stages of the disease.

When these *papules* are seated upon the *forehead*, they assume somewhat the appearance of a *ribbon or band stretched from temple to temple*, and among the older syphilographers the eruption received the fanciful name of "*corona Veneris*," a by no means inapt title. These *papules extend into the hairy scalp*, where, from irritation of the comb and finger-nails, each apex becomes covered with a *bloody scab*, somewhat resembling the disease of the scalp called impetigo capitis. We shall see the same thing occur in the *pustular* stage of syphilis, except that there the *crust is larger and thicker.*

Papulæ Lenticulares et Squamosæ.

After the miliary papules have run their course, sometimes even before, the next variety of the same eruption, the *lenticular*, manifests itself in the shape of *broad, flat papules considerably raised above the surface of the skin*, of a color similar to the preceding eruption, but *covered* with a *thicker and darker scale* which occasionally becomes *transformed into a very thin crust*, due to exudation from the papule itself. These papules are *not widely disseminated* over the body as are the erythemata or the papulæ miliares, but are found in *isolated groups upon the palms of the hands and soles of the feet, between the fingers and toes, upon the genitals of both sexes*, at the *angles of the mouth*, where they are frequently *continuous with mucous patches of the buccal cavity*, at the *edge of the hairy scalp*, upon the *shoulder-blades, on the buttocks and thighs.* When grouped together, as they often are, and *covered with scales*, they bear some resemblance to patches of *psoriasis vulgaris*, but in this latter disease the *scales are of a more silvery white color*, and are *smaller than* is the case in *syphilis.* When found upon the *genitals* and between the *toes*, the *heat and moisture of the parts favor their growth and development;* they *lose* their *scales*, and the *secretion* which exudes from them *covers their surfaces with a dirty white layer*, which can be wiped off, revealing a *glazed, red floor.* These are usually the lesions which have been described as *mucous patches of the skin*, but which the Germans more accurately call the "*moist secreting papule.*"

When seated at the *junction of mucous and cutaneous surfaces* on the *genitals*, the papules retain very much the *same characteristics as the mucous patch*, but at the *angles of the mouth* the skin-lesion, from exposure, is covered with

a *dry scale, sometimes a thin crust*, while the lesion of the *mucous membrane* is *moist* and covered with a *whitish pellicle.*

But it is to their position upon the *palms and soles* that I wish to invite your special attention. In the beginning of their growth the papules are *broad, flattened, and of a deep purple color*, the *apices* are covered with *scales*, which are renewed as soon as they get rubbed off. Later on these *papules coalesce and form broad patches*, which become *fissured* and *bleed*, and the blood mingled with scales forms a *thin crust* upon the surface of the lesion. These patches *extend* in size, become *very much thickened*, and, covered as they are with scales and dried blood, are often with difficulty distinguishable from *chronic eczema of the palms of the hands.* But I beg you to bear in mind that this *latter affection is, in my experience, a rather uncommon disease*, whereas a *papular syphilide of the palms is not infrequent.* Of course, when you are able to get a history of syphilis, the nature of the lesion is clear, but sometimes you may get none, perhaps can not ask for any, and in such cases it will stand you in good stead to remember that nine times in ten such lesions of the hands and feet mean syphilis.

Formulate, then, this rule: *Squamous affections of the palms of the hands and of the soles of the feet are nearly always syphilis and require antisyphilitic treatment.*

We are now nearing the boundary-line which is supposed to separate the secondary and tertiary lesions, and heretofore we have noticed no tendency to ulcerative destruction; all the lesions disappear and leave no trace behind them. But in the next stage this is changed: pus is formed, and pus means destruction of tissue. The lesions which we are now to consider I have divided into *two* groups, *the pustular* and the *pustulocrustaceous—i. e.*, those which remain *pustular*,

not becoming covered with a crust, but being absorbed, and those which *break down* and *are covered with a scab.*

Varieties.—Pustulæ ; pustulæ crustaceæ.

Pustulæ.

This variety *begins differently* from any which we have heretofore examined, having its *seat more deeply embedded in the tissues* than the papule, and *starts* from the *true skin and not in the epidermis.* It is the kind known as impetigo syphilitica. Starting then from the *deeper layers of the skin*, it is felt beneath the surface as a *small, hard point*, which rapidly becomes *elevated* and is crowned at its *apex with a pustule.* This *pustule increases* in size, and may *occupy the entire base* upon which it is seated, said *base being surrounded by a purple areola*, while the *pustule itself is yellow.* This *pustule is full, round*, and in the majority of cases *distended with matter*, which, if the pustule is broken, dries into a *small superficial crust*, revealing, on removal, a *slight ulceration beneath.* Moreover, this pustule is *not umbilicated*, as is the case in variola. Provided the *course* of the disease is *favorable*, the pustule *dries up* and becomes covered with a few *flakes of dried epidermis;* these are subsequently *cast off, and a discoloration of the skin remains.* After a longer or shorter time this *staining fades* away, and *unless the pustule has started from deep down in the tissues, no scar is left behind.* If its origin has been *deep-seated*, after the pigmentation vanishes *a white scar* is visible, corresponding to the size of the pustule, and is *due to an atrophy of the cellular tissue* beneath the skin. This is *not so marked* as it is in the crustaceous syphilides.

These *pustules are widely scattered over the body*, the

head, face, trunk, arms, and legs being invaded, resembling, in this respect, the erythematous and papular syphilides. This variety may be succeeded by *another crop of pustules* of the kind I have here designated as *crustaceous*, and which are more serious than the ones we have just studied, inasmuch as they are always attended by *ulceration, sometimes quite extensive*, and are *not so amenable to treatment.*

Pustulæ Crustaceæ.

The pustulocrustaceous syphilides commence with a *more pronounced* and *more diffused* amount of *exudation* beneath the skin than do the nonulcerating pustules; they *come rapidly to the surface*, the pustule *breaks*, and when it does, an *ulceration more or less extensive* is found beneath. Sometimes this ulceration does *not penetrate deeply* into the tissues, but *spreads laterally* over quite an extent of surface, *secretes abundantly*, and *presents irregularly shaped borders* (scalloped), due to the coalition of several individual pustules or groups of pustules. This is known in the books as syphilitic ecthyma. At other times the pustule *increases enormously in size, ulcerates*, and the *ulceration extends deeply* into the tissues, making a *punched-out cavity*, which is *covered* over by a *thick, brown or black crust*, due to the admixture of blood with the pus. This *crust* continually *increases in height* by accretion, at its base, of fresh matter from destruction of tissue, and forms over the ulcer a *conical scab*, from one-half to two inches in height, which is firmly mortised into what seems to be sound skin, but which, on removal of the crust, is seen to be *undermined by the ulceration.* This undermining of tissue is also found in the so-called ecthymatous variety, but in a much less degree. This is the rupia of the books, one of the worst

forms of the syphilides you will be called upon to deal with, and which is *frequently rebellious* to treatment.

The *seat* of both varieties is *more limited* than is that of the nonulcerating pustules, which, when they appear, are more likely to be *discrete*. The *face*, the *upper arm*, the *thighs*, and the *buttocks* are their *favorite situations*, although they are *sometimes found upon the trunk, especially the back*.

Varieties.—Tuberculæ ; tuberculocrustaceæ.

Closely conjoined with the pustulocrustaceous syphilides in nature and course are the tuberculocrustaceous eruptions. They *affect the same portions of the body* as the former, and only differ at their commencement in being *larger and harder*, and may be regarded as the connecting link between the pustule and the gumma. The *ulceration* which ensues *runs much the same course* as in the so-called rupia—is *deep, destructive, and often rapid*, the *crust* is *thick and elevated*, and in its subsequent course is not to be distinguished from its congeners of the pustular variety. When I come to speak to you about the syphilitic affections of mucous membranes, I shall show how, under certain conditions, *these ulcerating syphilides may be mistaken for chancroids*.

Varieties.—Ulcerating and nonulcerating gummata.

The next and last symptom to be spoken of is the gumma (Pl., gummata), in which the *amount of infiltration* into the skin and cellular tissues is *very abundant and brawny*, and if it *breaks down*, gives rise to a *very serious and nasty-looking ulceration*. Two varieties of this gummatous infiltration exist, the *diffuse* and the *circumscribed*, and both kinds, if left untreated, *will ulcerate*. The resulting *sore is deep, has a tendency to burrow*, has a *yellowish floor covered with the remains of dead and dying tissue*, and *secretes abundantly*—in many of these points *resembling a*

chancroid, but in their *nature* they are entirely *dissimilar. A chancroid becomes worse under a mercurial course;* this is poison to it, while in the *lesion under consideration mercury is the only thing that will do it permanent good.*

In addition, the *differential diagnosis* may also be assisted by a *microscopical examination* of the *secretion of the gumma* to detect the *presence or absence of the streptobacillus of Ducrey or of the bacillus of Lustgarten.* Should the *former be present*, the probabilities would be in favor of the lesion being chancroidal, although its *absence* would not *necessarily indicate* that the lesion was *gummatous;* its nature, therefore, would be determined by other characteristics.

These gummata are found upon the *thighs and arms* more frequently than they are elsewhere, and are *single rather than multiple*, although they may be associated with *gummata in the viscera and in the mucous membranes.* When patients have arrived at this stage of visceral syphilis, a very peculiar condition of the system supervenes: what is known under the name of *syphilitic cachexia.* In this stage they *steadily but surely run down*, the functions are *no longer active*, *assimilation* either of food or medicine *ceases*, and *death* supervenes *from exhaustion.* Happily such cases are *rare*, but their occurrence serves to show what syphilis is capable of doing.

We have now finished the study of the lesions known as syphilides of the skin, and I have given you their salient points without burdening your minds with unnecessary details. I have passed over *in silence two varieties:* the *vesicular* and the *bullous syphilides* which are described in some treatises on venereal diseases. I omit them for two reasons—first, because I doubt their separate existence (both of them really belong to the pustular syphilides); and, secondly, if they do exist, they are so *very*

rare as to make them curiosities of syphilis rather than regular lesions, and my object in this book is to avoid undetermined points and to give you only what is practical and certain. But before passing on to a consideration of the effects of syphilis upon the appendages of the skin I wish to say a few words as to the *general course* which the cutaneous syphilides pursue.

In the first place, after the initial lesion has passed away there may be a period of apparent immunity from the disease before the syphilides appear; this I have already told you is the period of incubation between the so-called primary and secondary stages. The erythemata appear and disappear, leaving another intermission between the erythemata and the papulæ, and this period varies from two weeks to one or two months, according to the activity and efficacy of treatment. After the subsidence of the papules another period of repose of several weeks may occur before anything further appears, when some variety of the papular syphilides will recur, or, if the disease is progressing, pustules will show themselves. So it goes on, each stage advancing progressively from superficial to deep lesions—from those symptoms which are mild and which are readily absorbed to those which are ulcerative, destructive, and which are not absorbed.

But, in place of advancing, we will suppose the disease yields to treatment; what do we see then? The erythema vanishes, and the patient, though kept under observation for some time, displays nothing more; or, at the end of several months, he may show a slight recurrence of the erythema, or perhaps a few scattered papules. Treatment is vigorously pushed, the papules disappear, and the patient hears nothing more from his syphilis. He is, to all intents and purposes, well. But there is one point I wish to lay

stress upon : *syphilis never runs a haphazard course;* it never begins with deep-seated lesions first, to show later on superficial ones, but it pursues, if a serious case, a pretty steady course from bad to worse ; if, on the contrary, it be a mild case, occasional relapses of the same kind of eruption may occur, but it never skips about. I shall revert to this point again when I come to speak of the prognosis.

As regards the course these lesions pursue, you may lay down this broad general principle : *the superficial lesions disappear quite quickly, the deep-seated ones quite slowly.* In order that you may readily comprehend this, I append here a table giving approximately the time after the appearance of the initial lesion at which the various syphilides are due and their duration :

Name.	Due.	Duration.
Erythema, . .	6–12 weeks.	3–6 weeks.
Papules, . . .	2–6 months.	4–8 weeks.
Pustules, . . .	6–15 months.	2–4 months and more.
Gummata, . .	1–5 years and more.	½–2 years and more.

As appendages of the skin, the *hair* and the *nails* invite our attention, and of the former there are two varieties of syphilitic disease known as *alopecia*, one of which occurs in the *early*, and the other in the *late*, stage. The *early alopecia* is the more *general* of the two, *not being confined to the hairy scalp*, its usual seat, but attacking the *hair of the face*, and even of the *entire body*. I have seen one case where the patient lost all the hair of his head, face, and body. This seems to be due to *changes* going on in the *hair bulbs* themselves, and *not* to any changes *in the follicles*, so that the *hair grows again* as luxuriantly as before. This is *not* the case *in the late stage*, when the lost hair is *not*

generally replaced, and this is due to *disease of the follicles* themselves, as well as to their *destruction from deep ulcerations* of the scalp, face, etc.

The early alopecia is coincident with the erythematous and *papular, the late with the pustular and tuberculocrustaceous, eruptions.*

The affections of the *nails* belong to the late stage of syphilis, and are usually *concomitant with the pustular lesions.* During the existence of the papulosquamous syphilides, however, the *nails of fingers and toes* are sometimes affected: they *crack*, the *edges* become *ragged and uneven*, and at times *scaling of* the *surfaces* takes place. But *later* on in the disease *pustules occur in the matrix* of the nail, causing *detachment*, and the *nail drops off.* After this happens the *ulceration* of the *matrix* may *continue, destroying it* and *with it all hope of a renewal of the nail.* If the *ulceration is checked* before this stage is reached, the *nail may be reproduced;* but its growth is *very slow*, the *new nail is brittle, uneven, and ragged*, and is seldom of much use.

CHAPTER V.

SYPHILIDES OF MUCOUS MEMBRANES—SYPHILITIC ADENITIS.

Following naturally upon the syphilides of the skin come the *syphilides of mucous membranes*, and these are among the *most common* of all the affections of the earlier stages of the disease, as well as the *most obstinate* to treat. They *recur again and again*, often being the *only* symptom of syphilis which remains after the first outbreak has passed away, and are frequently a source of more annoyance to the patient than any of the manifestations upon the skin, unless they be those of the face.

Like the syphilides of the cuticle, the syphilides of the mucous membranes are *divisible into the superficial and the deep kinds*, the former of which are *not* in themselves *serious;* the latter are of *extreme importance*, from the consequences which they entail by *destruction of tissue.*

Coincident with the outbreak of the erythema maculatum the patient will complain of a feeling of *soreness of the throat and dryness of the fauces.* Inspection reveals the entire mucous membrane of a *congested*, *red* color, or, as occasionally happens, having spaces of sound mucous membrane between the congested spots, and resembling, in many respects, the eruption upon the skin.

Sometimes this erythema is *continuous* upon the mucous membrane of the tongue and the entire buccal cavity, and *so general* is it that it may be mistaken for a scarlatinal sore throat, particularly if the syphilitic *fever* has been at

all high. But a little attention to the other symptoms will save the physician from such a mistake, and the treatment will definitely settle the doubt. The *sides of the tongue are dotted with small punctate spots*, giving it somewhat the look of a ripe raspberry, and it has quite a peculiar appearance. With all this congestion there are very *few physical* symptoms: the *voice is not materially changed*, the *breathing is not impeded*, *nor* is *deglutition difficult*. The *tonsils* are sometimes *enlarged*, and can be felt externally as well as seen internally, and the *glands* of the *posterior and anterior cervical* regions are *indurated* and *slightly enlarged*. In addition to these sets of *glands* the following may also be *implicated: the anterior and posterior auricular, the submental, and the submaxillary*.

This erythema of the mucous membranes disappears in the same time and manner as the erythema of the skin, only as the parts are protected from the air, no desquamation occurs. The congestion tones down from purple to red, the red to the normal pink hue of mucous membranes, and no vestige of the disease is left.

Here, also, as with the syphilides of the skin, we may have a period of *rest and freedom* from symptoms, but of all the manifestations of the earlier stage of syphilis this is the *most persistent*, and the patient will hardly get rid of one crop of eruptions before another crop is ushered in, and that, too, while treatment is going on. Sometimes this may be a relapse of the erythema faucium, or it may be a form which I am now about to describe.

The patient consults the surgeon for a *soreness of* the *throat*, resulting, as is frequently stated, from cold, conjoined with "*fever-sores*" upon the *tongue and mucous portions of the lips and cheeks*. An examination shows the mucous membrane of these parts *slightly thickened*, as

though from infiltration of the parts, and on the surface are seated *opaline, glistening patches* of a white color, *devoid of any true ulceration*, and usually *sensitive* to the action of hot and cold drinks, pungent condiments, etc. This *tenderness is* especially noticeable when the lesions are seated upon the *tongue or lips*. Associated with these mucous patches there may be found upon the body a papular or papulopustular eruption, but very often there is nothing at all except the lesions of the mucous membranes upon which to found a diagnosis. I know of few points in syphilis more puzzling to decide upon than these same mucous patches, particularly where patients insist that they are associated with a disordered condition of the stomach, when for want of certainty as regards history and antecedents the surgeon falls into the error of considering them as simple "aphthæ."

The white *covering* of the mucous patches is *closely adherent* to the tissues below, and it *can not be detached* without causing some slight *hemorrhage;* indeed, in some cases this *white film is really below the surface, and is an actual infiltration into the submucous tissues with external ulceration.*

This form of mucous patch is extremely *obstinate*, and *recurs* repeatedly upon the same spot or upon adjacent parts of the membrane. Gradually, however, under active and persistent treatment the lesions *disappear*, it may be for good, or else they *reappear* in another form corresponding to a *more advanced stage* of the disease.

This variety is specially to be found in the *throat*, its favorite habitat being the *tonsils* and the *posterior arches of the palate*. Occasionally it is found upon the *dorsum and sides of the tongue*, less frequently upon the *buccal mucous tissue*. Its first appearance is a *slight elevation* of the

membrane from *infiltration* into the *submucous tissue*, but this does *not last;* the *elevation breaks down* and is converted into an *ulceration* varying in depth according to the infiltration.

The *floor is uneven and gray* in appearance, and the *secretion* is *not very abundant.* But *little inconvenience* results to the patient from the presence of these lesions, as the parts become *callous* from the infiltration and thickening of the tissues, and the ulcers are *not sensitive to heat and cold*, as they were in the earlier stage. These *ulcers* have a tendency to *extend* slowly, it is true, but still *deeply*, and when they are seated upon the tonsils or behind the posterior arches of the palate, they become of quite large size. It is at this stage that a *change* in the character of the *voice* takes place, and the usual clear tone is exchanged for a *hoarse whisper* or an *uneven strident sound.* An examination by the laryngoscope shows *ulceration* of the mucous membrane of the *larynx* and of the *false vocal cords with edema.* On attempted phonation it is seen that the true cords do not come evenly together, hence the timbre of the voice is materially altered.

Succeeding this stage, sometimes merging into it, is the true *ulcerative* syphilide of mucous membranes, due to the breaking-down of the gumma, which forms in the submucous cellular tissue. The first thing to attract attention is a *diffuse brawny swelling* of the soft parts, which progresses *rapidly*, *breaks down*, and, when it occurs in those portions of the body that act as septa between cavities, it produces *important and irremediable destruction.* The action is *rapid* in these cases, a few days being oftentimes sufficient to cause extensive disfigurement. I shall return to this topic when I come to speak upon the syphilis of special organs.

In the last chapter I spoke to you of cases in which *ulcerating gummata of mucous membranes might be mistaken for chancroids.* A patient who has been the subject of an old and long standing syphilis will present himself to the surgeon with a circumscribed hard tubercle seated upon the mucous membrane of the penis, either in the fossa glandis, on the reflex layer of the prepuce, or at the junction of the frenum with the fossa. This tubercle is perfectly *painless, unattended with* any *inflammation,* and apparently *indolent* in character. It will *suddenly break down,* become converted into a *deep, punched-out ulcer,* corresponding in extent with the original tubercle, presenting a *yellow, uneven floor, devoid of induration,* and secreting a *thin, viscid fluid,* which, from irritation, will become *purulent.* If this lesion be seen for the first time in the ulcerated stage, it may readily be mistaken for a chancroid, especially as it evinces destructive tendencies, for it may *eat* away the frenum, *burrow* into the urethra, and *extend* far beyond the limits of the gumma which gave it birth. These are puzzling cases to decide upon ; the history will sometimes help you to a diagnosis, but of all things the treatment will be the *experimentum crucis.*

Although the result of treatment will be the crucial test, you should not omit to make *microscopical examination* in these cases if, peradventure, you may detect either the *streptobacillus of the chancroid or the bacillus of Lustgarten,* which he claims to have found in gummous ulcerations as well as in the sclerosis of the initial lesion and in the mucous patches. Should you find either one of these two, it will be strong confirmation as to the character of the lesion, but you must not count too strongly upon positive results from your examination. My own experience is that these *bacilli are difficult of detection.*

The ordinary *remedies for chancroid are useless:* cautery and local dressings do not produce the results they should, and you begin to despair. Change your tactics, and without giving up topical applications, except the cautery, *put your patient upon a mixed treatment* (mercury conjoined with the iodide of potassium), and the result will, I know, gratify you; *the lesion will get well.*

Conjoined with these symptoms of the skin and mucous membranes during the earlier stages of syphilis are others fully as important for you to know about and remember. I refer to the enlargement of the glands over the entire body, which goes under the name of *adenitis universalis.* You remember, when we were studying the initial lesion, I called your attention to the induration of the chain of glands nearest to the lesion, and told you at the time how important it was. As the period arrives for the outbreak of the subsequent lesions the glands all over the body—the anterior and posterior cervical, the submaxillary and submental, the anterior and posterior auricular, the occipital, the epitrochlear, and the inguinal glands—are found enlarged and indurated. This manifestation is coincident with the erythema cutis et faucium and with the alopecia which mark the early stages of syphilis. Under treatment these indurated glands slowly subside, but their subsidence is very gradual, and if the result has been very good, no trace is left behind; but usually a slight hardness remains even after the patient has entirely recovered from his illness, sufficient to show the practised finger that trouble has existed.

This induration differs very widely from the brawniness and hardness which obtain with some chancroids. The condition of the glands found with the chancroid you are already familiar with, but with the adenitis in this stage of syphilis you

are not conversant. In the first place, the *glands are painless;* secondly, they are *unattended with acute inflammation;* and thirdly, they do *not suppurate.* They appear as round kernels, from the size of a small buckshot to that of a large pea, lying just beneath the skin, and upon handling they roll about quite freely under the tissues. This constitutes the form of infiltration of glands which occurs during the early stages of syphilis; in the later stages of the disease another variety occurs, which is entirely different in its course and nature. This is called the *gummous infiltration of glands, and resembles in a slight degree a chancroidal bubo,* just as the broken-down gummata of the penis will simulate a chancroid. The swelling begins as an *infiltration, not* only of the *gland* itself, but of the *circumglandular tissue*, which becomes *tense* and *brawny*, and *breaks down* unless its course be checked by proper treatment. There is *one* very *notable point* in this breaking down: *the skin covering the swelling opens in several places, and what comes from the enlargement is not pus, but a thin, sticky, colorless fluid not unlike thin gum.* This exudation is *not abundant* at any one given time, but *comes away continuously*, and its discharge does *not materially diminish* the size of the swelling.

This completes the circle of symptoms of the skin and mucous membranes likely to be met with in the average cases of syphilis which will fall to your lot, as practising physicians, to treat. But there are other lesions to which I wish to call your attention, fully as important as any you have heretofore studied, the consideration of which I shall reserve for a separate chapter.

CHAPTER VI.

SYPHILIS OF SPECIAL ORGANS.

The lesions we are now to consider are those which affect the special senses of *sight*, *hearing*, *smell*, and *generation;* and as most of them occur in the late and more dangerous stages of syphilis, a correct knowledge of their natural history and course is important.

Commencing with the *eyelids*, we find that the skin and mucous membranes of these organs are sometimes the seat, during the *early* stage in syphilis, of the initial lesion and of mucous patches; but as these symptoms do *not* differ in their general character from those found elsewhere upon the body, they need not detain us. During the *later* stages the lids may also be attacked by *pustules or gummata*, which pursue the same course that similar lesions do elsewhere; and the description which I have given in the two previous chapters will answer for these lesions of the lids.

When the *initial lesion* or *mucous patches* are seated upon the *palpebral conjunctiva*, some inflammation of this tissue may ensue; but it is usually very slight and limited in extent.

The ocular and *palpebral conjunctivæ* may be the seat of other lesions, to wit: syphilitic papules and gummatous infiltrations; the latter of these is perhaps the most common.

Until within recent years the acquired form of syphilitic *keratitis*, or inflammation of the cornea, was not clearly

recognized. It is *not a common* affection in this variety, although it is *frequently met with in congenital syphilis.* It occurs as *opacities* of the *cornea* seated in Descemet's membrane. *The punctate variety is very rare in the acquired type.*

The *sclera* also may be the seat of trouble, and usually presents itself as one of three groups: *epi- or periscleritis, scleritis parenchymatosa, and scleritis gummosa,* the first two being varieties of the same form of inflammation. They may occur *alone,* being confined to the sclerotic, or they may be *associated with secondary changes in the cornea, iris, or in the ciliary body;* the latter, or gummatous variety, is the most common. It commences usually near the *edge of the cornea* as a slight *elevation* over or *close to the insertion of the external rectus* muscle; is of a *deep-red* or livid *color, smooth,* and *covered,* unless ulceration takes place, *with sound conjunctival membrane.* There is *very little,* if any, *pain, nor* is there usually *photophobia, photopsia or much peripheral inflammation.* It runs its course *slowly* and *quietly* and *ends* in one of two ways: either by *ulceration* or by *resolution.*

One of the most *serious* syphilitic lesions of the eye is what is known as *iritis,* or an inflammation of the iris; and this is *doubly dangerous* because, from its close relation with the ocular vascular tunic,—the choroid,—the disease is *liable to invade the deeper tissues* and result in *serious consequences to vision.*

This symptom usually comes on about the *sixth month* of the duration of the syphilis,—sometimes, however, as *early as the third,*—and is associated with a syphilide of the skin and mucous membranes. It commences with what the patient calls a "*weakness of the eye,*" which, upon examination, is found to be very much *congested,* and this

congestion is present not only in the vessels of the conjunctiva, but of the sclera also. It is more *marked close to the border of the iris*, near the cornea, and is attended with *lachrymation and photophobia*. Upon close inspection the *iris of* the affected eye is seen to be of a *dull, hazy color*, to have *lost its lustre*, and it looks as though it were infiltrated with fluid. The *pupil is small and contracted;* and if a few drops of atropin be dropped into the eye, the *opening* will be found *irregular* in shape, and the *pupillary margin* of the iris *bound down to the anterior capsule of the crystalline lens.*

Note, then, these points in syphilitic iritis :

First, congestion of the vessels of the conjunctiva and sclera; second, lachrymation; third, photophobia; and fourth, adherence of the pupillary margin of the iris to the anterior capsule of the lens.

In addition to these symptoms the patient complains of a *severe supra-orbital pain*, which, although present during the day, is *more intense at night*, depriving him of rest and sleep.

It *seldom* happens that *both eyes* are attacked *simultaneously:* the usual course is for one eye to be affected first ; as the disease subsides in that, the other one succumbs, and upon its recovery the first one is a second time attacked—constituting what is known as a "*see-saw iritis.*"

This is the variety which generally occurs in the *early stage of syphilis;* but *later* on *another kind* appears, which is still *more serious.* The *congestion, lachrymation, photophobia*, and *supra-orbital pain* are again present in a more *intensified* form ; the *infiltration* is more *marked;* and at the *pupillary margin* of the *iris*, apparently springing from the *uvea iridis*, an irregularly shaped *nodule* is seen which protrudes into the anterior chamber, sometimes completely

blocking up the pupil. This *nodule may break* into the anterior chamber, and it then discharges a peculiar looking *flocculent* fluid, which is *not pus*, but *gummatous* matter. This form of gummatous iritis is often conjoined with a pustular eruption upon the skin, or with gummata of some portion of the body.

Under proper care and treatment the *inflammation* and congestion *subside*, the *iris* assumes its *normal color*, and if the adhesions have not been very firm, the *pupil regains its normal contour;* but too frequently the *adhesions are permanent*, and the pupil, particularly when dilated by atropin, shows an irregular border. This may *not*, however, be a *serious* matter, *nor does* it necessarily *affect the vision.*

In the next stage, however, matters are *different.* As the disease progresses the deeper tissues are affected, the *choroid* becomes *implicated*, and the patient complains of *dimness of vision, photophobia, and deep-seated pain in the eye.* Examination shows the *normal* range of *vision diminished*, and the ophthalmoscope reveals *infiltration* of the *choroid*, *haziness* of the *choroidal* and *retinal vessels, with pigmentary deposits in the choroid*, and, later on, *atrophy* of the choroidal tunic takes place, leaving the sclerotic visible beneath. This affection of the choroid is very often accompanied with an inflammation of the ciliary body, known as *cyclitis*, which is usually apparent as a *ring of congested vessels surrounding the iris about its conjunctival border.* It *may or may not* be associated with *iritis.* The *symptoms* become much *aggravated*, *pain* and *photophobia* are *increased*, and the patient complains of a *marked diminution in vision* with a feeling as though he were looking through a veil. If an ophthalmoscopic examination of the eye be made, it will be noted that the *vitreous* humor is *hazy*, *opaque*, and filled with *shreds and coagula* which float about, rising and fall-

ing according as the patient looks up or down. This is known as *hyalitis*, and this hyalitis is sometimes associated with *opacity of the anterior capsule of the lens.*

The *retina* may also share in the disturbances which have invaded the other portions of the eye, and the symptoms which occur are *loss of vision with deep-seated pain.* The ophthalmoscope shows a general *hazy* and *indistinct look* to the *retina;* the *vessels* are *blurred and diminished in size*, especially the *arteries*, while the *veins* themselves may be *larger* than usual, and this is especially the case if the original attack be complicated with an inflammation of the sheath of the optic nerve, known as *neuritis.* Under these conditions the *retina* has a *boggy* look, as though it were infiltrated with fluid. If a *gummatous* infiltration be seated along the *sheath of the nerve* or in the *brain* tissue surrounding the nerve, we then find the *optic nerve prominent and congested*, to be later on followed by *atrophy* and a *cupped condition of the optic nerve.*

These deep-seated affections of the eye in syphilis are very important, as unless they are promptly treated *blindness may result.*

Besides these affections of the eyeball proper, the *caruncul*æ *lachrymales* and the *lachrymal gland* may be the seat of gummata. These affections are attended by *swelling* of the parts, which may, under treatment, *disappear*, or it may *break down* and leave an *ulceration* similar to other ulcerating gummata of the skin.

The *syphilitic affections of the ear* are not so well understood as are those of other parts of the body. The *auricle and external auditory* canal may be the seat of *mucous patches*, and this variety of lesion belongs, of course, to an early stage. In addition, the *middle ear* may also be affected in the *early* as well as *late stage*, and this is due to

a probable *infiltration* of the mucous lining of the middle ear, as well as to an *extension* of the disease from the throat *along the Eustachian tubes*. The symptoms complained of are a feeling of *tension in the ear;* sometimes *tinnitus aurium*, although this is not constant; and a *diminished power of hearing*. These are frequently associated with *nocturnal hemicrania* and the *early syphilides* of the skin and mucous membranes. The speculum may show no trouble of the *tympanum*, or at the most a *soggy* condition of this membrane, with a *slight sinking of the drum-head*. This early lesion is *not* usually *serious*, as the symptoms pass off without affecting audition to any marked degree.

But when syphilis invades the *deep* portions of the ear,—the *labyrinth and cochlea*,—then you may expect *serious* trouble, and the patient can consider himself *lucky* if he *retains even a portion of his hearing*. In such cases the *symptoms* are *vague and ill defined*, being limited to *pain in the head*, which is *not specially nocturnal* in character, and occasionally *tinnitus aurium*. These continue for a longer or shorter time, when the patient *suddenly wakes up* some morning to find himself *completely deaf*. This peculiarity of *suddenness* in the attack is one worth your study, for you will find, when you come to examine other cases of *nervous syphilis*, that the same trait is present. *The deafness is complete:* the watch and tuning-fork, when pressed against the ear, convey no sound, and very often the same is true when these instruments are pressed against the bones of the skull or the teeth. I need hardly tell you that in such cases the *prognosis is not favorable*. The *cranial pain is frequently severe*, and is *not* confined to any one portion of the head, sometimes being *occipital*, sometimes *frontal*, and at other times it is *vertical or basilar*. The *tinnitus* is the most

distressing symptom in these cases, and is extremely *rebellious* to treatment, lasting even after a portion of the hearing power has been restored.

The *nose* and *air-passages*, in common with the rest of the body, are liable to invasion from this infernal disease, which spares no tissue of the human frame but preys on all alike. In the *early* stage of syphilis the *nasal mucous membrane* becomes *congested*, and is the seat of *mucous patches* both in its anterior and posterior portions. These manifestations yield readily to treatment, and produce only slight discomfort; but as the disease progresses the parts are attacked by *ulceration*, with or without *necrosis of the nasal and palatine bones*, which gives rise to a very *fetid, abundant discharge*. This is known as *ozæna syphilitica*—a form of ulceration so disgusting and offensive as to render the subject of it a burden to himself and a curse to those who are brought in contact with him. If conjoined with *necrosis of the nasal bones*, the latter are *stripped* of their *periosteum* and *crumble away*, causing *collapse of* the *bridge and sides of the nose*, materially altering the appearance of the face. This stage of the disease is frequently associated with gummata elsewhere, either of the skin or mucous membranes.

The pharynx, the arches of the palate, the velum palati, and the mucous membrane of the hard palate are, during the *early* period of syphilis, the seat of *mucous patches*, as well as of an erythema coincident with a similar affection of the skin. Besides these symptoms later on in the disease, *ulcerations*, at first *superficial*, afterward *deep*, occur, which are serious according to their extent and depth; but the most important lesion which can attack these regions is a *gummatous infiltration*. This is *grave* in a twofold sense: first, from the impediment to respiration which the swelling

gives rise to, and secondly, from the after-effects which follow cicatrization of the ulcer. The first sign of this trouble is a feeling of *fulness in the throat*, with some *embarrassment in breathing*, due to the sometimes *enormous swelling* of the tissues of the part. This may be *unilateral or bilateral;* when the latter, the impediment to respiration is very marked, and may necessitate a resort to tracheotomy to relieve the urgent want of breath. This *swelling goes on*, unless checked by treatment, *to ulceration;* and the resulting *sore is deep*, with *undermined edges* and a *copious discharge* of gummous matter and pus. If the *velum palati* be the seat of the lesion, *perforation* and *absolute destruction* of this septum may *result*, throwing the oral and posterior nasal cavities into one. When *ulceration of the pharynx* is present at the same time, the cicatrization which ensues produces a *partial stenosis* of the upper portion of the throat. One result sometimes occurs, of which I have shown you two examples, and it is this: when the soft palate is only *partially destroyed*, what remains becomes *adherent to* the posterior pharyngeal wall, producing *occlusion* of the entrance to the *posterior nares*, which would be *complete but for cribriform openings in the artificial septum*, through which nasal respiration is imperfectly carried on. If the perforation of the velum is *limited in extent*, under proper treatment the opening may *contract* to a size only sufficient to admit a very fine probe; but my experience has taught me that *very rarely indeed does the opening entirely close up*. However, under favorable circumstances the hole left behind is *so small* as *not* to give rise to *trouble*, nor to allow *regurgitation* of solids and liquids, such as obtains while the opening is large.

When the *trachea* and *vocal cords* are affected, the symptoms which follow are *grave* and *alarming; phonation* above

a hoarse whisper is *prevented;* the *tracheal rings* are often *necrosed and thrown off;* and *death from suffocation may result from edema and ulceration of the glottis.*

The esophagus is also invaded, usually in connection with syphilis of the larynx and trachea, either from an *extension of the ulceration* or else from *gummatous infiltration* of the tube itself. The *stricture* of the esophagus, which results after cicatrization of the syphilitic ulceration, is a *very grave* complication, and frequently leads to a *fatal* termination from *exhaustion, due to inanition,* as solid food can not be taken in sufficient quantity to support life.

The tongue, as we have already seen, is the seat of *mucous patches* during the *early* stage of syphilis, and these symptoms are often quite *obstinate,* recurring again and again when all other manifestations have apparently vanished. From being slight and superficial the mucous patches may, during the progress of the disease, become *painful and ulcerated,* due in part to the disease and in part to friction against the teeth. In the *later* stages of syphilis the tongue may be attacked with a *gummatous infiltration,* which may be *diffuse or circumscribed.* In the former variety the entire substance of this organ becomes enormously *swollen and thickened;* the surface is *glazed,* and presents *deep and ulcerated fissures; mastication* is *interfered with,* and *speech* rendered *indistinct.* If the gummata are of the circumscribed form, one or more *nodules, hard* and *cartilaginous* to the touch, are felt deeply *embedded in the tissue* of the organ. These nodules are *painless,* and do *not* occasion the patient so much *inconvenience* as when the *lesion is diffuse.* Both types may pursue one of two courses: *resolution* or *ulceration.* If the first, the *thickening* and *ulceration* gradually *subside,* the tongue *regains* its former *pliancy,* mastication and *speech* are *recovered,* and the organ

shows no trace of its former trouble. When *ulceration* occurs, the *discharge* is apt to be *abundant and ill smelling;* the *ulcer deep* and *excavated*, surrounded with a thick margin of brawny *infiltration; mastication and speech imperfect*, while the *movements* of the tongue are materially *hindered.* This ulceration sometimes *lasts for months*, causes *great destruction* of the organ, and when it finally heals up, leaves a *puckered, depressed cicatrix which* may *deprive* the tongue of its accustomed *mobility.*

Passing to the *generative organs*, we find that the *testicles* are not infrequently attacked by syphilis in both the *early and late stages.* In the *early* period, the *epididymis* of one or both testes is *hard, thickened*, and *distended* to a sometimes enormous size. This enlargement is *not painful*, and only attracts attention from its *weight* and from the *dragging sensation* it produces upon the spermatic cord, causing a feeling of weakness in the back. This form of epididymitis *almost always disappears* under proper treatment, and does *not interfere* with the *functions* of the part.

This is *not the case in the advanced stage;* here a true *orchitis* is found involving the *entire organ.* The first thing to attract the patient's attention is a *sensation of weight* in the part, accompanied by a *dragging* upon the spermatic cord and a *pain* in the small of the back. Upon examination the entire testis is found *very much enlarged, hard as a stone*, and presenting upon its surface *raised projections or knobs.* There is *no redness*, and, strange to say, *no pain;* the organ can be very *freely handled* without exciting any uneasiness. This peculiarity is also *present in syphilitic epididymitis*, and in this respect it *differs* very much from the *gonorrheal* form of this disease, as I shall show you by and by. The shape is *piriform*, with the small end pointing toward the abdominal ring. If the disease pursues a

favorable course, the *hardness and infiltration subside*, and the organ *may return* to its former *size and usefulness;* but too often *atrophy* results, and the testis *all but disappears*, sometimes being no larger than a good-sized horse-bean. Of course, when this happens, it is neither ornamental nor useful.

The other course which the disease may pursue is *ulceration*. One or more of the *projections soften, break down*, and *discharge* a mixture of pus and the gummous material with which you are already familiar. The ulcer differs in no respect from broken-down gummata elsewhere, is *chronic*, sometimes lasting for months before it finally heals, and when it does, leaves behind it a *deep, depressed scar*, surrounded by *atrophied tissue*, which is not so extensive as where the infiltration has been more general.

Gummatous infiltration may also occur in the *ovaries;* and the only symptom present is *swelling, usually painless*, in the ovarian region, conjoined perhaps with some symptom of syphilis elsewhere.

The *cervix uteri* is not infrequently the seat of the *initial lesion* and of *mucous patches*, and these symptoms we have already studied in a previous chapter. But there is one point in this connection to which I invite attention: Both these lesions may be *seated within the cervix*, between the os internum and externum, showing nothing externally; a *slight discharge is present*, but no more than is common to nine women in ten. *Connection with women thus affected gives rise, in the male, to an attack of syphilis*, and, unless care is taken in forming the diagnosis, the error may arise of regarding the syphilis of the man as occurring from a gonorrhea or leucorrhea in the female.

This would be a mistake: the *disease* is *contracted* from the secretion of an *initial lesion or of a mucous patch;* in-

deed, accept this axiom: *Syphilis comes only from syphilis, and not from clap or a chancroid.* In the *advanced* stage of syphilis the neck and the body of the uterus are attacked by *gummata*, which present themselves in the shape of *diffused or circumscribed thickening* of the organ, which may follow the usual course of these lesions, viz.: *absorption*, or, as sometimes happens in the cervix, *deep and obstinate ulceration*, resembling in many respects an extensive chancroid of the part. We also find the same in the male, seated upon the *penis*, to which I have already alluded in a previous chapter. This *gumma*, besides occurring upon the *mucous membrane of the male genital organ*, is sometimes found at the junction of the penis with the scrotum—the *penoscrotal angle*—as a *hard, diffused, brawny swelling, unattended by pain or redness;* this *opens externally or internally*, and according as it does one or the other gives rise to certain symptoms. If the opening is *external*, the resulting ulcer is similar to the ulcerating gummata of other parts, and *heals up*, after a longer or shorter time, under appropriate treatment. If, on the other hand, the *urethra is perforated*, the gumma discharges itself through this canal, and gives rise to the question of *gonorrhœa with a peri-urethral abscess.* In the majority of cases you will save yourselves from falling into the error of regarding this lesion as a clap, by an observance of the following facts: *In gonorrhœa the discharge precedes the swelling*, which is *red* and *painful;* in *syphilis*, on the other hand, the *discharge follows the appearance of the enlargement, never precedes it*, and the swelling is *neither red nor painful.*

Another form of gumma of the male genital occurs, to wit: an *infiltration into the corpus spongiosum or into the corpora cavernosa.* This usually comes on in the *circumscribed* form, and is apparent as a *hard nodule, without*

redness or pain, deeply embedded in the tissue of the part, or it may occasionally present an *annular form* around the entire organ. It generally *passes off* under treatment, but during its continuance it gives rise to much inconvenience and to most curious *distortion* of the part. If only partial, it curves the penis during erection to one side or the other, according to the location of the gumma, resembling the symptom known in gonorrhea as chordee, and it interferes with sexual intercourse ; but if it assume the annular form, a most remarkable condition of affairs arises. During erection the penis, from the crura to the seat of the lesion, is turgid, and presents its usual appearance ; beyond that it is flaccid and hangs at right angles to the rest of the organ, looking like a flail. Of course, for sexual purposes it is entirely useless, and but for the name of the thing, the poor patient might as well have no penis at all.

The *alimentary canal and the viscera* do not escape any more than do other portions of the body. During the existence of the erythema a form of *icterus* has been described as due to syphilis, which yields to mercury, but it is not until the later phases of the disease that these *organs are attacked by gummata*, usually of the circumscribed variety. These lesions have been found in the *liver*, *lungs*, *heart*, *kidneys*, and *intestinal tract ;* but the most interesting of all the syphilitic manifestations of these parts is the gumma of the *rectum*. This begins in the *muscular* and *mucous coats* of the rectum, and, by its size, may decidedly *diminish the calibre* of the tube. The neoplasm ulcerates, producing *great pain*, attended with a *discharge* of purulent and gummous material, *tenesmus*, *diarrhea*, *and bloody stools*. Upon healing it leaves behind it a *stricture* of the rectum, which is more or less tight, according to the depth and extent of the ulceration, and is usually

attended with *obstinate constipation* from the mechanical obstruction to defecation. The stricture is *extremely obstinate and rebellious to* treatment, owing to its continual irritation by fecal matter, and necessitates a resort to the use of rectal bougies to keep the passage dilated, and even surgical interference, such as a division of the stricture, or even in extreme cases to colotomy, to prevent the rectum from being occluded and the patient's life jeopardized.

This lesion of syphilis also is of interest in its bearing upon the *chancroid*. Perhaps you remember that in the chapter upon chancroid I spoke of the *stricture of the rectum* resulting from *anal chancroids* in the female. The after-effects differ in no whit from the same disease due to syphilis, and may also require subsequent surgical treatment for its relief.

Syphilis may also attack the *arteries*, from the *aorta* to the smallest *capillary;* this usually occurs in the *later* stages of the disease, and is characterized by a *cellular infiltration* of the mucous and muscular coats of the vessels, followed by *fatty degeneration*. If this lesion occurs in the *aorta*, it can give rise to an *aneurism*, which may possibly be detected during life. If in the *brain*, the *dilatation of the arteries* is almost *impossible* of discovery during life, and the symptoms which this lesion causes are similar to those which ensue from compression of the brain from any tumor. *Treatment* in these cases is probably of *little avail*, as *no medication* can *restore* the *destruction* of tissue which takes place in consequence of the degeneration.

In the *brain* the syphilitic manifestations usually occur during the *late* stages, due either to a *gummatous infiltration into* the substance of *the brain*, which probably has its *starting*-point from the *meninges;* sometimes, also, from *disease of the arteries*, but the most common variety is that

due to *gummatous periostitis*, which is an infiltration of the periosteal lining of the inside of the *skull* or of the periosteum of the *sphenoid* or *ethmoid* bones. These, by *compression*, produce *disturbances of the nerve centres*, which are attended with *paralysis*, of which I shall speak again when we come to treat of syphilis of the *nervous system and of bone*.

CHAPTER VII.

SYPHILIS OF THE NERVOUS SYSTEM AND OF BONE.

Thus far we have studied the syphilitic lesions which occur in and upon the body, with the exception of those which affect the nervous and osseous systems, and these we shall discuss in this chapter.

It is generally believed that nervous symptoms belong exclusively to the late, or so-called tertiary, form of syphilis, *but this is a mistake; lesions* of the *nervous system are found during the early period*, being sometimes coincident with as early a manifestation as erythema, but they *differ from late nerve syphilis in being evanescent, more amenable to treatment*, and in *not leaving* any *permanent impairment of* the health behind.

One of the most common symptoms of the early stage is the *hemicrania, or headache* confined to one lateral half of the head, and to which, when speaking of the syphilides of the skin, I called your attention. This headache has one peculiarity, especially well marked in the early period of syphilis: *it only appears at night;* during the daytime the patient is free from it, but on the approach of night it commences, *gradually at first, increasing* in intensity when the patient goes to bed, and *remaining until morning*, when it *disappears.* It usually affects *one lateral half* of the head, although it may shift its position to the frontal and occipital portions; but this is not common. As the syphilis

advances this *nocturnal* character *changes;* it no *longer disappears* throughout the *day*, although it is *less severe* in the *forenoon.* Some time in the *afternoon* it begins to *increase*, and at *night* becomes so *intense* as to deprive the patient of rest and sleep. The more *severe* and advanced the type of the *syphilis* is, the *earlier* in the *afternoon* does this *pain* commence.

Associated with this hemicrania are *epileptiform* seizures of a *light* and transient character, which, so far as the patients are concerned, *pass unnoticed*, for the simple reason that they are ignorant of the attack. Sometimes an attack occurs in public, when, of course, it becomes known, but at other times the only thing to excite suspicion toward such a manifestation is a bitten tongue or lips or a bruised forehead. The fact that the patient finds himself on the floor does not appear to attract his attention. He picks himself up as though nothing had happened; indeed, the mental faculties after an attack of this kind seem to be wonderfully blunted, and the patient for some hours afterward is in a condition of mental hebetude entirely foreign to his usual condition.

As the syphilis advances these attacks become *more frequent and severe*, and unless checked by treatment *affect the patient's mind*, leading to an attack of downright *mania*, or, what is more commonly the case, to *melancholia* and *idiocy.* But one point is deserving of notice—the rapid and beneficial effect that accrues in cases which at first look almost hopeless, under a proper and thorough treatment.

Associated with these cases of syphilitic epilepsy—although not necessarily so—are *paraplegia* and *hemiplegia.* This latter is usually due to *compression* of the *brain* by a *gummatous* infiltration of the *periosteal lining* of the cranial

cavity, or from the *meninges* of the *brain* itself, and is attended with certain symptoms which tend to distinguish it from other manifestations not due to syphilis. First and foremost of these stands the *suddenness* with which the attack comes on. The patient, to use a slang phrase, is "bowled over" without premonition. Occasionally he will confess to having *suffered* for a *short time* before the attack with *severe cranial pain*, but just as often as not there are *no antecedent symptoms:* the patient becomes *suddenly paralyzed.* The second noteworthy point is that *very rarely* indeed is there any *loss of consciousness;* the patient *retains his senses* perfectly, has *neither stertor nor coma:* he simply finds he *can not move certain portions of his body.* If he be attacked with *hemiplegia*, one lateral half of his body is useless—if with *paraplegia*, the lower half; and this latter form is connected with obstinate *constipation* and with *retention of urine*, from the inability of the rectum and bladder to empty themselves of their contents. Paraplegia denotes some *affection of the spinal cord, low down*, as a rule, and due to *compression* either from the pressure of a *gumma* in the *periosteum* of the *vertebræ* or in the *sheath of the cord* itself; while *hemiplegia* is caused by some *brain-lesion.*

Age plays a part also in making up your diagnosis; and you will remember that such lesions as we are now considering, occurring in an *adult say between the ages of twenty and forty-five*, of course, excluding accidents, should *always excite a suspicion of syphilis;* for, apart from injuries and the pox, these diseases are *rare* between the ages I have given you.

Let me supply you with a short table of the differential signs between syphilitic and nonsyphilitic paralysis:

Syphilitic Paralysis.	Nonsyphilitic Paralysis.
Sudden, unattended by premonitory symptoms.	Gradual, and attended by prodromata, except in apoplexy, when the
Consciousness not lost.	Patient becomes unconscious.
Breathing calm, no stertor.	Breathing stertorous.
Pulse regular and natural.	Pulse full, bounding, and irregular.
Most common between the ages of twenty and forty-five.	Usual in advanced age.

This tabular form will, I hope, serve to fix these points in your mind.

Syphilis, of all diseases, seems fond of playing curious pranks, and the nervous system affords it ample opportunities. Besides the varieties of *paralysis* which we have just gone over there are localized forms that attack *certain muscles or sets of muscles.* The most common of these is *paralysis* of the *muscles* supplied by the *third* pair of nerves —the *motores oculorum communes.* In this affection the *eyeball* is *partially* or *completely* covered by the lid, *which can not be raised*, and the *eyeball* is *incapable* of any *movements except those afforded by the external rectus and the superior oblique muscles*, which you know are supplied by the *fourth* and *sixth* pairs of nerves. This produces *disturbance of sight*, with *diplopia*, or double vision, from inability to focus the two eyes simultaneously upon the same object. It also *affects the iris*, producing *mydriasis*, or dilatation of the pupil, which is sometimes *extreme.*

Next in frequency come the *affections* of the *fifth* and *seventh* pairs, and here we find a complete *distortion of the muscles of the face supplied by these nerves:* the face is pulled over to the *nonparalyzed* side, because there are no antagonistic muscles in action to keep the features straight. The *tongue*, when protruded, is *dragged over* in the same manner. The patient *can not inflate his cheeks, nor* can he

masticate his food, as the buccinator and masseter muscles are both incapacitated; his food collects, during eating, between his cheeks and jaws, and can not be dislodged save with his fingers, and the *saliva dribbles* out of the corners of his mouth. He presents, in short, a ridiculous and at the same time a pitiable appearance. Besides this, he can not *close the eyelid* of the affected side, and as for *winking* with it, that is *out of the question;* the *ala nasi* of that side does *not expand* in respiration; he *can not wrinkle the skin of his forehead, nor* can he *frown* but with *one-half of his face*, and he may also be made *deaf on* the diseased side. Yet with all this trouble, if the fifth pair be not attacked, there is *no loss of sensation*, for the seventh, as you know, is the motor, while the fifth is the sensory, nerve of the face. Whether all or only some of these symptoms occur depends upon the site of the lesion: *if it be anterior to the emergence of the nerve*, through the stylomastoid foramen, *all are present; if posterior*, then *only* those *muscles supplied by the diseased portions of the nerve* are affected.

If the *fourth pair* is attacked, then the *obliquus superior* is the only muscle at fault, and the patient *can not turn the eyeball upward and outward*, and if the *sixth pair* is injured, the *eye can not be everted.*

It is so *rare* to find these forms of localized paralysis *apart from syphilis* that I do not believe you will ever be far wrong in ascribing such lesions to this disease; and in cases where no history can be obtained, the importance of a knowledge of this fact will be at once apparent to you.

Let me, then, formulate this into an axiom for you:

Paralyses of single muscles, or sets of muscles, are nine times in ten syphilitic.

These affections of the nerves are nearly always unilat-

eral, and I do *not* know that they occur *more frequently upon one side* than the other.

Among the *spinal nerves*, the one most commonly attacked is the *great sciatic*, which springs from the sacral plexus. The principal symptom present is *pain* along the course of the nerve, and this pain is *not acute, but dull and persistent*, and is liable to *exacerbations at night*. None of the ordinary remedies used for sciatica do more than mitigate the severity of the pain; but if the surgeon gets upon the right track and prescribes the iodid of potassium, either alone or, better still, combined with mercury, the result is oftentimes as rapid as it is gratifying: the pain vanishes as if by magic.

The lesion which occurs in this variety of nervous syphilis is *due* either to a *deposit of gummatous material within the nerve sheath* itself, to *pressure upon the nerve* during its passage through some bony canal or foramen, *by gummata of the bone*, or else to *pressure* upon the *brain or nerve* substance by a gummatous *periostitis*. The *prognosis depends much upon the duration* of the disease: if the *syphilis* be young,—*i. e.*, in its *early stage*,—it is *favorable;* if the *contrary*, the *prognosis is doubtful*, although even here hope should not be abandoned; but if *atrophy* of the nerve has resulted from pressure of the gumma, then *good-by to all chance of recovery*.

As regards the *bones*, the lesions here are divisible into those which occur during the *early* and those which occur during the *late* stages. To the former belong the *osteocopic pains*, which produce *no organic changes* in the bones themselves *nor* in their investing sheath, the *periosteum*, which are *nocturnal* in their character, and are at the worst merely *annoying*. As the *syphilis progresses* these *pains lose a great deal of their nocturnal character;* they are more *per-*

sistent, but still, with all this, they are *not dangerous*. These pains are usually *confined to the shafts* of the *long bones*, particularly those which are just beneath the skin, such as the *tibia* and the *ulna ;* although they sometimes affect the *flat bones*—as, for example, the *cranial.*

It is when the *gummatous* stage arrives that trouble of a *serious* nature arises. The first stage is where intense localized *pain* occurs in some bone, either flat or long, it makes no difference, which is speedily followed by a *swelling* at this spot, oftentimes exquisitely *tender*, but usually *without any redness* of the part. This *swelling*, *if checked* at the outset, *disappears* slowly, nearly always *leaving some elevation and thickening of the periosteum* behind it. If *left to itself or uncontrolled* by treatment, the *swelling increases* in size and extent, gradually *softens*, and *opens* in one or more places to give exit to pus and the gummous material which is common to all the lesions of the late stage. If this opening be probed, *dead bone* is almost always found at the bottom, and this bone imparts to the touch a sensation of irregularity on the surface as though it were worm-eaten. And here let me impress upon your minds one very important maxim : NEVER, *never under any circumstances*, *open a gummous enlargement of bone or gland*, *no matter how soft it gets !* I have seen gummous infiltrations of this kind become absorbed even when the skin covering them was as thin as fine tissue-paper and they looked as though they must break down. I say to you again, *never open a gumma*, for by so doing you deprive yourself of the only chance of preventing necrosis of the bone ; and if this must supervene, do not give it a helping hand by stupid interference on your part.

But we will suppose *necrosis* already present ; what happens then ? The tumor keeps on discharging, and in

the discharge fragments of crumbling bone are found. Let me say that the *extent of the necrosis is usually confined to the size of the periosteal swelling*, so that when death of the bone has once set in, you can have some idea of its limit. The *bone crumbles away little by little*, presenting *nothing* in the shape of a firm *sequestrum* for you to extract; indeed, it seldom has the line of separation from sound bone which dead bone of nonsyphilitic origin shows, but it simply chips off in small flakes and pieces until it has reached the limits of the diseased portion, when, if treatment has been properly pursued, the necrosis stops, granulations spring up from the bottom and sides of the cavity, cicatrization takes place, and a *more or less depressed cicatrix* is left behind to mark the loss of bone.

When this necrosis occurs in the external osseous framework, the results, although bad, are seldom serious; but when it occurs in the *internal bones*, such as the *palatine*, *nasal and hyoid*, or in the *rings* of the *trachea*,—for *cartilage* disappears as well as bone,—then *serious mischief* follows, not confined alone to the shocking *disfigurement* which occurs, but it may even *endanger* the patient's *life*. The same process is repeated here as in the long bones; the gummous *deposit takes place into and beneath the periosteum*, stripping the latter from the bone; *necrosis and exfoliation* of the bone follow, and when these occur in the palatine and nasal bones, the *oral and nasal cavities are thrown into one*, and the disease may go so far as to attack the *base of the skull*, causing *coma*, low *delirium*, and *death*. These are the cases so frequently associated with *syphilitic cachexia;* and when *that stage is reached, hope is about at an end*. You may perhaps recall such a case which I showed you a short time ago, where the hard and the soft palate had both disappeared, the nasal bones had gone, causing

the nose to flatten out upon the face; where necrosis of the vertebræ at the posterior pharyngeal wall was present, and a sinus led from the inferior orbital angle to a mass of dead bone in the lower plate of the orbit. I called your attention to the condition of the man, and to his worn-out, more-dead-than-alive look, and told you then his race was nearly run. He died a week later, in spite of treatment, gradually sinking into a low form of delirium until death released him from his sufferings.

These are the cases, happily rare, which once in a while present themselves as if to show what syphilis is capable of doing, and there is one more form about which I wish to speak to you before closing this chapter. This is where *syphilis* attacks the *rings of* the *trachea*, and where, from *pressure* of the gumma upon the *glottis* and *trachea*, *death* by *suffocation* threatens to supervene, rendering tracheotomy necessary to save life. Under active and persistent treatment the neoplasm *may disappear*, but too often the *cartilage exfoliates*, the *rings disappear*, and upon cicatrization a *partial stenosis* of the trachea occurs; and this *impediment* to *respiration*, combined with the *exhaustion* so often found in these cases, rarely fails sooner or later to *end the patient's life*.

The *tendons* also participate in this disease, and are usually attacked in the *late* stages by a *gummous deposit in their sheaths*. While this lasts it may produce curious deformities: as, for example, when it occurs in the tendo Achillis, it produces a talipes equinus, and if in the tendons of the flexor communis digitorum, it imparts to the hand a peculiar claw-like look. Of course, such a hand is useless.

The symptoms are those of gummata elsewhere: *swelling and thickening of the parts, unattended by much pain*. They usually *yield to treatment*, but sometimes *permanent*

contraction ensues, rendering tenotomy necessary in order to restore the parts to some degree of usefulness.

We have now gone over the principal points in the history and course of syphilis, and I trust that the pictures I have sketched for you in these chapters will enable you to recognize all the cases which you will be likely to see in every-day practice. The next chapter will be devoted to the treatment of syphilis—a very interesting subject, and to the importance of which I think you are keenly alive.

CHAPTER VIII.

TREATMENT OF SYPHILIS.

As regards the treatment of syphilis, allow me to say at the outset that to discuss, *pro* or *con.*, the various methods which have been in vogue since syphilis has been recognized as a separate disease would not come within the scope of this book; and what I therefore propose is to give you the kind of treatment which has best stood the test of time, and which, at the present day, is the most approved. With this object in view I shall divide my topic into the two principal groups of internal and external treatment, and give you, as I go along, the appropriate prescriptions for each.

In the first place, as regards the treatment of the *initial lesion.* I have already, when previously speaking of this form of syphilis, given you the plan most deserving of adoption, and will therefore do no more than refresh your memory upon some of the principal points to which I then called your attention.

In the first place, *do not cauterize* the initial lesion *unless it be attacked by phagedena*, when such a proceeding may be admissible; but when it is *uncomplicated*, cauterizing *does no good;* on the contrary, it *does harm.* In the second place, *do not treat it by the internal use of mercury*, for the reason that this metal retards the appearance of the early syphilides, and leaves the surgeon in doubt when to expect subsequent lesions and what to look for, and also because its use sometimes prevents the surgeon from deciding with

certainty upon the nature of doubtful ulcers; and when, the period of probation passing by and no symptoms appearing, he assures his patient that nothing further is to be expected, his promises of future indemnity are apt to be rudely dispelled by the appearance of the long-delayed syphilides some months later. In addition to this, *waiting* until the syphilides appear *does not injure the patient's chances of ultimate recovery.* Treat the initial lesion, then, by the rules laid down in chapter III.

When the *syphilides appear*, however, and the time for internal medication arrives, what shall we do? In the early stages of syphilis, you remember, the symptoms are multiple and polymorphous, and when the six weeks of incubation have elapsed, your patient blazes out with an erythema of skin and mucous membranes, papules in the scalp, mucous patches of the tongue and throat, alopecia, hemicrania, and universal induration of the glands of the body. Preceding these symptoms there probably has been some febrile excitement, which disappears as the eruption shows itself. *Now is the time for the use of mercury;* and let me tell you that, of all the drugs at your command for the treatment of syphilis, there is *not one that will take its place.* Dismiss from your minds the senseless abuse of mercury which some writers indulge in, and remember that the surgeon *who neglects to use* this mineral in treating syphilis *does injustice* both to his patient and to himself; for although some mild cases of syphilis may and do recover without its use, the risk run is greater than any prudent surgeon should incur. Know what to expect from your drug, *use it properly*, and depend upon it that those two points well carried out, the *mercury will do no harm* either in the present or the future; on the contrary, *it will do good.*

In the early stages of syphilis—*i. e.*, through the period of erythemata and papulæ—a preparation I frequently use is the following :

℞. Mass. hydrargyri, ... gr. ij
Ferri sulphatis exsiccat., ... gr. j.
Fiat pil. No. i.
M.
SIG.—Three to six daily.

I usually begin with one three times daily after meals, gradually increasing the number to two three times daily as occasion requires.

The *bichlorid* of mercury is the old and time-honored preparation which has been usually given. I very seldom use it, because in my hands it has been apt to produce its toxical qualities—griping of the bowels, diarrhea, and sponginess of the gums—just when it is most needed. Still, in some cases it answers well enough, and when used, it had better be given in pill form, thus :

℞. Hydrargyri bichloridi, ... gr. $\frac{1}{50}$–$\frac{1}{10}$
Saponis, ... q. s.
Ut fiat pil. No. i.
SIG.—One thrice daily after meals.

In order to check its action upon the bowels, from $\frac{1}{5}$ to $\frac{1}{4}$ grain of opium may be added to each pill.

Another form is the *protiodid of mercury pill :*

℞. Hydrargyri protiodid., ... gr. $\frac{1}{5}$–$\frac{1}{2}$
Ext. gentianæ, ... q. s.
Ut fiat pil. No. i.
SIG.—One thrice daily after meals.

But of all these preparations of mercury, as already stated I much prefer the one first given, the *blue mass and*

iron pill, for its efficacy and for the tolerance which the system shows to it. The addition of the iron is of value not only in increasing the action of the mercury, but for its own effect as a tonic.

Now come the questions: *how long* shall the *mercury be continued? how much* shall be given? and *under what circumstances shall it be increased, diminished, or stopped altogether?* To the *first two questions* I reply, *until the symptoms disappear or the drug produces toxical symptoms;* by that I mean disturbance of the digestion, diarrhea, sponginess of the gums, and salivation. With regard to this last point, I wish to impress upon your minds the fact that its occurrence is a *hindrance, not a benefit, to treatment*, inasmuch as, when present, the *mercurial* has to be *stopped* and so much time wasted. *Avoid then, carefully, any approach to salivation;* but should such an accident occur, *suspend all antisyphilitic treatment* and place your patient upon the following prescription:

℞. Potassæ chlorat., ... ʒj
Aquæ, ... ℥vj.
M.
Sig.—Locally as a mouth-wash, and internally in teaspoonful doses four or five times daily.

This checks the sponginess of the gums, the fetor of the breath, and the flow of the saliva, which are the three symptoms attending this form of mercurial intoxication.

Two other remedies have been used, both of which may be of service. They are belladonna, or its alkaloid, atropin, and dilute nitric acid. They are usually given as follows:

℞. Tinct. belladonnæ, ... ʒiv
Aquæ, ... ℥ij.
M.
Sig.—Teaspoonful four times daily in water.

If you use atropin instead of belladonna, give the following:

℞. Atropiæ sulph., ... gr. $\frac{1}{10}$
Alcoholis, ... ʒss
Aquæ, ... q. s. ad ʒ ij.
M.
Sig.—Teaspoonful three or four times daily.

With preparations of belladonna use the solution of the chlorate of potash given above as a wash. The dilute nitric acid you will oftentimes find of benefit in those cases where the sponginess of the gums is so excessive as to threaten the dropping-out of the teeth, and should be given both internally and locally:

℞. Acid. nit. dil., ... ʒiv
Aquæ, ... ʒij.
M.
Sig.—Teaspoonful four times daily in water; also use locally.

If, however, you *give mercury prudently and properly*, carefully watching your patient, *no such accident* as I have just detailed *need occur;* and, indeed, you will oftentimes be surprised to see how tolerant the system is in syphilis of even large doses of this mineral. I have often given in these early stages of the disease ten to twelve, and even fourteen, grains of blue mass a day for several weeks at a time without producing any systemic disturbance whatever; but it was in those cases where the attack was severe, and I was careful to keep the patient under rigid observation. In average cases six to eight grains daily will be sufficient to dispel the symptoms.

As to the circumstances which shall impel us to *increase, diminish, or altogether stop the mercurial*, they may be disposed of in a few words. If the *symptoms be obstinate* and *slow to disappear*, and if, at the same time, the patient

stands his treatment well, the *drug* may be gradually *increased* until the *symptoms give way* or the *patient* begins to *show a slight red line at the edges of the gums.* Should this latter occur before the disappearance of the syphilitic lesions, the mercury *must be suspended* for a few days, and when it is *recommenced*, a *different preparation* may be given from the one formerly used. *It is seldom, however, that the earlier manifestations resist a determined attack with this mineral.*

As soon as the *symptoms* have *disappeared* so as to leave no staining of the skin or other trace of their presence behind them, *it is well to discontinue the use of the mercurial*, for the following reasons : first, to *avoid* too great a *tolerance* of the system to the *drug ;* and, secondly, to enable us to *determine whether other lesions are about to follow* or not. Upon this last point let me dilate a little, even at the risk of seeming tedious, in order to avoid misunderstanding upon your part. We will take, for example, one of the many cases which I have already shown you from the wards—say this one, of a papular syphilide. As soon as the manifestations have disappeared from the skin, leaving no trace behind them, the mercurial treatment will be discontinued and the man placed upon tonics. Now, if you will remember what I have told you when we were speaking of the syphilides of the skin, you will recollect that there is a period of incubation, shorter or longer as the case may be, between the appearance of the various manifestations, and if you continue your treatment after the first train of symptoms has disappeared, you delay the occurrence of the subsequent ones. But suppose you intermit your treatment instead of continuing it, and the period of probation passes without the expected symptoms appearing—this shows you that the disease is losing its strength (for the amount

of mercury you have already given for previous symptoms would not prevent the subsequent manifestations if the syphilis were still very active), and you would be justified in supposing that the disease was on the wane, and the longer the time which elapses between the various stages, the more hopeful the prognosis. *But bear in mind that as long as any symptoms last, no matter how slight, so long must the treatment be continued; and also that it must be renewed, if previously discontinued, should fresh manifestations recur.*

This touches upon *internal* treatment only; but occasionally some lesions require a *topical* as well as a constitutional medication. Of these, *mucous patches* head the list. The *early lesions* of the *skin*, of course, require *no local* applications; it is only where the erythematous blotches and papules invade skin and mucous membrane together—as, for example, at the angles of the mouth and eyelids, or in other portions of the body which combine heat and moisture, such as the pourtour of the anus, the labia vulvæ, the scrotum and penis, the toes, the buttocks, and armpits—that topical treatment becomes requisite. The two best remedies for these lesions are *powdered calomel* and the application of the *nitrate of silver* either in the solid stick or as a saturated solution. But do not forget the most important point of all: *keep the parts dry and clean*, else your treatment will be of little avail.

This question of *cleanliness* is particularly important if the mucous patches are seated upon the lips or tongue or in the throat, as a *nonobservance* of this rule *tends* not only to the *continuance* of the mucous patches, but also to their *increase* in both *size and intensity*. Hence it is well to advise the patient to brush the teeth several times during the day, and to gargle and rinse the mouth with warm water to which

some mild antiseptic, such as listerine or borolyptol, may be added.

When the mucous patches are seated in the *throat*, or on the *lips*, *tongue*, and *lining membrane of the cheeks*, the application of the *nitrate of silver* is generally the most efficacious; and when the lesions are seated low down in the *pharynx*, a *spray* of a weak solution of *nitrate of silver* (five grains to one ounce of water) will be of advantage.

As the later stages of the disease are reached the treatment undergoes certain modifications; the one best calculated to promote a cure is that known as the *mixed treatment*. This consists of *mercury and* the *iodid of potassium*, used either *separately* or *in combination*, and is given in those stages of the disease which are *ulcerative* in their character. I much prefer giving the *two separately*, for facility of exhibition and because either one can be increased without increasing the other. The two preparations of mercury most in use are the *protiodid* (internally) and the ordinary *mercurial ointment*, or *oleate of mercury*, as an inunction to the skin. If the internal use of the drug be decided upon, the protiodid should be given once daily, in from a half to one grain, and the iodid of potassium in two daily doses, thus:

℞. Hydrarg. protiod., ... gr. ss–j
Ext. gentianæ, ... q. s.
Ut fiat pil. No. i.
Sig.—Once daily before mid-day meal.

And—

℞. Kali iodidi, ... ʒij
Tinct. cinchonæ comp.,
Tinct. gentianæ, ... āā ʒss
Aquæ, ... q. s. ad ʒij.
M.
Sig.—Teaspoonful well diluted with water twice daily—morning and evening—before meals.

A very good way of giving the *iodid* is to make it up in a *saturated solution*, and, as the iodid is very soluble in water, an aqueous solution will represent very nearly a grain of the salt to each minim of the solution, and by giving it in this saturated form, the amount of iodid may be increased or diminished at will, without making each dose too bulky when large amounts of the salt are to be given. It is well to remember, however, that the *iodid must be well diluted* with water, milk, or with some mineral water, such as Vichy or the carbonated waters, first, because it is *easier of absorption*, and, second, because it has *less tendency to irritate* or disturb the stomach if given largely diluted.

Should you elect to combine the mercurial and the iodid of potassium in one dose, you will find the following prescription a good one :

℞. Hydrarg. bichlor., ... gr. ¼–j.

Or—

℞. Hydrarg. biniodidi, ... gr. ¼–j
Kali iodidi, ... ʒ ij
Tinct. gentianæ,
Aquæ, ... āā ʒj.

M.

Sig.—Teaspoonful well diluted with water twice daily—morning and evening—before meals.

If possible, these medicines should be given before eating, as the absorption is quicker and the effect more direct when the drugs are given on an empty stomach ; but sometimes you will have to modify this rule and give the remedies after eating, because both the mercury and the iodid of potassium sometimes produce stomachic and intestinal disturbances if given upon an empty stomach.

But we will suppose you *do not wish to give mercury internally* by the mouth, but prefer some other mode of ad-

ministration. What methods are open to you? There are three: first, by *inunction—i. e.*, friction on the skin—of some oleaginous or fatty preparation containing mercury; second, by *mercurial vapor baths;* and third, by *subcutaneous injections.*

The first of these methods, *by inunction*, although a most excellent way of getting a *rapid* and at the same time *thorough effect* of mercury, is *open to* the *serious objection of uncleanliness*, and with justice, as the old-fashioned way of smearing the ointment over the entire body in divided doses kept the body and linen in a constant state of greasiness and dirt. This, in recent times, has been much improved upon by the use of the *oleate of mercury;* but which, though better than the unguentum hydrargyri of the pharmacopœia, is repugnant to many persons who are careful about the cleanliness of their persons. To obviate this, and to reduce the dirty feeling which any greasy substances impart to the skin, I have for some time past *used the oleate of mercury, 10 per cent. to 20 per cent. strength, on the soles of the feet* to the exclusion of the ordinary mercurial ointment, in the following manner:

The patient is directed to bathe the feet thoroughly in hot water the night on which the first inunction is made, when half a drachm of the 20 per cent. oleate of mercury is rubbed briskly into the sole of the right foot; this is repeated the next night on the left foot, and so each night, the right or left foot alternately is anointed with half a drachm of the preparation. This may be increased to a drachm or more if the patient stands the mercurial well. The same stockings, which should be of wool or some tolerably thick material, are worn continuously, night and day, for one week, at the expiration of which time the feet may be thoroughly cleansed with hot water and soap, and an in-

termission of three or four days elapse before renewing this same process for a similar length of time. *The iodid of potassium should be kept up during the period of inunction as well as during the intermission, in three daily doses.*

The *advantage* of this method is twofold: first, as regards *cleanliness;* second, as to *efficacy.* Instead of smearing the body all over and keeping it continually in a dirty state, this disagreeable feature of the treatment is confined to the feet, and *the repeated dose is in a process of continual absorption*, inasmuch as *every movement* that the patient makes *in walking serves to rub the ointment into the skin of the feet*, and absorption takes place notwithstanding the thickness of the cuticle in this part.

The second method, by the *vapor bath*, is *equally efficacious*, and *not open to* the same *objections* that the inunction process is. The patient may be sent to one of the regular establishments where these baths are given, or, if preferred, they may be given in the patient's own house. The portable vapor bath in its simplest form consists of a long, sleeveless flannel night-shirt, made to reach to the patient's feet, an india-rubber mackintosh of the same pattern as the flannel shirt, both of which should close tightly round the neck, leaving the head exposed, and a round stool for the patient to sit upon. The flannel shirt and the mackintosh should be made large enough to allow the patient to sit upon the stool inside of both. The vapor bath is a cylinder of tin or of wire gauze, enclosing within it an alcohol lamp. The upper portion of the cylinder holds a plate, which is hollowed out in the shape of a gutter at its outer circumference; the middle portion is elevated above this gutter, and contains a shallow depression or cup. The patient, being stripped and dressed in his shirt and mackintosh, is seated upon the stool, which is

included within his bath clothing, and the whole is carefully tucked in at the bottom, to prevent the escape of any vapor. The bath is prepared in the following manner: water is poured into the gutter of the plate at the upper portion of the cylinder, and the mercurial is placed on the shallow cup at the apex, in the middle; the lamp is then lighted, and the whole apparatus placed under the stool upon which the patient is sitting. The lamp is so arranged that the flame striking against the plate at the top causes evaporation of the water, producing a steam vapor bath, and the heat throws the patient into a profuse perspiration. As soon as the water has evaporated the mercury, in its turn, is volatilized and readily absorbed by the skin. As soon as all the mercury has disappeared the light is put out, and the patient is left inside his waterproof clothing until the body begins to cool slightly; he should then be taken from his stool, the waterproof cloak removed while the flannel shirt is retained, and he should be covered up with blankets until all perspiration has ceased and the body has become cool and tolerably dry, when he may put his clothes on again. This is supposing the bath to be given in the day, but bedtime is the best period of administration, when the patient may go to bed at once and remain there.

A good substitute for the lamp is an ordinary chafing-dish, the tin or zinc plate of which may be replaced by an iron saucer to contain the water, which, upon evaporation of the water, becomes thoroughly heated. When this is accomplished the mercury may be placed upon the still hot plate, producing the same result which is attained by the regular apparatus.

An improved modification of the above apparatus is the cabinet vapor bath, of which several varieties are on the

market. The modification consists in substituting a more or less air-tight box for the flannel night-shirt; otherwise the two instruments are similar. The principle is the same in both.

The preparation of mercury used is either calomel or the black oxid, the former being given in twenty to forty grains to each bath, and the latter in thirty to sixty.

The time required for the bath varies from thirty to forty minutes, and, barring the length of time it takes, is one of the nicest and cleanest ways of introducing mercury into the system, besides being of easy application.

The method by *subcutaneous injection* is very *little used in private practice*, owing to the *trouble of administration* and the *pain* attendant upon it. It is done by injecting the solution containing mercury beneath the skin, which, *besides being painful*, is frequently followed by *abscesses at the point of injection.* Calomel is the agent usually selected, and is given in doses varying from $\frac{1}{10}$ to $\frac{1}{2}$ a grain at each injection.

The *local* treatment of the *ulcerative syphilides*, although not so important as the constitutional treatment, is decidedly *necessary and useful.* Those of the skin, if the crust has been removed, should be dressed with mercurial ointment spread upon a cloth. It is *better, however, to leave the crust on, if it be firmly adherent, as it makes the best protection* for the part, and the *underlying ulcer heals up* under the administration of the mercury and iodid of potassium. The *ulcerations* occurring in the *throat* and *mouth* should be treated with *nitrate of silver* (40 grains to one fluidounce of water), *carbolic acid* (crystals, one or two grains to one ounce of water), or *nitric acid* (nitric acid, c. p., five minims to one ounce of water). If the lesions are *deeply seated* in the *throat* or in the *posterior nasal cavity*, they may be reached by a *spray* of the above solutions.

In *necrosis* of the *nasal and palatine bones* the parts should be thoroughly *washed out* with warm water, injected through a posterior nasal syringe, and afterward *sprayed* with the solutions given above, and patience exercised until the *dead bone comes away under internal treatment.*

I now wish to say a few words to you with regard to the *administration* of your remedies, because upon the *thoroughness* with which you use them will the *advantage of your treatment largely depend.* Without at all advising you to be *rash*, I wish you to be *bold*, and to remember that in face of such a disease as syphilis *you can not afford to trifle.* When using mercury, *watch* your patient *carefully*, be on the *lookout for toxical symptoms, but do not hesitate*, if occasion requires, *to push your medicines to the utmost limit which the patient will tolerate.* I believe more harm is done than is generally known, in many cases, because the surgeon is afraid to use mercury in sufficient quantities to control the disease, and in syphilis, you must recollect, *mercury, instead of acting as a depressant*, seems to *possess the properties of a tonic*—indeed, it is the *sheet-anchor in treatment.* The same is true of the *iodid of potassium*, so far as regards its *tonic* property : of *little, if any, value* in the *earlier stages* of syphilis, in the *later* (*ulcerative*) periods it is *invaluable, but only as an adjuvant ; it never will take the place of mercury.* Give it at the commencement in ten-grain doses, gradually increasing the amount until the symptoms are controlled or *iodism* occurs. This is *characterized by coryza, lachrymation*, and an eruption of *papules and pustules on the face and shoulders* (acne), and occasionally, though very *rarely, by blebs.* As to the quantity, it may perhaps surprise you to hear how much of this salt patients with advanced syphilis will stand ; it is sometimes *enormous.* For example, in the case of Quinn, the patient I showed you with

nervous syphilis, in whom the symptoms were distortion of the face and paralysis of the leg and arm of one side, attended with severe pain in the head and insomnia, the amount given was 120 grains at each dose, and this was repeated three times daily. In addition to this he used a drachm of mercurial ointment every night by inunction, and perhaps you remember that when, after ten days of such treatment, I presented him to you again, the facial paralysis had almost entirely disappeared, the arm and leg had regained a great deal of their power, and he had lost much of the cachectic appearance which he formerly showed. And yet the case at first looked anything but promising, and it only shows the importance in these advanced cases of large doses of the salt. Large as the above amount is, it is not so great as I have sometimes used, and I will formulate here some axioms which may be of use for you to remember in the treatment of syphilis:

Mercury is the main-stay in treatment, not only in the earlier, but in the later stages as well.

Iodid of potassium is of little service in the earlier stages; in the later stages, although of extreme value, it only assists in dispelling symptoms; to produce radical effects it should be combined with mercury.

In giving both mercury and iodid of potassium watch your patient carefully, to obviate the occurrence of toxical symptoms, but do not hesitate to use either remedy in sufficient amount to dispel the symptoms, no matter what the requisite dose may be.

You will oftentimes find in the graver forms of the disease, such as gummata or nerve syphilis, that doses of *twenty or thirty grains produce little effect;* carry your dose up to *fifty or sixty grains*, and you will have the gratification of *seeing your patient improve at once.* What the mode

of action is I can not tell, for curiously enough, when given in large doses, nearly all the iodid of potassium used can be collected in the urine; thus, if a dose of sixty grains be given, forty of it will be excreted, leaving twenty to be absorbed, and yet if you give only twenty grains instead of sixty, it makes no sort of impression on the disease.

It *sometimes*, though *rarely*, *happens* that the patient, through some idiosyncrasy, *can not tolerate iodid of potassium;* in those cases the simple *tincture of iodin* may be used as a *good substitute*. It should be given in the following prescription:

℞. Tinct. iodi, ... ℥ss
Syr. fusci vel syr. aurant., ... ad ℥iv.
M.
Sig.—One teaspoonful well diluted with water three times daily before meals.

This preparation is usually well borne by the stomach and is by no means unpalatable.

The *amount* of this should also be *increased* precisely in the same way as the iodid of potassium, although the amount required will probably *not be as large*.

When we were discussing the natural history and symptoms of syphilis, I spoke to you about what is known as *syphilitic cachexia*, a condition characterized by lardaceous changes in the viscera. This is a very *grave and serious complication*, because the system refuses absolutely to absorb either food or medicine. When this occurs, the *treatment by mercury and iodid of potassium, if continued, has to be combined with tonics and stimulants*, which should be given with a liberal hand. Of the tonics, the principal ones are the *ferruginous* preparations, either alone or combined with *cod-liver oil*, and among the stimulants, the

more diffusible ones, such as *champagne and brandy;* but *when a patient arrives at this stage of the disease there is little hope*, and all that there is left for the surgeon to do is to make the road to the grave as easy as possible.

As regards the *duration* of treatment in the *later stages*, it must of necessity be *prolonged*, as the symptoms are *more obstinate in character* than in the early part of the disease. *The patient should be prepared to continue his treatment for a year, and longer if occasion requires;* and this, too, even if all symptoms have disappeared, varying in this respect from the treatment given in the early periods of the disease. After treatment by antisyphilitic remedies has been continued as long as the surgeon deems necessary, the patient should be subjected to a *thorough course of tonics*, in order to complete what the mercury and iodid of potassium have begun.

Before closing this chapter let me say a few words to you in regard to *prognosis*. In the *majority of cases it is good;* patients recover entirely from their disease, oftentimes without showing any of the serious lesions such as you meet with in the wards of hospitals, and examples of which I have already shown you. *By recovery I mean that patients show* after the disease has run through a certain course, *no further symptoms of syphilis*, even though they have been kept under observation for several years; and should they *marry*, their *offspring show no sign or taint of disease* so far as syphilis is concerned. It is *not* in the *acquired* form of syphilis that *fatal results* occur so much as in the *hereditary* form, where the *mortality is large*, and where even should the child survive to puberty, it is *liable throughout its whole life to show symptoms of its inherited malady.*

If *acquired* syphilis proves *fatal*, it is usually so in con-

sequence of its *indirect attack* upon the *vital organs* of the body,—to wit, upon the *kidneys*, the *heart*, or the *lungs*,—and it is quite possible that many *fatal cases of nephritis and of pneumonia may have had their starting-points from some antecedent syphilis* from which the patient had apparently recovered. It is well to bear this fact in mind, for in some *obscure cases* where no cause for the disease can be assigned the use of *iodid of potassium* may *avert* what would otherwise be a *fatal* termination in the case.

In short, you may accept the following rules as a tolerably good guide in cases of acquired syphilis :

The average case of syphilis runs its course in from eighteen to twenty-four months.

Under proper and careful treatment the graver forms of the disease seldom occur.

After the disease has apparently run its course and antisyphilitic treatment has been suspended, the patients should be kept under occasional observation for another eighteen months, and if in that time no symptoms make their appearance, they may, as a rule, make their minds easy as to the future. This, you see, embraces a period of three and a half years, one half of which is devoted to the disease, and the other half to watching for further developments.

These rules, you understand, *are not absolute ;* indeed, none such can be given, but I believe they will serve as tolerably safe guides for you to follow.

CHAPTER IX.

HEREDITARY SYPHILIS AND ITS TREATMENT.

We have heretofore discussed only the various phases of acquired syphilis. This chapter will be devoted to a consideration of the hereditary forms of the disease.

Hereditary syphilis may be divided into three principal groups: the first, where it occurs *at* or *shortly after birth;* the second, where it shows itself *during childhood or at puberty;* and the third group, known under the name of "*syphilis hereditaria tarda*," where the lesions do not occur until *after puberty* and *during adult life.* It is claimed that the *earlier lesions of hereditary syphilis have been absent* in the last group; *but this I believe to be a mistaken view*, for in these cases of late hereditary syphilis *traces are sometimes discoverable of earlier lesions*, and the history will oftentimes furnish us a clue as to what has gone before. The lesions which occur at this stage are those of the so-called *tertiary, and are really gummatous* infiltrations, with their frequent attendant loss of tissue. There are, however, *two* notable periods of *explosion*, viz.—at *birth* and at the period of *puberty.* We will commence with the first of these—syphilis *at or shortly after birth.*

When the disease shows itself *at birth*, the child may be either *born dead* or, if alive, it usually *succumbs* in the course of a *few days.* The body is covered with *large bullæ*, filled with serum mixed with blood. These bullæ speedily *break, evacuate their contents*, and the *epidermis*

covering them *exfoliates*, leaving a *red, denuded surface* beneath. This constitutes what is known as *pemphigus neonatorum syphiliticum*. When the disease in the mother is *not very far advanced*, the child *may be born* to all appearances *sound and healthy, not developing* any signs of the *disease until some weeks or even months after birth*. Of course, the *longer the symptoms are delayed, the greater are the child's chances of viability*.

Syphilis in the infant appears almost always within the first six months of extra-uterine life; in the majority of cases within the *first three*. After a time the child loses its *plump and well-nourished look*, becomes *thin and querulous, refuses the breast*, and an *eruption* of the *erythematopapular* variety appears upon the *body, legs, and arms*, particularly upon the *soles of the feet* and the *palms of the hands*. Conjoined with this eruption are *mucous patches of the mouth, throat, axillæ, and about the anus and genitals*. The child is afflicted with "*snuffles*," a genuine *coryza* of *the nasal mucous membrane*, which renders *respiration difficult*. The *healthy cry* of the infant is exchanged for a *hoarse, stridulous noise*, due to the invasion of the larynx by the disease, and the child *sinks rapidly* from exhaustion and inanition or from a direct poisoning by the syphilis. An autopsy reveals *interstitial changes of the internal organs*, especially in the *liver and lungs*, corresponding with the *early stages of the gummous period*. Not infrequently the child, before death, may be attacked by *convulsions*, due to *inflammation of the meninges of the brain or spinal cord*.

If the symptoms are not developed until at or near the *sixth month*, they are *less formidable* in their course, being confined to manifestations corresponding with the *earlier stages of acquired syphilis*. These consist of the *erythematous and papulopustular eruptions of the skin*, conjoined with the *moist*

secreting lesions of both mucous membrane and skin, which, from their delicacy in infants, are peculiarly liable to be attacked. Under *vigorous treatment* the disease *gradually subsides*, and the child passes through the *earlier years of its life with only occasional outbreaks*, *until the period of the second dentition arrives*, when certain changes occur. Before that period, however, there are certain peculiarities of physiognomy which deserve attention. The *forehead* is very *prominent and bulging;* the *bones* of the *face appear abnormally small*, those of the *nose* are *sunken*, and the child has a *wizened and aged appearance;* the *angles of the mouth* are more or less *deeply scarred*, and the skin has an *unhealthy, sallow look*, different from the wholesome, clean complexion of sound children.

This description which I have given you is true in so far as it concerns the *classic type of early hereditary syphilis*, but you must remember that it is *not constant* and many a child is born into the world which presents *no such marked evidences* of its inherited disease, and, *should it survive the first twelve months of its existence*, *may grow up with none of the stigmata of disease* about it; on the contrary, it may *seem* to be *quite healthy:* certainly as healthy as the average type of children.

We will suppose now that the child has survived the dangers of the earlier months of its syphilitic existence, and that the treatment which has been instituted has assisted it to overcome the first symptoms of its disease. Let us see what other lesions of the skin may befall it in its course toward puberty besides the erythematous and papular eruptions of which I have just spoken.

There is a form of syphilis which has been described—and which I am perfectly free to say I have *never seen*—as a syphilitic manifestation, to wit: a *vesicular syphilide* in

which the eruption, beginning perhaps first as *papular*, becomes *vesicular* at *its apex*, and this little *vesicle rapidly loses its covering*, becomes *irritated*, and *secretes a moist, thin fluid* which dries upon contact with the air. If this be removed, the *skin* underneath it is found to be *red, but without ulceration*, and often occurs in large patches covering extensive portions of the skin. Do not forget this one fact, that the skin of any child is always thin and tender, and especially is this true of a syphilitic one, and the irritation of the skin, due perhaps partially to the disease and partially to natural causes, tends to produce more or less inflammation. I believe that *many, if not all*, of these cases of *vesicular syphilis*—and I base my opinion upon both personal experience and study of the cases of others—are nothing more than a *vesicular eczema* occurring upon a *syphilitic child*.

Another variety of eruption is one which has been described as *syphilis hæmorrhagica neonatorum*. This, however, is only a *variety of the pemphigus*, which I have already described, and is a *more malignant* type of the same affection. It is characterized by the *effusion of blood into the bullæ*, which gives the eruption a reddish or purple appearance and is usually fatal.

Subcutaneous phlegmona have also been described as due to hereditary syphilis, and one observer has regarded a case of *gangrene* of the forearm as the result of this same disease.

The *affections of the mucous membrane* which occur in the earlier stages of hereditary syphilis are principally *mucous patches*, which occur in the mucous membrane of the *nose*, the *mouth*, *larynx*, and *pharynx*, and if they occur *some little while after birth*,—say six or nine months after,—they are *usually curable* and the child *recovers* from them. If

they *occur earlier* and are *associated* with the *more severe symptoms*, which I have already detailed, the child *generally dies*. There are other lesions which occur later on, but which I shall reserve until I come to speak to you of the late type of inherited disease.

The *lymphatics and glands* are also affected, not only those which are *superficial*, but those which are *deep*. Thus the *bronchial* and *mesenteric* glands, the *inguinal* glands, the *lumbar* glands, the *iliac*, *hypogastric*, *thoracic*, *axillary*, and *carotid*—in fact *all the abdominal and thoracic glands* may be affected ; but there is *one* of all others which is *most liable to disease*, and that is the *thymus gland*. This gland is frequently much enlarged from *infiltration of gummatous material*, but it is *sometimes* found of *normal size* and does *not externally differ* much from a healthy gland, but upon *slight pressure it exudes a yellowish-white*, *viscid*, *semi-fluid alkaline substance* which, when examined microscopically, shows the presence of *pus*. Upon section the *tissue* of the gland is found to be *denser than normal*, with scattered deposits of *fibrinous exudation*.

The *nails* also suffer, and in the inherited as in the acquired type the disease appears under *two forms*. When it occurs with the *earlier and lighter lesions*, it usually consists of a *mild form of inflammation of the matrix*, which latter is *not destroyed*, so that the *nail* itself *recovers* from the attack, merely showing for a longer or a shorter time an *irregular or thickened condition of the nail* itself, together with, at first, a *yellowish discoloration* which later on becomes of a *dark*, *brownish* color, and the *nail grows irregularly*. When this occurs *later* on, however, the *matrix* itself is *destroyed*, and the *nail* is either *entirely and permanently lost* or else, if a portion of the matrix remain, the nail, which comes out, is *disfigured*, *thickened*, *distorted*, *and of a dirty rusty color*.

The *hair* is also affected in the form of an *alopecia* which may be *general:* that is to say, wherever hair grows upon an infant child—the *scalp*, *eyebrows*, and *eyelashes*. But in the *early* stage the *hair*, under proper treatment, *grows again; later on*, however, the *hair follicles* may be so *changed* as to render the *child permanently bald*, but with this peculiarity, that *the baldness is not general;* it occurs in *bands or patches*, usually occupying the *frontoparietal* regions, and is seldom seen upon the *vertex*, either frontal or occipital. In this also the *eyebrows* or *eyelashes* may be either *scanty* or sometimes entirely *absent*.

The *teeth* have for a long time been recognized as one of the *favorite points of attack in inherited syphilis*, and to Mr. Hutchinson, of London, is due the credit of first calling attention to them; but his views, with further observation and knowledge, have been much modified to what they were when he first wrote. In syphilitic children the *deciduous* teeth are *friable*, *small*, *irregular*, and *dirty looking;* they frequently seem to *crumble off close to the gum* and are incapable of doing much work. This is especially noticeable at the time of the *second dentition*, or when the *permanent* teeth make their appearance. They then present many curious points. In the first place, the *two central incisor* teeth of the upper jaw are frequently *widely separated* from each other, and instead of presenting the even, chisel-like edges which sound teeth should, they may be either *notched* at their cutting-edges in a *crescentic shape*, presenting somewhat the appearance of a new moon, or they may be *beveled away at their cutting-edges* so as to resemble a *screw-driver*. These are called *crescentically notched teeth* and *screw-driver teeth*. Besides this, they are very apt indeed to have a *furrowed* appearance, as though portions of their enamel had been gouged out. Besides this, the *lower incisor*

teeth present a *serrated* appearance, like the teeth of a saw, and have a very peculiar look when the child opens its mouth, or particularly when it retracts its upper and lower lips, exposing the front teeth placed against their edges. The teeth, furthermore, are *discolored*, *dwarfed*, *irregular*, and also frequently turn *black* and *crumble away* down to the edges of the gum.

The *eyes* also are invaded, and the child may suffer both from *keratitis* and *iritis*. Of the former, there is one peculiar variety which is nearly always associated with hereditary syphilis, and is known as *interstitial punctate keratitis*. This form of disease begins in the *interstitial layer of the cornea*, rapidly invades Descemet's membrane, and appears as *numerous*, *minute white dots* scattered throughout the tissue. Connected with it there may or may not be ulceration of the upper layers of the cornea. This form of disease is *insidious* in its attack, and is *seldom attended with much inflammation of the conjunctiva*.

Syphilitic *iritis* of hereditary origin is a *serious* matter, as it is usually attended with an *abundant effusion of lymph*, which may result in completely *blocking up the pupil* and rendering the patient *blind*. Even if it do not go so far as this, *adhesions* nearly always occur between the *free edge of the pupil and the anterior capsule of the lens*. The disease rapidly spreads to the *deeper tunics* of the eye, the *choroid*, and the *retina*, producing *serious impairment of vision*.

The *ears* also are affected, the first symptom noted being a discharge. Upon examination it is found that the *external auditory canal* is highly *inflamed*, is often the seat of *ulcerated mucous patches*, and the *membrana tympani* has been *perforated and lost by suppuration*. This condition may be associated with *inflammatory* troubles of the *middle*

ear, accompanied by a greater or less degree of *deafness*, which, however, is *not usually associated*, at least during the earlier stages, *with any affection of the nerves:* that occurs in the *late* forms of the disease.

The *internal viscera* may also be affected, and if the child is born syphilitic and so profoundly poisoned as to die shortly after birth, the various organs—*the lungs*, *heart*, *liver*, *spleen*, *stomach*, *intestines*, *kidneys*, *bladder*, in fact, *all of the internal viscera*—may show signs of *gummatous infiltration* in various stages. If the poisoning of the child be less profound, internal visceral disturbances, while present in the shape of *jaundice*, *enlargement of the liver* and *spleen*, and various *intestinal disturbances*, are usually *remediable* and *disappear* or are *held in check* by proper treatment. It is in the *later* stage of the disease that *affections of the viscera are more prone to occur* and in which they work oftentimes *great disturbance* and *trouble*. In the male child the *testicles* are sometimes affected, and the symptoms are *enlargement* and *hardness* of the testicle *without any pain*. As a rule, the *body* of the testis itself is *implicated*, *not* the *epididymis;* but this is *not invariably true*, as there are some cases reported where this portion of the testicle was affected. The infiltration of the testis may become *absorbed* under treatment, when from *atrophy* the testis itself may disappear, or else the *organ breaks down from softening* of the infiltration, and the same result—*loss of the organ*—is induced by suppuration. In *girl* children, there being practically *no uterus or ovaries at this tender age*, so far as I am aware, *no syphilitic lesions* of these bodies are noticed, but they *are noted* when the child grows up to *womanhood*.

The *bones* are also the seat of trouble with the rest of the body, and there is one variety particularly to which attention has been called, to wit: the *swelling of the fingers and*

toes, or, as it is known, *dactylitis syphilitica*. It is also attended with some degree of *redness and pain*. If left untreated, this *swelling breaks down*, *opens* in one or more places, and is frequently *associated with dead bone*, being analogous to what happens in the late stages of acquired syphilis, and may indeed be regarded as a *gumma of the periosteum of the bone*. Under treatment the swelling *subsides* in a great degree, but in *very few cases entirely*, some *thickening being left behind;* and where the *joint* is also affected, a *stiff and deformed finger* is but too often the result.

If the *nervous* system be attacked, the disease usually shows itself as *epileptiform convulsions* or *chorea*, and unless the surgeon be aware of the possibility of syphilis as the underlying cause, he is apt to regard it as a case of struma or scrofula.

Such children, under proper treatment, *may entirely recover* from these symptoms, but under any circumstances will always be *delicate in health*, unable to withstand the attacks of intercurrent diseases, and *liable to succumb* to what would otherwise be trivial illnesses; in fact, they are *rotten*, their inherited tendencies continually keeping them on the dividing-line between health and disease.

Let us suppose that the child has passed through the early period of its life and has arrived at the age of *puberty*. The earlier symptoms may have been slight and leave few, in rare instances no, traces behind; but suddenly at this time the patient is attacked with a *swelling of the joints*, notably of the *knees*, *ankles*, *elbows*, and *wrists*, *less frequently* of the *clavicle* or of the *lower jaw*, which comes on *slowly without pain* or *any other* of the *concomitant* symptoms of *inflammation*. This swelling goes on *quietly* and usually *breaks down*, giving vent to a *thin*, *sanious*,

evil-smelling discharge, which is *not purulent* in the strict sense of the term and which is *accompanied* with the presence of *dead bone*, as discovered by the probe. Or, again, the child may be attacked with a *sudden swelling* of the *hard or the soft palate*, which quickly *breaks down* and *ulcerates*, leaving a *large communicating cavity between the mouth and the nose.*

In addition to these symptoms of the bone, the child may suffer with *nervous symptoms* in the shape of *epileptic seizures*, *chorea*, and *hemiplegia and paraplegia.* These *come on suddenly* with *no premonitory symptoms*, and can be referable to no cause, so far as the history is concerned. The nose sometimes shows evidences of trouble in the shape of *ozena*, with *swelling of the nasal* and *maxillary bones.* The discharge is *thin, sanious*, and *foul-smelling*, and oftentimes *fragments of bone* are *brought away* with the nasal discharge, and the *bridge of the nose suddenly sinks from destruction and necrosis of its bony framework.*

In addition to these symptoms the young adult may show some lesion of the *skin*, which is said to have commenced "as a boil." The patient will inform the surgeon that a *swelling* occurred in the *cellular tissue*, which was *slightly red*, *not very painful*, which was *slow* in its course, and *gradually broke down;* but as soon as it broke down it began to *extend and ulcerate*, being covered with a *dirty gray floor* and *discharging a thin, foul discharge.* It would *never entirely heal up;* in *some parts* it would *get well* while it would *extend in other directions;* and where it does *cicatrize*, *leaves a white*, *puckered scar* which sometimes is almost a keloid. This is the variety so commonly *misnamed* "syphilitic *lupus*," with which disease it really has *nothing in common.* These are symptoms which oftentimes puzzle the surgeon as to their cause and origin. In some instances

the *stigmata* of previous lesions are *left behind* in the shape of an *old interstitial keratitis*, *malformation* of the *teeth*, and *scars* about the *angles of the mouth*. But *not infrequently* there *are no such symptoms* to give the surgeon the clue as to the cause. It is well in all such instances for you to bear in mind *the possibility of inherited syphilis* as a cause; nor should you hesitate to suspect this as a reason merely because the parents or the child's family are respectable and apparently above suspicion. *Remember, accidents will happen, and in syphilis, above all other diseases, it is the unexpected which is most likely to occur.*

In addition to these lesions, the patients will very often show other symptoms. For example, they are in a large proportion of cases *undersized* and evidently *undeveloped* in a variety of ways. If a *man*, the *genitals* will be *small* and the *testes undeveloped*, perhaps *not descended*, being *no larger than they are found in boys of ten years of age*. In *women* the *genitals* will also be *small*, the *mons Veneris* and *axillæ devoid* of *hair* or but very scantily furnished. The same is true of the male. The *mammæ* will be *without prominence*, and *menstruation* will *scarcely* be *established*. Besides these lesions the *eyes* will show evidences of old inflammation, the *teeth* will be defective and malformed, the patient will be more or less *deaf*, giving the history of repeated and sudden attacks of otorrhea, and there may be in addition some lesion of the *joints*, some *ulceration* of the *bone*, or some swelling and unhealed *ulcerations* of the *skin*, which are serpiginous, cicatrizing at one end and extending in another. In other words, you have before you clearly marked *evidences of atrophy* and general *arrest of development*.

The *mental powers* are also *defective*. The patients are *intellectually heavy* and *dull of comprehension*, not grasping readily questions which are asked them; the *speech* is some-

times *thick and stuttering*, or if *ulceration* have occurred in the *hard* or the *soft palate*, the character of the *voice* is *changed*. It becomes *nasal and indistinct*, and if the *larynx* and *pharynx* have also succumbed to the disease, the patient's voice is *hoarse*, sometimes almost *aphonic*.

This is the classic picture of a case of *syphilis hereditaria tarda*, and it may be *present in various stages, from a slight lack of development attended with an affection of one or two of the joints to the condition which I have just pictured for you*.

Fortunately for the unlucky infant, as well as for the good of the human race, the *mortality* in this class of patients is *enormous;* from *80 to 90 per cent. of syphilitic babies die*, and the earlier in the course of their extra-uterine life the symptoms occur, the smaller the chances of their viability.

Hereditary syphilis, together with the other venereal affections, is said to be caused by a *bacterium*, and in some cases where examination of the viscera of syphilitic infants has been made, *streptococci* have been found in the *bullæ of pemphigus*, in *bone*, in the *liver*, *pancreas*, *thymus gland*, and *intestines*, as well as in the *smaller blood-vessels* and in the *interspaces of tissue*. It is stated that they have *never been found* in *blood-corpuscles* nor in the *interior of cells* and *fibrous tissue*. Whether these streptococci are a cause of the disease or simply a concomitant independent of any causative effect, is yet undetermined, and it, perhaps, at present makes but little difference whether they are the cause or not.

With regard to the *etiology* of hereditary syphilis there is, even at the present day, a vast difference of opinion. Many able writers contend that the father frequently is the sole cause of the disease in the child, without the mother becoming herself infected; in other words, *they*

claim that the semen of the father will infect the ovum without conveying the disease to the mother. I avow myself an absolute disbeliever in this doctrine; I do not believe that a mother can give birth to a syphilitic child without being herself diseased; and I hold that if the *mother be not syphilitic*, the *children are not*, no matter what the father may be. As in a work like this it would be impossible to enter into a lengthy discussion of the *pros* and *cons* of the case, I must be satisfied to tell you the bare fact, and to express the belief that your future practice will confirm my statement. Be it correct or not, here is the *practical point for you to remember when you are called upon to treat syphilitic babies: include the mother in the treatment as well; the father also, if you can, but the mother always*, else you will be chagrined to find that *subsequent pregnancies are followed by syphilitic children.*

Syphilis in its *earlier* stages, especially if it be of a *mild* type, may show very few and slight symptoms, and even if the manifestations attract notice, the *woman*, from notions of *delicacy*, or more frequently from *ignorance* of their importance, will give the surgeon *no history* whatever. *Remember, also, that the earlier lesions leave no traces behind them*, and this, conjoined with the fact that *pregnancy often exerts an influence in holding the earlier manifestations of syphilis in check*, leaves the surgeon absolutely in the dark as to the cause of the child's syphilis. He then turns to the father, and if the unlucky wight has happened to have contracted syphilis as a bachelor, although before marriage he has entirely recovered, the disease of the child is laid upon his shoulders, to the great comfort of the surgeon and the edification of all concerned, except, perhaps, the father. Sometimes, however, he *absolutely denies* any previous disease, and the case is then consigned to the limbo of unknown causes.

Syphilis is also a *fruitful cause of abortions;* and where, in any given case, *repeated pregnancies* have ended in *miscarriage*, this latter should always be regarded as *suspicious*, and the *possibility of syphilis* being the cause *entertained, no matter if the woman at the time shows no symptom of the disease.*

The *treatment* in these cases, to be of any avail, must be *prompt* and *thorough;* and here, as in the acquired form of syphilis, *mercury is the main reliance.* It is of *little use* to attempt to *treat the child* through the *mother's milk*—that is, by putting the mother upon treatment; because, in the first place, it is very *doubtful* if the *mercury* be *excreted* by the *mammæ*, and, in the next place, *if so, the amount is very small*—too small indeed to be of any service. The *inunction method* in this form of the disease is by far the *best*, and should be practised in the following manner: a drachm of the oleate of mercury (20 per cent.) should be evenly spread upon a piece of cloth or thin flannel a foot wide, and long enough to go round the baby's body; this should be applied like a swathe, and the mercury should be renewed every second or third day. *Children in this condition stand mercury remarkably well*, and the only care taken should be to see that this strength of the *ointment does not irritate the skin;* if it does, a weaker solution of the oleate should be used, or else freshly prepared mercurial ointment. In addition *minute doses* of either the *bichlorid of mercury* or of *gray powder* may be given internally—the bichlorid in doses of from $\frac{1}{100}$ to $\frac{1}{50}$ of a grain, three or four times daily, *in milk* which has been diluted with one-half its own quantity of water, and slightly warmed; the gray powder in three- or five-grain doses, placed directly upon the tongue. *Iodid of potassium in these cases is useless*, and the treatment should be confined to the use of *mercury alone.*

As regards the child's nursing, *no one but the mother should be allowed to suckle it*, inasmuch as the *mucous patches* which are nearly always found in this stage of *infantile syphilis* are *eminently contagious*, and you have no right to expose an otherwise healthy woman to the risk of infection. It is a curious fact, which was pointed out as early as 1837 by Dr. Abram Colles, of Dublin, that the mothers of syphilitic children, although they themselves may show no signs of the disease, are not obnoxious to contagion from syphilis; hence, the child may, with impunity, suckle its *apparently* healthy mother, where it would be a source of danger to any healthy stranger who should attempt to perform the maternal function. *If the mother should be unable to suckle the child, it must be weaned and brought up on the bottle.*

Supposing the child to recover from its earlier symptoms,—the *mercurial treatment having been continued*, of course, *until all manifestations have disappeared*,—it should be placed upon a *tonic treatment*, and *kept under observation for a couple of years.* It may then be *dismissed with the injunction to the parents that fresh symptoms must be expected when the child arrives at the age of puberty;* and should any manifest themselves either at that time or before, the child must *at once be placed under medical observation.* As I have already pointed out to you, the symptoms which present themselves at the period of puberty are analogous to those which occur in the later stages of acquired syphilis, viz.: *nodes of the bones*, *diseases of the nervous system*, and *ulcerations of the mouth and throat.* Here it is that you find the *iodid of potassium* coming into play as a feature in the treatment, but *not*, I beg you to remember, to the *exclusion of mercury;* for you will obtain the best results where you *combine the two.*

This may be done in the following manner:

℞. Hydrarg. bichlor., ... gr. ss–j
Kali iodidi, ... ʒj
Syrup. aurant. cort., *vel*
Syrup. sars. comp., ... q. s. ad ℥ij.
M.
Sig.—Teaspoonful in water three or four times daily.

If it be preferred to give the *two separately*, the pill of the protiodid of *mercury* may be given *once daily*, in ¼ or ⅓ of a grain dose, and the *iodid of potassium twice or thrice daily*, before meals, in the following prescription:

℞. Kali iodidi, ... ʒj–ij
Syrup. sars. comp., ... ʒij.
M.
Sig.—In teaspoonful doses.

If the iodid should not be well borne, the tincture of iodin may be substituted, as follows:

℞. Tinct. iod., ... ʒij–iv
Syrupi fusci, ... ʒiij.
M.
Sig.—Teaspoonful three times daily.

All these preparations in which the *syrups* enter should be made in *small quantities*, and freshly prepared, as the syrup is liable to undergo fermentation when long kept.

In the *intervals* between the *mercurial* and *iodic* treatment one of the best *tonics* for internal administration is the *syrup of the iodid of iron*, either *alone* or in *combination with cod-liver oil*, and the *syrup* of the *hypophosphites of lime or soda*. This latter is particularly to be commended in the *osseous and nervous lesions of inherited syphilis*.

The following prescriptions will be of service:

℞. Syr. ferri iod., ... ℥ij.
Sig.—Five to ten minims three times daily after meals.

℞. Syr. ferri iod., ... ʒiv
Ol. morrhuæ, ... ʒiij.
M.
Shake well before using.
Sig.—Teaspoonful after meals thrice daily.

℞. Syr. calcis et sodæ hypophosph., ... ℥ij.
Sig.—In teaspoonful doses twice or thrice daily.

This may be *combined with cod-liver oil*, if deemed desirable, in the same doses as given above.

The old manner of giving the *iodid of iron in pill* form—what is sold under the name of Blancard's pill—is *not so good as the syrup*, inasmuch as the pills, if kept for any length of time, are apt to become hard, and are not easily acted upon by the intestinal juices.

CHAPTER X.

GONORRHEA OF BOTH SEXES.

Gonorrhea, or, as it is more commonly called, *clap*, is one of the most *common* forms of venereal disease which you will be called upon to treat, and oftentimes one of the most *obstinate* and *rebellious* to treatment. I shall consider it, first, as it affects the *male;* second, as it affects the *female*. It is a *local disease, sometimes accompanied by constitutional symptoms;* it is very *contagious*, and is usually *contracted* by one person from another at the time of *coitus*. This is known as *direct contagion*. Gonorrhea may, however, be *conveyed* from one person to another by the medium of *sponges, syringes, and other articles* which have previously been used by an individual suffering from some form of the disease. This is known as *indirect contagion*, and is seen much *less frequently* than direct infection.

Gonorrhea is characterized by a *specific micro-organism*, the *gonococcus*, described by Neisser in 1879. This specific coccus usually appears as a *diplococcus*, and may invade *any part* of the *genito-urinary tract* of either sex. Other parts of the body are occasionally invaded by the gonococcus. With the exception of the genito-urinary organs, the *eyes* are the organs most frequently attacked, either directly or indirectly. *Ophthalmia neonatorum* is the result of a gonorrheal infection usually produced by direct contact with the mother's diseased genital organs. By the medium of the hands the eyes of gonorrheal patients are occasionally infected. The *rectum* may also be the seat of

trouble. This is more frequently the case in *women* than in men, owing, in the former, to the relative position of the rectum and vagina. The discharge from the vagina, by the force of gravity, flows over the anus, and in this way may invade the rectum. The *direct* introduction of the gonococci by *coitus* is occasionally observed. When present in *men* and *boys*, such an occurrence is practically always the result of *sodomy*. Other parts of the body invaded by the gonococcus, as demonstrated by bacteriological tests, are the *joints*, *tendons*, not infrequently the *endocardium* and *pericardium*, the *pleura*, the *peritoneum* in the female, various *glands* of the body, and the *mouth* and *throat*. Intramuscular and subcutaneous *abscesses*, and *rarely septicemia*, have also resulted from gonorrheal infection of the urethra. Much discussion has followed as to the etiological importance of the gonococcus, but as Neisser demonstrated its presence in a large majority of cases of urethritis, this *specific micro-organism* is at the present time accepted by nearly all authorities as *pathognomonic* of gonorrhea. In order to make a positive *diagnosis* of gonorrhea we must *demonstrate* the presence of the *gonococcus* in the suspected discharge. A gonorrhea can *only* be produced by the *entrance* into a person's *genito-urinary tract* of the *diplococcus* of Neisser, which is *never* present in *healthy* subjects of either sex. The *virulence* of the gonococcus, however, *varies* in different individuals, and in consequence the course of the disease is variable.

If the gonococcus be absent from a suspected discharge of the genito-urinary tract in the male or female, the disease is usually the result of a *simple* or *nonspecific inflammation*. In a small proportion of patients an urethral *discharge* in the male may be caused by intra-urethral *chancroids*, the *initial lesion* of syphilis, and occasionally

by *tuberculosis* of some portion of the *urethra* or contiguous parts.

The differential diagnosis of these various forms of inflammation, as can readily be seen, is often of vast importance, first, as it affects the treatment of the case; next, as it may affect some one's good name and reputation, and last, in its relation to the community at large.

After obtaining a careful history of the patient we should in all cases make a *local examination* of the parts involved. *Never take the patient's unsupported word for any venereal manifestation.* After the parts have been exposed and superficially examined, a drop of the suspected discharge should be pressed from the urethra and placed on a clean cover-glass. Another cover-glass is gently pressed over the first; by a quick, sliding motion the glasses are then separated, and allowed to dry in the air. The fraction of a drop of the exudate is in this manner pressed between the cover-glasses into a thin film. The glasses thus prepared should be carefully heated over a Bunsen burner or an alcohol lamp. In this way the suspected discharge is "fixed" on the cover-glasses so that it will not wash off, and is then ready to be *stained for examination.*

The *gonococci* are *coffee-bean* or *biscuit shaped*, found almost always in *pairs*, with their *concave surfaces parallel and facing each other.* The distance between the concave surfaces is about equal to one-half their individual width. They are found *abundantly within* the capsule of the *pus-cell* and *outside* of the *nuclei*, and particularly so in the early stages of gonorrhea; as the disease subsides they become fewer and fewer, and finally, as the case recovers, disappear.

In some cases a few of the diplococci are found outside of the pus-cell, while others are situated as already described. We can sometimes account for this on the assump-

tion that too great pressure dislodged them at the time of the preparation of the cover-glasses.

In a small percentage of cases, however, another diplococcus closely resembling the gonococcus in its general arrangement has been demonstrated in urethral or vaginal discharges, and it is to the occasional presence of this *non-specific diplococcus* that we, no doubt, owe much of the confusion which has prevailed in regard to the etiological importance of the gonococcus.

After we have taken, as described above, some of the discharge for examination, the male patient should be directed to pass the urine in two glasses, its appearance carefully noted, whether cloudy or not, and in which glass the cloudiness is more marked. The character of the "*Tripperfäden*," or *clap-threads*, and in which part of the urine they are most prominent are of importance in determining the position of the diseased area. In acute anterior urethritis the first urine voided is more cloudy than the second. This matter will be considered more in detail later on.

The *specific gravity* of the urine, its *reaction*, *color*, and the presence or absence of *albumin* and *sugar* should in certain cases be carefully noted and *a microscopical examination* of the urinary sediment made.

The next step in our *examination* is to determine the condition of the *prostate* and *seminal vesicles*.

In *acute* urethral inflammation *no examination* of the canal should be made, but in the *subacute* and *chronic* forms it may be *explored* with the *endoscope*, and in these latter cases we may also *investigate* the urethra with an olive-tipped bougie for *strictures*. If the *prostate* and *seminal vesicles* are *normal*, sounds may be passed into the deep urethra and bladder, but otherwise, in the majority of cases,

it is best not to do so. The *anterior urethra* should be washed out with a mild *antiseptic* solution before instruments are passed.

It is well to remember that a *discharge* appearing at the meatus may indicate *disease* of *any portion* of the *urethra*, the *seminal vesicles*, the *prostate*, *Cowper's glands*, etc.; therefore to employ an anterior urethral injection as routine treatment in such cases is not only useless, but frequently aggravates the disease.

Gleet is a word we hear frequently. In its strict sense it is used to designate the "morning drop" in cases of chronic gonorrhea, and is usually the result of stricture. The term, however, is *synonymous* with *chronic gonorrhea*, and is a convenient cloak for ignorance, for it tells nothing as to the seat of the disease. As already stated, we should determine by our examination the part of the genito-urinary tract involved and describe the disease accordingly.

When there is a question as to the fidelity of a husband or a wife, a great deal depends upon the medical adviser in his management of the case, and in such a contingency it is most *unwise* to immediately presume that a *discharge* is of *gonorrheal* origin. Before expressing an opinion obtain a history of the patient, then make a local examination of the parts, and finally examine carefully for the gonococcus.

Gonorrhea is occasionally the cause of *sterility* in both men and women; particularly is this the case when there is a history of the epididymes, the seminal vesicles, the prostate, etc., in the male, and the uterus and its appendages in the female, having been invaded by the disease.

Gonorrhea has an *incubation period* of from three to seven days, *usually appearing*, however, within *seventy-two hours* after *the suspicious coitus;* the first noticeable symptom is a *slight tickling* just *within* the *meatus*, which becomes

more *marked* during *micturition.* If pressure be exercised along the floor of the urethra, a *drop or two* of sticky *fluid* can be squeezed from the end of the penis. This fluid is *thin*, *colorless*, and does *not stain* the linen. After twenty-four to forty-eight hours have elapsed the discharge will be seen to have lost the characteristics just detailed, to become *thicker* and *white*, *like milk*, and the act of *micturition* is more *painful.* If the disease be left to itself, the discharge becomes more and more abundant, sometimes so much so as to drip from the patient; it loses its white appearance and becomes *yellow* and, *if* the inflammation is *acute*, of a *greenish* or *rusty* hue, from the admixture of *blood.* The act of *urination* now becomes decidedly *painful*, the *stream* of water very much *diminished* in size, and when the *inflammation* is *high*, the *water* is only passed *drop by drop.* Where this condition of things obtains, *febrile* symptoms are often present, particularly in a first attack, attended with a *high pulse*, *hot* and *dry skin*, and a *furred tongue.* The *penis* is edematous and *swollen*, and where the *prepuce* is long, the *edema* may be so great as even to cause *partial* or *complete phimosis.* The *lymphatics* on the dorsum penis are *enlarged*, *red*, and *painful*, and the *glands* in the *groin* may also participate in the general inflammation, becoming, in their turn, *swollen* and *tender.*

In other cases the *inflammatory* symptoms may be entirely *absent*, the only signs present being *painful micturition* and a *purulent discharge.* This usually reaches its *height* about the *tenth day*, invading in its progress the urethral mucous membrane from the fossa navicularis, the starting-point of the disease, to the region of the bulbus urethræ. At this date the discharge retains its *yellow* character, but the act of *micturition* is *less painful* than during the first few days of the disease. It then remains *stationary* for *another*

ten days or so, when the discharge gradually loses its purulent and *yellow* character, changing to *white*, and from that to a *thin, viscid, colorless* flow, running, but in a descending scale, through the same course that it pursued in its commencement. As the *discharge* becomes less and *less purulent* the act of *micturition* becomes *easier*, until finally *all pain* and discomfort *cease*. Gradually this *thin discharge diminishes*, until it finally *dries up* entirely, and the *patient* finds himself *well*. This is the course usually pursued *where no complications* are present; where these occur, however, the disease is of much more prolonged duration, is more painful and serious; but of these I shall speak in a separate chapter.

You would be *wrong* should you *consider* that *all urethral discharges* in men are of *gonorrheal* origin. Undoubtedly the majority of such discharges are caused by the gonococcus, but we also have *other factors* at work which must be carefully differentiated.

A simple urethritis is one which has no specific microorganism. It is sometimes *produced* by staphylococci, streptococci, or other *bacteria* which may have been present in a *leucorrheal* or *menstruating* woman at the time of coitus. On the other hand, a *simple urethritis* in a man may be caused by an irritating *injection*, by the improper use of urethral instruments, or by excessive and unnatural methods of *sexual excitement*. In many cases of simple urethritis the *discharge appears within a few hours*, is *mild in type, and disappears sooner than a gonorrhea*. In other cases, however, the clinical history is *very similar* to that of a gonorrheal infection, and can only be differentiated by a *microscopical* examination of the discharge. In patients who have had a previous gonorrhea, who are debilitated, or who are suffering from tuberculosis we must be guarded

in making a diagnosis of a fresh gonorrhea, and especially so in the last cases, where we occasionally find a tubercular process grafted on an old gonorrheal infection. Such cases are extremely obstinate to all methods of treatment, and when such a condition is suspected, the discharge should always be examined for the tubercle bacilli.

The old theory that gonorrhea may be produced in a man by coitus with a healthy woman is now known to be erroneous. In such cases the disease is usually a simple urethritis. An urethral chancroid, the initial lesion of syphilis, and gout will also produce a running from the genitals, and it is oftentimes difficult to decide at once whether the disease under observation is really gonorrhea or not. If the cause be due to a *concealed chancroid*, the following symptoms will serve to put you upon the right track. The *pain* in the urethra is *localized*, and *not general*, as it is in clap; the *discharge*, although purulent, is *not very abundant*, and is frequently *streaked* with fresh *blood*, and *pressure* along the floor of the urethra excites *pain* only at the *seat* of the *lesion*. The crucial tests, however, are the microscope and *auto-inoculation*. *Separation* of the *lips* of the urethra will often disclose the *sore* seated just *within* the *meatus;* but if, as sometimes happens, it is situated deeper within the canal, the examination must be conducted in another manner. An instrument known as the endoscope or urethroscope should be employed to differentiate the above-mentioned conditions. This instrument is passed a short distance into the urethra, and by the aid of an electric light projected through the tube we can plainly see the diseased area. Sometimes a wire frame speculum affords a better view than the endoscopic tube.

If, however, the discharge be due to a concealed *initial lesion*, the symptoms are somewhat different : the discharge

is very *thin*, and *seldom* becomes *purulent*, unless irritated from some cause or another. Palpation reveals, in the majority of cases, an *indurated spot* in the course of the canal, and an examination of the urethra by the method already advised gives the clue to the proper source of the urethral discharge. Besides these causes, *gouty* persons are very liable to *slight discharges* from the urethra; and especially after the patients have indulged a little more freely than usual in the pleasures of the table, particularly in the use of heavy-bodied wines, such as Burgundy or port. Here the disease comes on *without* any history of *sexual indulgence*, and is attended with *pain* near the *neck* of the *bladder* and along the course of the *prostatic urethra* during *micturition*. The *discharge* which accompanies this form of disease is *not very abundant*, although it may be *slightly purulent;* it *stains* the patient's linen, and comes from the *deeper* part of the *canal—never from the anterior portion, as in clap.* The *urine* is very *acid* and loaded with *urates*. Under proper treatment these symptoms usually abate in the course of a week, leaving the patient as well as he was before.

Tight strictures of the deep urethra may also cause a *mucopurulent discharge;* but as a consideration of these diseases belong rather to the domain of surgery than of venereal medicine, I shall content myself with a mere mention of this as an exciting cause.

From what has already been said, the importance of differentiating between a gonorrhea and other causes of inflammation of the genito-urinary tract is very apparent.

The *duration* of gonorrhea, as I have already told you, varies very much in different individuals. In *women* it may last for *several months* or even *years*, and is frequently one of the most *obstinate* diseases to treat. This is particularly

the case when the gonococci invade the mucous membrane of the uterus and the other genital organs. In *men*, however, although sufficiently *obstinate*, it is *not*, as a rule, *so chronic* as in women; this is due in great measure to the greater care and persistence with which the treatment is carried out. *In men the disease, unless complicated, usually runs its course in from four to eight weeks;* but if any of the complications supervene, of which I shall speak more fully in another chapter, *the disease may be prolonged many months or even several years.* Much depends upon the *fidelity* with which the patient carries out the treatment, and he should be particularly cautioned to *continue* it for a short time *after apparent recovery* has taken place, because *gonorrhea* is very *prone* to *relapse*, and each relapse makes the disease *more difficult to cure.*

In women the affection may show itself first as an *inflammation* of the vulvar *mucous membrane, invading the vestibule* and the *labia majora et minora. Micturition* is attended with some *smarting* and *pain*, due to the acid urine passing over the irritated and inflamed mucous membrane.

Vulvitis is of *frequent* occurrence, and is generally attended with *erosions* of the *mucous membrane* of the vulva, the vestibule, and the fourchette, with a copious mucopurulent discharge which, flowing over the perineum and the insides of the thighs, *irritates* and *excoriates* these parts. If the inflammation is very acute, the labia majora become *edematous* and *swollen*, sometimes ending in *suppuration.*

The *glands of Bartholin*, the ducts of which open within the introitus vaginæ, may participate in an attack of vulvitis, *both* being involved at the same time, although the attack is *usually unilateral.* The inflammation presents itself as an *ovoid swelling* situated at the posterior commissure of the *labia majora*, and nearly always ends in *suppuration*, follow-

ing one of two courses : either the pus is evacuated through the duct into the vagina or occlusion of the duct ensues, requiring an external incision for cure of the swelling.

In *urethritis* the most common site of the disease, the canal, is seen to be *red*, *swollen*, and *secreting* an abundance of *thick yellow pus*. If the discharge is not apparent to the eye, after the urethral orifice has been wiped clean a finger may be introduced into the vagina, and by stripping the urethra we can usually force out a few drops of pus. *Where you find the urethra in women the seat of a muco-purulent discharge, you may say with confidence that the disease is gonorrhea ;* for no leucorrhea that I am conversant with is attended with a discharge from the urethra.

Stricture of the urethra is comparatively *rare* in women, and when it does occur, is usually seated near the meatus.

Vaginitis, though usually considered the most common form of gonorrhea in women, is now known to be *present much less frequently* than urethritis or endometritis. The disease begins as a *thin*, *viscid*, *colorless discharge*, analogous to what occurs in the male, which speedily becomes *thick*, *abundant*, and *purulent*, staining the woman's body-linen. This inflammation usually extends from the urethra, vulva, or cervix to the *vagina*, which upon examination is seen to be *red*, *swollen*, and *secreting* a copious amount of *thick*, *yellowish pus*. The *temperature* of the parts is also *increased*. After *lasting* for *several weeks* the discharge *diminishes* in intensity and purulence, and the *mucous membrane* of the vagina becomes *less red* and *swollen*, although the discharge may continue for some time longer. It now, however, becomes of a *light yellow or white* color, closely resembling an ordinary *leucorrheal* discharge. When this stage is reached, unless subjected to treatment, it remains *stationary* for a long time, being

liable to exacerbation from various causes, until it gradually wears away to the thin, viscid discharge which marked the advent of the disease. *Pain is no longer* felt during micturition, as the mucous membrane of the vulva becomes thickened and is no longer sensitive.

Ordinarily a gonorrheal vaginitis when not complicated is *not a serious affair*, and is usually cured in from *three to four weeks*. In prostitutes, however, the disease commonly becomes *chronic*, and we find a *dry*, *roughened* condition of the vaginal mucous membrane. In women as in men the disease is liable to become *chronic*, particularly if the *uterus* and the *Fallopian tubes* have become involved. *The gonococcus may remain inactive for years in the mucosa of the uterus. A woman with a latent gonorrhea may infect a healthy man who has had coitus with her at or about the time of menstruation, while at other times the same man would be unaffected.* This possibility partially accounts for the fact that one man becomes infected with gonorrhea while another having sexual relations with the same woman escapes all contagion. The reason for this is that during the menstrual period the endometrium is congested, and with the flow are dislodged some of the gonococci which are at other times buried and consequently harmless. Such a condition, while in a quiescent state, is extremely difficult to diagnosticate. On the other hand, many a healthy young woman becomes after marriage an invalid, or worse, through the invasion of the gonococcus from the husband. Such a condition of affairs frequently comes under the observation of the gynecologist and is a common cause of operative procedures. In many of these cases the husband has been previously infected by gonorrhea which, in many instances without his knowing it, still lurked in some part of his genito-urinary organs at the time of his marriage;

which possibility only again emphasizes the etiological importance of the gonococcus. I will tabulate for you the following axioms :

Gonorrhea is characterized by a specific micro-organism, the gonococcus of Neisser. This specific diplococcus is never present in the healthy genito-urinary tract of the male or female.

Inflammations of the genito-urinary organs of both sexes are frequently produced by causes other than the gonococcus of Neisser.

A positive diagnosis of gonorrhea can not be made until the presence of this specific diplococcus has been demonstrated in the discharge.

Both sexes, having had a previous gonorrhea, may become tolerant to the presence in their genito-urinary organs of this diplococcus, which, however, when introduced into the healthy genitals of a male or female, will usually produce an acute or subacute gonorrhea.

CHAPTER XI.

COMPLICATIONS WHICH OCCUR IN GONORRHEA.

The complications which occur in gonorrhea are numerous, and some of them, as previously stated, are of a very serious nature. Any part of the genito-urinary tract and various other regions of the body in both sexes may be invaded by the gonococcus. Only the more common complications, however, will be described here.

The first to be considered is **balanoposthitis,** which is an inflammation of the glans penis and the mucous membrane of the prepuce. *Balanitis is an inflammation of the glans penis alone, while posthitis means an inflamed state of the mucous membrane of the prepuce.* However, as they usually occur in combination, the condition will be described under the name of balanoposthitis. *Gonorrheal pus* acting as an irritant to this region is frequently a cause of inflammation. This is particularly the case in those who are uncleanly or who have a redundant foreskin. *Chancroids, syphilis,* and various forms of *irritating menstrual and leucorrheal discharges* in the female may also *cause balanoposthitis.*

Microscopical examination of the secretion, combined with the history of the case, will usually clear up any doubt as to the primary cause of the disease. The affection is characterized by *intense redness* of the parts, and is attended with *slight excoriations* which may easily be mistaken for chancroids or for mucous patches; but their superficial

character and the readiness with which they yield to the simplest treatment will differentiate them from the former, and the *absence* of concomitant *symptoms*, as well as of all *history* of *syphilis*, will exclude them from the category of syphilitic manifestations. They usually appear as mere erosions of the mucous membrane, and seldom, unless irritated, are they covered over with any secretion. If a pellicle form over the abraded points, it can be readily removed.

In **phimosis** the foreskin is incapable of retraction. Men with redundant or tight foreskins are more likely to suffer from phimosis. This condition frequently makes the diagnosis and treatment of gonorrhea very difficult, and when it is extreme and continues unrelieved, sloughing of the parts may ensue. Besides *gonorrhea* as a cause for this disease, *chancroids*, the *initial lesion of syphilis*, and, occasionally, a simple *balanoposthitis* produce a similar condition. It is extremely difficult in many of these cases of phimosis to determine the specific cause of the trouble, because the foreskin is usually so inflamed and swollen that a view of the meatus can not be obtained. In all instances we should ascertain as soon as possible whether or not the discharge comes from the meatus, inasmuch as the treatment of the case depends largely upon the determination of this point.

Usually combined with a gonorrheal phimosis we have, in addition to the discharge from the urethra, an inflammation with a *discharge of pus* from under the foreskin. This secondary condition is caused by the backing-up of the gonorrheal pus, resulting in an involvement of the whole foreskin and glans. We occasionally find a *chancroidal* or *syphilitic* infection of the glans and foreskin combined with a gonorrheal discharge from the urethra.

To make a diagnosis we should carefully *syringe* out the foreskin, and direct the patient to *urinate*, when, if *the urine thus voided is cloudy, the discharge comes from the urethra.* Phimosis is usually *painful*, particularly during the act of urination, and the whole *penis* occasionally becomes *edematous* and *enlarged* to twice its natural size.

Paraphimosis is a condition of persistent retraction of the foreskin behind the glans. Here the meatus is exposed, so that the question as to the source of the discharge is not raised. This complication is more frequently seen in the early stage of gonorrhea, particularly so in cases of men with short foreskins. If the *swelling* be very *severe* and the constriction behind the glans very tight, *sloughing* and even *gangrene of the penis are* liable to occur. The *edema* is usually very *marked* and extremely *painful;* the *glans* becomes *purple*, the *temperature* is *reduced*, and the parts may *slough* from mechanical obstruction to the circulation.

Inflammation of the Glands of Littré and of the Lacuna Magna.—These glands are situated in the anterior urethra, with the openings of their ducts pointing toward the meatus. They occasionally become *diseased* in *gonorrhea*, and may give rise to a very persistent discharge. With the endoscope the openings of the ducts can be seen, which by the application of a little external pressure may be made to discharge pus. *The possibility of a discharge of long standing having its origin in one of these little glands should never be overlooked* when searching for the source of an obscure urethral discharge.

Peri-urethral Abscess.—Sometimes along the course of the urethra one or more points become *hard* and exquisitely *tender*, which after a time *soften* and *break down*, discharging a quantity of pus. The presence of these abscesses is determined by palpating the floor of the urethra, on

which deep-seated kernels may be felt intimately associated with this canal.

A complication of this kind is caused by the invasion of the cellular tissue outside the urethral wall by gonorrhea. It may occur in any portion of the urethra, but is more frequently found at the *frenum*, the *penoscrotal angle*, and the *perineum*. In most cases the inflammation presumably reaches the part by extension along the ducts and mucous follicles of the urethra. When present in the *perineum*, these abscesses usually *open externally*. There may be *several* of them present at one time. Whenever possible, it is best to *open* them into the *urethra*. They may attain the *size of a hazelnut*, and in some cases they are very *persistent* and *obstinate* to all form of treatment.

If a man has once been affected with these peri-urethral abscesses, he is more likely to have a complication of this kind follow another attack of gonorrhea. In some patients the disease becomes quiescent, but not really cured, and it is liable to light up again on slight provocation. This is especially true in those persons with a tubercular diathesis.

The improper use of urethral instruments may also cause urethral abscess; occasionally *stricture* follows, and in some cases *urinary extravasation* results.

Peri-urethral abscesses are usually ushered in by a *chill* and slight *rise* of *temperature*, speedily followed by the appearance of *pus* in the swelling, which may attain a large size. These often press upon the urethra in such a way as to diminish the calibre of the canal and *interfere* seriously with the act of *micturition*.

One of the commonest complications of gonorrhea in the male is known as **chordee**, which is a painful curvature of the penis during erection. This may take place in

three ways : with the concavity looking downward, upward, or sideways, and is due to an exudation of lymph into the corpus spongiosum or the corpora cavernosa. This distressing symptom comes on only during erection, and seems to be particularly favored by the heat and warmth of the bed. Sometimes the amount of inflammation and distortion which occurs is so great as to produce *free hemorrhage* from the urethra, leading to temporary relief, but so soon as the local effect has passed off, the chordee returns as vigorously as ever.

Cowperitis is an inflammation of the two small glands situated anteriorly to the prostate, and whose ducts, each about one inch long, open into the anterior part of the membranous urethra. These little bodies are occasionally involved during the course of a gonorrhea.

Like the glands and follicles of the urethra, their function is probably to assist in lubricating this canal. From the fact of their being surrounded by the compressor urethræ muscle they frequently cause considerable disturbance when acutely diseased. *They may be involved in an inflammation of the prostate or they may be infected alone.* Usually only *one* is *inflamed* at a time, but if the case be seen late in the attack, the whole perineum may be so sensitive and swollen that it is difficult to decide this point.

They are situated in the perineal region, one on each side of the urethra. With one hand over the perineum and a finger in the rectum they can usually be differentiated from a peri-urethral abscess, which is always, in this region, in the middle of the urethra.

Injury to the perineum, as in *horseback-riding*, improper use of urethral *instruments*, and *tuberculosis* may cause cowperitis. When this is the result of one of the above

causes, there has usually been an antecedent inflammation in one of the glands or its duct.

The symptoms are great *discomfort* and *frequent urination*, owing to the position of the glands. There will be marked *pain*, produced by any pressure over the perineum. The *stream* may be much *impeded* by mechanical obstruction of the urethral canal. As pus forms there will be a *chill*, *throbbing* of the perineum, *increase* in the size of the swelling, and general *constitutional symptoms*. In some instances an *abscess* of Cowper's gland opens externally, discharging a quantity of pus, and heals kindly, but in a majority of cases troublesome *cicatrices* form which have to be remedied by an operation. In many instances the inflammation becomes chronic, lighting up fresh attacks on slight provocation. In this way a *chronic urethral discharge* may be continued for a long time, proving *obstinate* to all treatment.

Prostatitis.—The prostate surrounds the neck of the bladder, is about the size of a horse-chestnut, and is composed of muscular and glandular tissue enclosed in a firm fibrous capsule. The glandular substance is made up of numerous follicles, which open into elongated canals, these in turn terminating in the urethra by fifteen or twenty excretory ducts.

The function of the prostate is genital. By the contraction of this body acting with the seminal vesicles to which the upper portion is attached the semen is expelled during an emission, the follicles of the prostate secreting a fluid which adds to the volume of the semen at the moment of ejaculation. The ejaculatory ducts open by two minute orifices into the floor of the prostatic urethra.

Gonorrheal infection of the prostate occurs *in a fairly large percentage of cases*, and with the inflammation of the

prostate is often associated a diseased condition of parts adjacent to this organ, the capsule and follicles of the prostate being the parts usually involved, and not the muscular tissue.

Pelvic inflammation, seminal vesiculitis, etc., should be carefully differentiated from a true prostatitis. The first symptom which the patient notices is a sensation of *uneasiness*, rather than of actual pain, in the perineum, together with a feeling of *weight* and *tension* in the part, and this is particularly noticeable when he sits down. This symptom gradually increases until both the erect and sitting postures are painful, and the patient only finds relief when lying upon his back. Connected with this is a still more unpleasant symptom, viz.—a *constant and urgent desire to pass water*, which comes upon the patient so *suddenly* and *violently* that, no matter where he is, he has to *respond at once* to this call of nature, and the urine is *voided* quite as frequently *in his clothing* as out of it. After the water is ejected—and nearly always this occurs in *very small quantities*—there is a violent *straining* and *bearing down*, which is present not only at the neck of the bladder, but in the rectum as well, as though the bladder and rectum needed instant evacuation. This is known as *tenesmus*, and may be so violent as to cause *hemorrhoids* or a *prolapse* of the bowel.

Upon examination through the rectum the prostate will be found enormously *enlarged*, encroaching upon the bowel, and most *exquisitely tender*, and this inflammation may pursue one of two courses : either the symptoms entirely *subside* and the disease passes off, or an *abscess* of the prostate may result. If this latter occur, it terminates either by *breaking into* the *urethra*—the most favorable of all courses —or else it opens into the *rectum*, producing a *rectoprostatic abscess ;* or if, as sometimes happens, the abscess opens

in both directions, a *fistula* between the urethra and rectum is established which is extremely difficult to cure.

The examination of the urine is important as a means of determining the location of the disease. The patient should be directed to pass his urine in two beakers, *when, if the prostate or prostatic urethra is involved, the first and last portions are equally cloudy*, and this is particularly true when there is a large amount of pus. On the other hand, if the *anterior urethra alone is involved, the first portion of urine voided will be cloudy, while the second will be nearly clear.*

These observations apply more to *acute* than to chronic inflammations, where the secretion is often small in quantity. In cases of *posterior urethritis with slight secretion the first urination would be cloudy and the second practically clear*, as in anterior urethritis; *but in chronic inflammation of the prostate and of the prostatic urethra the mucous shreds are usually long and stringy, while those from the anterior urethra are smaller and finer.* In chronic inflammation of the prostate the *urine*, with the exception of the flocculi, *will usually be clear.*

Of course, there are no hard-and-fast rules, but an examination of the urine is generally of assistance in determining the part involved.

Epididymitis.—The epididymes consist of a large upper part, called the globus major, and a small lower part, the globus minor, the two being connected by the body. The globus major is composed of efferent ducts which convey the spermatozoa from the testis to the globus minor, where the vas deferens begins, and by means of which the secretion is carried to the seminal vesicles.

After gonorrhea has lasted for *three or four weeks*, invading the *deeper* portion of the *urethra*, the patient may complain

of *uneasiness* and *pain* in the *testicles*, which upon examination are found to be *enlarged* and *tender*. Although the name of orchitis has been given to this affection, the *body of the testicle itself is not implicated, but only the epididymis*, which in this stage of the disease is attended by the usual symptoms of *pain, redness, and swelling*. You remember, when we were discussing syphilis, I mentioned a form of epididymitis which occurs in that disease, and I wish to call your attention to the diagnostic points of difference which obtain between the two varieties. *In syphilitic epididymitis* this body is *indurated*, but is *devoid of pain or redness;* indeed, so *little uneasiness* is there that the part can be *freely handled without inconvenience* to the patient; but in the gonorrheal variety the epididymis is *red, swollen, and exquisitely tender;* so much so that the mere contact of the bedclothes is sufficient to excite *pain* and *discomfort*, and I need hardly add that *free handling of the part is impossible*. This affection generally comes on about the *third or fourth week* of the duration of *the clap*, and during its continuance the *urethral discharge almost entirely disappears, to reappear, however, upon its subsidence*.

The acute inflammation lasts from *seven to ten days*, at the expiration of which time it gradually subsides, leaving the *epididymis indurated*, although *not very sensitive*, and this induration may be further complicated by the effusion of fluid between the two layers of the tunica vaginalis, constituting what is known as *hydrocele*. Under proper treatment the *fluid is absorbed*, and the swelling of the epididymis diminishes; indeed, under very favorable circumstances *it may entirely disappear;* but this result is not always attained. Only too often the *epididymis, as well as the vas deferens, is permanently blocked up*, preventing the egress of the spermatozoa from the affected testis, and leading to *partial sterility*.

Instead of resolution, one other course may be pursued : *the part may suppurate ;* and when it does, *destruction of the epididymis*, and sometimes of the *testicle on that side*, follows.

The disease is usually *unilateral*, one testis being affected pretty nearly as often as the other ; but sometimes it is *double*, when, of course, it becomes *more serious*, inasmuch as the *induration* and *obliteration* of the canals of the *vasa deferentia* lead to *permanent sterility*. I beg you will distinctly understand the *difference between sterility and impotence :* the sterile patient is not rendered impotent—he is capable of perfect connection even to the emission, but the semen ejected is devoid of spermatozoa—in other words, he is *incapable of procreation ;* while the impotent man is *incapable of connection*, although his semen is fruitful. *When one testis only is affected, the patient can still be the father of children, but only as regards his sound testicle.*

The inflammation may extend from the testis to the *spermatic cord*, and when this is the case, the patient complains of *pain* running from the testis to the lumbar region, with a *dragging sensation* upon the cord, as though traction were being exercised upon it. An examination reveals a *thickened condition* of this portion of the genital apparatus, which is sometimes enlarged to the size of a goose-quill, and *excessive tenderness*, with *inflammatory redness* extending up as far as the ring. Treatment usually causes these acute symptoms to abate in from *five to ten days ;* the *thickening*, however, *lasts longer*, until finally it *entirely disappears*, and the cord resumes its normal condition.

In rare instances resolution *does not take place*, but instead of this *suppuration occurs* somewhere along the course of the cord external to the ring. When this takes place there is danger of *atrophy of the testis*, resulting from obliteration of the spermatic vessels.

Seminal Vesiculitis.—The seminal vesicles, two in number, are pyramidal shaped pouches situated one on either side between the base of the bladder and the rectum. They are a little more than two inches in length and a quarter of an inch in breadth. They serve as reservoirs for the fluid secreted by the testes, and also secrete a fluid accessory to that of the testes. Each is a tube, but so convoluted that it is like a little sacculated bladder. The vesicles are shaped something like the letter V, with their broad ends diverging backward from the base of the bladder, and their narrow ends, which come nearly in contact with each other, converging as they are joined by the vasa deferentia, which at this point lie on their inner sides. After the junction of each seminal vesicle with the corresponding duct of the vas deferens the two continue to form the ejaculatory duct. This duct, one for each side, is about three-quarters of an inch long and ends in a slit opening into the lower portion of the prostatic urethra.

The vasa deferentia are enlarged at their upper ends, forming the ampulla of Henle, to unite on each side with the corresponding seminal vesicle. They convey the secretion of the testes from the lower portion of the epididymes to the corresponding seminal vesicle.

The gonococcus is the cause of the majority of diseases of the seminal vesicles. Other micro-organisms occasionally act as causative factors in affections of these organs, and in some patients a *simple or a gonorrheal inflammation of the vesicles is followed by tuberculosis.* The gonorrheal *infection* may be twofold: *direct or indirect.* In direct infection the gonococci may be forced into the ejaculatory ducts by improper methods of treatment, such as violent forms of irrigation, the unskilful use of instruments, etc., and, in some few instances, they may directly invade these ducts

without any apparent exciting cause. In indirect infection we have an inflammation of the deep urethra which gradually involves the mouths of the ejaculatory ducts, and thus extends into the seminal sacs, when it becomes chronic and resistant to treatment.

In certain urethral discharges which go under the name of chronic *gonorrhea* or *gleet*, a pathological condition of the *seminal vesicles is the cause of the secretion*, and until the disease in the seminal sac is removed by treatment, the case remains incurable.

In *health* the seminal sacs are felt by rectal examination as soft, smooth bodies freely movable under the finger, and *not specially sensitive*, but in *disease* they are usually *quite tender* and are frequently *much enlarged.*

At first manipulation will express but little of their contents, which should be repeatedly examined under the microscope, as in this way we can follow the progress of the case. The spermatozoa at first appear macerated and motionless, but later on, as the case improves, more secretion is expressed from the vesicles and the spermatozoa gradually present normal formation and action.

The condition just described is one where the seminal vesicle alone is involved. When, on the other hand, the inflammation extends outside of the seminal sac and there is a *perivesicular inflammation*, we have a much more *serious* condition to deal with. This perivesicular thickening and inflammation may be so marked that the *outlines of the vesicle are lost*, the region between the bladder and rectum becomes involved in the inflammatory exudation, and the seminal vesicle is *bound down and immovable.*

This infiltration of the surrounding parts may extend into the capsule of the prostate, which condition is commonly mistaken for a true involvement of this organ. The inflam-

mation just described is of a *low grade*, and until recently has received but little attention.

Tuberculosis of the seminal vesicles will usually, upon rectal examination, impart a *nodular feeling* to the finger, and rectal manipulation will be followed by considerable *pain* and an *increase* of the symptoms generally.

Cystitis.—Cystitis has occurred from the invasion of the normal vesical mucous membrane by the gonococcus, but such a condition is so *rare* that its treatment need not be considered here.

When *cystitis* follows a *gonorrhea* of the urethra, it is usually the result of a *mixed infection*, the *bacillus coli communis*, the *streptococcus*, or the *staphylococcus*, and *not* the *gonococcus*, being the cause of the cystic inflammation; indeed, evidence shows that the *gonococcus*, *when not combined with other bacteria or with a previous abnormal condition of the genito-urinary tract, is a rare cause of cystitis.*

Invasion of the *ureters* and *kidneys* by the gonococcus has also occurred, but *rarely*. It is usually associated with other pathological conditions, such as urethral *stricture*, *mixed bacterial infection*, or some abnormal state of the urinary tract, hence I shall merely mention the fact that such a complication may result from a primary invasion of the urethra by the gonococcus.

Stricture.—The urethra in the average adult male is about eight inches long. It is divided into the penile urethra, about six inches long; the membranous urethra, three-fourths of an inch long; and the prostatic urethra, about 1¼ inches in length.

When examining the urethra with instruments, it is well to remember that this canal is *not of uniform calibre* throughout, but varies very much in its different parts.

At the meatus and membranous urethra the canal is

smallest, so that variations in size of the normal urethra must not mislead us into the belief that we are necessarily dealing with stricture.

Spasm of the urethra, sometimes caused by the introduction of a small, pointed instrument in ignorant hands, *may simulate a true stricture* in sensitive persons.

Urethral stricture is of slow formation and is a not uncommon result of chronic gonorrhea.

Toward the *end* of a clap, when the *discharge* has become *thin* and *colorless;* when the anterior portion has entirely recovered its normal condition while the posterior portion of the urethra still remains diseased, a condition of affairs arises known as *chronic gonorrhea.* Here the *discharge*, instead of being continuous, as during a clap, is only *seen on rising in the morning as a single drop of white or colorless matter*, which does *not stain* the linen, and which is *not* accompanied with any *pain during micturition.* This drop of fluid is usually obtained only *upon deep pressure* and *during the day is absent.* If the patient commit any excess in eating or drinking or if he indulge in immoderate coitus, *this drop may increase to a slightly purulent* discharge, which lasts for a few days, and then subsides to its former condition. *Examination* with a bulbous bougie may reveal in the membranous or prostatic portions of the urethra *one or more localized points of tenderness*, which offer a slight resistance to the passage of the bougie, and which usually *bleed.* This is *due* either *to a granular and thickened condition of the urethra*, the incipient stage of stricture, or else to a *slight stricture* which has already formed.

Remember, therefore, that some cases of chronic urethral discharge are dependent upon stricture; hence when called upon to treat a *persistent discharge*, first *examine* the *urethra* and, failing to find anything abnormal in the canal, *examine*

for disease of the *seminal vesicles*. If we find no disease of the seminal vesicles nor any evidence of stricture, the discharge is probably due to *inflammation of the deep urethra*, attended, perhaps, with slight *granulations* of the mucous membrane, which will require different treatment from what we would use if dealing with stricture. *Urethral stricture and disease of the seminal vesicles may occur in the same patient.* This combination, however, is *not common*.

I have purposely omitted speaking at length on stricture, as this form of disease belongs more properly to the domain of genito-urinary surgery than to venereal medicine; and I only mention it here to show you how it may act as one of the underlying causes of chronic gonorrhea.

Lymphangitis and Adenitis.—If the inflammation be very acute, the *lymphatics and the inguinal glands* in both sexes are implicated. In the male the lymphatics running along the *dorsum of the penis* may be felt as a hard line, the size of a large goose-quill, extending from the fossa glandis to the crura penis, and are there lost in the inguinal chain of glands. Their course may often be followed by the eye, appearing as a *broad, red line overlying the inflamed lymphatics*. After a while the inflammation subsides, and the lymphatics are no longer apparent to the eye or to the finger, or else *suppuration* occurs at one or more points along their track, which, upon evacuation of the pus, usually heal readily.

This inflammation may extend to the *inguinal glands*, when we have in one or both groins a *tense, brawny, and inflamed swelling, painful* to the touch and a *hindrance* to locomotion. This enlargement may be ushered in with a *chill and a slight elevation* in *temperature*. Sometimes the inflammation *subsides without ending in suppuration*, while at other times *pus forms* within the body of the gland and an *abscess* is the result.

Gonorrheal rheumatism, when it appears, generally comes toward the *end* of a clap,—although there are exceptions to this rule,—and invades *joints* in preference to other parts—usually the *knee, the elbow, and the wrist.* Occasionally very *acute* and attended with a marked degree of *inflammation,* its general course is a *subacute one, with swelling and pain.* Shortly after the access of the disease *effusion of fluid* takes place into the joint, accompanied with an *increase of pain;* continuing in this condition for a time varying from *two weeks to several months* the *fluid is gradually absorbed,* and the joint may be restored to its former usefulness. Unfortunately, however, this is not always the case; *ligamentous adhesion* takes place, and *anchylosis, partial or complete,* is the final result. I know of no cases in the entire range of venereal affections more disheartening and annoying than those of gonorrheal rheumatism, both on account of their *chronic course* and because the results of treatment are but too often *unsatisfactory.*

Next to the joints in point of frequency of attack the *tendons* come, and then the *muscles.* Of the former, the *tendo Achillis* is the one most likely to suffer, and when it is attacked, the disease runs a *long and painful course,* not so much from the swelling, for this is often trifling, as from the *steady aching* of the part and the consequent *impediment to walking.* In very severe cases a *permanent contraction* of this tendon results, producing a talipes equinus, for which tenotomy is the only relief.

Another peculiar symptom occasionally met with in this stage of gonorrhea is a *persistent, boring pain in the os calcis,* unattended by redness or any enlargement of the bone or thickening of the periosteum, which is *chronic* in its course, and very apt to occur in *nervous men.* I recall one case where it had *lasted for several years.* Indeed,

I am inclined to regard it as a *neurosis rather than a periostitis.*

Until within a few years it was believed that *the heart* was not implicated in gonorrheal rheumatism, differing in this respect from the ordinary form of rheumatism. This is, however, a fallacy; the *pericardial sac* as well as the *valves of the heart* are affected. The patient complains of *precordial pain*, attended sometimes with *dyspnea*, when an examination reveals an *effusion into the pericardium*, and the *heart-sounds are muffled.* As this subsides a *souffle* is heard at the *aortic and mitral valves*, sometimes with *regurgitation.*

Gonorrheal ophthalmia has been divided in many treatises on venereal diseases into two varieties: one due to the presence of *gonorrheal pus in the eye;* the other, analogous to what take place in gout, an *iridoscleritis* rather than a true ophthalmia. The latter is the only bona-fide disease which belongs to gonorrhea, the first one, although by far the more serious, is nothing more than a purulent ophthalmia due to an accidental infection.

The first symptom of which the patient complains is a *sensation of weakness* in the eye; this is very seldom associated with *photophobia*, although occasionally it may also be present. Upon examination the *conjunctival and sclerotic vessels* will be found somewhat *congested*, the *iris* slightly *infiltrated*, with a *sluggish pupil*, the anterior chamber distended with *fluid, containing occasionally some flocculi.* The *tension* of the eyeball is also *increased.* As the disease progresses the *anterior capsule* of the lens, as well as *Descemet's membrane*, becomes *opaque*, and the *cornea loses its transparent look.*

This *condition lasts* for *some days*, when, under proper treatment, the symptoms subside; the iris, the capsule of the lens, and the cornea resume their normal appearance,

and the disease passes off, leaving the eye none the worse for the attack.

Not so, however, with the purulent variety. Here the situation is *very grave*, and unless active measures are speedily adopted the *eye is irretrievably injured, the contents of the globe being evacuated in forty-eight hours or even in less time.* This disease is due to conveyal of the pus from the genitals to the eye, and the *right* is the one *most frequently* affected. The symptoms noticed are *lachrymation, photophobia, intense congestion of the conjunctival vessels, together with a thick, purulent discharge.* Both lids speedily become *edematous and enormously swollen;* so much so as to close the eye completely. If the lids be gently separated, the *conjunctival and palpebral mucous membranes will be found swollen and perfectly scarlet in hue.* The former, from the swelling, is very much elevated above the cornea, leaving this latter embedded in the inflamed tissue, like a watch-glass in its setting. This swelling is known as *chemosis.*

The *cornea*, curiously enough, is at *first unaffected*, but from pressure and interference with its nutrition it rapidly *becomes opaque, pus forms* in the interstitial layer, which, pushing through the epithelial covering, leaves behind *ulcerations of the cornea;* this tissue softens, and the tension of the eyeball being great, the *lens and vitreous humor are evacuated* through the opening; *in other words, the eye is completely lost.*

While this is going on an abundant purulent secretion is poured out over the cheeks, producing *excoriation of the skin* of these parts. Occasionally the pressure from the edema upon the lids is so great that *gangrene* ensues, *sloughing of the lids* occurs, and greater or less deformity follows.

Under *prompt treatment*, thoroughly carried out, the *eye*

may be saved; but *opacity*, with some *ulceration of the cornea*, nearly always results. The edema subsides, the chemosis disappears, and the conjunctival congestion abates in intensity. A *thickened and granular* condition of the palpebral mucous membrane remains, however, for a long time after, which requires steady and constant care to cure.

Warts.—In addition to the above-mentioned complications which occur in the course of a clap, there is one disease, commonly known as *venereal warts*, which, although not strictly a complication, is frequently found with gonorrhea or else as an indirect result. The term *venereal* warts is another one of those misnomers which abound in the literature of venereal diseases; *for although sometimes found with a gonorrhea, they may be absolutely and entirely independent.* They are usually seated, in the male, upon the mucous membrane of the *glans penis*, *the inner lamella of the prepuce*, upon the *scrotum*, and sometimes upon the *perineum* and the *pourtour of the anus;* in the female, upon the *mucous membrane of the labia majora et minora*, upon the *perineum*, and about the *anus*. They occur as papillary excrescences, raised above the surface of the mucous membrane, exceedingly *vascular*, *bright red* in color, and, when favored by heat and moisture, are of *exuberant growth.* They are, indeed, nothing but hypertrophy of the natural papillæ of the parts, and are particularly prone to attack those who are *careless of their personal cleanliness.* They may attain to *enormous size*, and I have seen cases where the head of the penis was transformed into a *huge bulbous mass*, resembling a cauliflower, entirely obliterating all semblance of the ordinary virile member. Their *shape* varies somewhat with their location, and when they are compressed,—as, for example, when seated on the perineum or in the cleft of the nates,—they grow in the shape of a

cockscomb, being *long, pointed, and serrated.* In the female we find them most exuberant, and they sometimes extend from the *anus* over the *perineum* and *vulva*, up even into the *groins*, assuming the most grotesque appearances, and from attrition and dirt give rise to a *very offensive and acrid discharge.*

Herpes, although not strictly venereal in its origin, is another manifestation which it behooves you to know something about, inasmuch as it is frequently confounded with superficial chancroids or mucous patches of the glans penis. It appears upon the mucous membrane of the prepuce and glans penis as a *group of minute vesicles, five or six in number, seated upon a slightly inflamed base.* These vesicles rapidly coalesce, and in the course of *twenty-four to thirty-six hours* are *denuded of their epithelium*, when they present *superficial erosions*, which are sometimes covered with a *whitish pellicle.* If seen early in their course, before the vesicles are broken, there will be no difficulty in recognizing the disease; but when the vesicles have become eroded, it is sometimes extremely difficult to distinguish them from *superficial chancroids* and *mucous patches.* The *nonauto-inoculability* of herpes, the *rapidity* with which it *recovers* under simple treatment, its *nontendency to spread*, and its *history*, will serve in most cases to prevent you from mistaking it for the first; and the *absence of all syphilitic history* and concomitant *symptoms of the pox* will save you from mistaking it for the second class of these diseases. It is sometimes due to *local causes of irritation*, but is quite frequently associated with *nervous* and *digestive disturbances* induced by overindulgence in eating and drinking and by mental excitement.

Gonorrheal complications in the female involve the *cervix uteri* and, by extension, the *uterine cavity*, the *Fallopian tubes*,

the *ovaries*, and, occasionally, the *peritoneum*, all of which may be attacked.

Cervicitis and **endometritis** may occur at any time in the course of a gonorrhea and are *always serious*. This inflammation of the neck and body of the uterus commences with a feeling of *congestion* in the region, attended by *severe bearing-down pain* and disturbance of the *menstruation*, which is *usually scanty and difficult*, and is accompanied with a *discharge* from the cervix, at first *mucopurulent* and then *entirely purulent*. If a rectovaginal examination be made the uterus will be found *swollen* and *tender*, and pressure above the pubes excites *pain* attended with *increase of temperature*, a *full pulse*, and *general* constitutional *disturbance*. The inflammatory process usually involves the *entire uterine cavity* and, as already stated, may extend to the *Fallopian tubes*, the *ovaries*, and the *peritoneum*.

CHAPTER XII.

TREATMENT OF GONORRHEA AND ITS COMPLICATIONS.

Of all venereal diseases which require treatment at the hands of the surgeon gonorrhea is the most uncertain and disagreeable. The number of nostrums sold and the various methods of treatment employed to cure a clap are innumerable, which only goes to prove that the infallible and rapid cure-all for gonorrhea so frequently written about has not yet appeared and probably never will.

Before taking up the various steps in the treatment of gonorrhea it is well to remind you that this inflammation has something of a self-limited course, and our object should be, first, to promote the comfort of the patient; second, to ensure the elimination of the gonococcus, and third, to avoid complications. The so-called *abortive treatment is not at all advisable as a routine method, and you had better leave it alone*, although in certain selected cases, in the hands of a skilled specialist, a case *may* be cured in a few days from the time of onset. This treatment must be used on the appearance of the *first local signs*, otherwise it is of *little avail*, the patient being frequently seen by his medical adviser, so that any unfavorable symptom may be at once detected. The most radical form of abortive treatment is that in which the surface of the urethra is wiped thoroughly dry through the endoscope with absorbent cotton, first washing out the canal with a solution of dioxid of hydrogen (10 to 15 volumes), and then applying a 5 to 10 per cent.

solution of silver nitrate on a cotton tampon to the urethra for half an inch beyond the diseased area. If necessary, this may be repeated in forty-eight hours.

Another method, much milder and which is frequently successful, is to wash out the anterior portion of the urethra with hot water ; then, with the aid of an Ultzmann's syringe introduced to within an inch of the bulbus urethræ, to inject the medicated solution gradually into the canal, at the same time gradually withdrawing the instrument. Protargol, argentamin, and argonin in 5 to 10 per cent. solutions have been successfully used in this way. After the first solution has been introduced in the manner just described and kept in the urethra from five to ten minutes another syringeful is injected in the same way, but is not carried so far into the canal. The first few injections will indicate if this latter method is likely to prove successful. The second procedure is not so radical as the first one, nor is it usually attended with danger. The treatment should be continued for fully *ten days after all signs of gonorrhea have disappeared*, gradually increasing the interval between each injection.

The object of both of these methods is rapidly to eliminate the gonococci before they have burrowed deeply under the surface of the urethra.

In treating inflammations of the urethra it is well to remember that we are dealing with a dual symptom, a very sensitive and easily infected genital apparatus connected with the urinary one. Were this not the case, the treatment of gonorrhea would be much simpler ; hence it is of importance to exercise due *care and persistence* in the use of medications, which are of two-fold application : the one, continuous,—viz., recurrent irrigations,—the other, intermittent,—*i. e.*, syringing. Thus if the attack be an acute

one, *no local medication or interference is admissible. Don't meddle with things you ought to leave alone;* but so soon as the acute symptoms have subsided, you may and should institute local treatment, and then the quicker you do so the better are the chances of recovery for your patient.

Part of this local treatment you can relegate to the patient and part you should keep in your own hands. *I do not believe it good policy to allow the patient to use recurrent irrigations himself.* In my experience he is as apt to do harm as good; because the hydrostatic pressure employed may be too great and he may force the injection too rapidly and with too great power, thus injuring the urethra. *You may, however, leave the injection by syringe in his hands.* There, unless he intends injury, he can do no harm to himself under proper guidance by the surgeon. I do not believe that a careful and well-instructed surgeon will ever do his *patient harm by the recurrent irrigations*, either by *direct injury* to the urethra, by *forcing the gonococcus backward*, or by *breaking down the resistant power of the constrictor urethræ muscle. If he does the first and the last, he is unfit to practise;* and as *for the danger attending the second manœuvre, I believe it to be absolutely nil.* The gonococcus is a tenacious microbe, and not easily swept from its abiding-place; moreover, when it is detached,—and this is what your treatment aims at,—it is *swept away from and out of the urethra* by the recurrent flow, *not forced back* into the deeper parts of the canal; and if the injection be medicated with a germicide, such as the bichlorid of mercury, you have taken all prudent measures to ensure the destruction of the gonococcus.

Sometimes this form of medication is highly successful, particularly if used as early as the inflammatory conditions will allow; but I frankly admit that I consider it only an

adjuvant and it can not be considered as the *mainstay in the treatment.*

The various *medicated* solutions to the anterior and posterior urethra are of great service, and are the best methods of treating gonorrhea. The manner of using them will be considered later on.

The *internal use of drugs* to assist in the cure of the case is of *minor importance*, much less so than the local treatment.

Although gonorrhea is considered a *local disease*, *constitutional* symptoms are not very uncommon, and sometimes, though rarely, a case may present symptoms of gonorrheal *septicemia.*

Remember, then, that besides treating the local condition in the urethra we must be on the watch for complications in remote parts.

Whenever possible, insist that the patient secure *absolute rest in bed* during the acute onset of the disease, because the course of the disease would be much *less painful*, would have *fewer complications* and a *shorter duration*, if all patients could be kept in bed for the first ten days of a clap. Unfortunately, most patients, for obvious reasons, decline to follow such advice. Failing that, the patient should be instructed to *keep as quiet as possible*, his *bowels* should be carefully regulated, and precise directions be given as to his *diet and mode of life. All sexual excitement must be carefully avoided, and alcohol in any form should be strictly forbidden.* A warm *sitz-bath* at bedtime during the acute stage often has a *soothing* effect and *promotes sleep.*

During the *acute inflammatory stage*, when febrile symptoms are present, when the *penis* is *hot*, *inflamed*, and *edematous*, when the *mucous membrane* of the parts is *congested* and there is *eversion* of the lips of the meatus with a *scanty* mucous or mucopurulent *discharge*, your first object

should be to relieve these symptoms, and the use of *injections* in this stage is entirely *inadmissible*. For the relief of the febrile symptoms I know of nothing which will take the place of *aconite*, in small doses frequently repeated, thus :

℞. Tinct. aconit. radic., ... ♏j–ij.
Sig.—In a little water every hour.

To relieve the *edema and swelling of the penis* use *cold-water dressings*, or wrap the organ up in cloth wet with the *lead-and-opium wash*, which is administered as follows :

℞. Liq. plumb. subacetat.,
Tinct. opii, ... āā ℥j
M. Aquæ, ... q. s. ad ℥viij.
Sig.—Locally.

These *symptoms* usually *disappear* in the course of *forty-eight to seventy-two hours*, when the discharge becomes *purulent*, *abundant*, and associated with a frequent *desire to pass water*, *not* from any invasion of the neck of the *bladder*, but simply from *reflex action* due to local irritation within the *first inch* of the urethra.

The *diet* during this *stage* should be of the *lightest*, such as milk, milk porridge, gruel, and the farinaceous articles of food.

Now is the time to begin with injections. *Antiseptic preparations are best in the earlier, and simple astringents in the declining, stage of the disease.* All kinds of urethral irrigation should be used *hot*, as they act more effectively. Two methods of irrigating the anterior urethra are employed : one is to use a large quantity of hot solution, perhaps a quart or more at a time. This plan is excellent, but somewhat complicated, and for various reasons many patients can not use it. The solution, properly prepared, is placed in a receptacle, as a fountain syringe, suspended two or three feet above the patient's head, the man lying on his

back; by the aid of a blunt glass nozzle introduced just within the meatus the anterior urethra may thus be thoroughly washed out. This nozzle should have an inlet and an outlet, so as to maintain a continuous flow until the entire amount of the solution has passed in and washed out the area of the diseased urethra. This requires time and a special apparatus, and care must be exercised not to do harm to the deeper parts from overpressure. This irrigation should be made *twice* a day. In place of the glass nozzle a soft-rubber catheter introduced two or three inches into the urethra may be used, as being more easily managed.

The other method of washing out the anterior urethra is by the aid of the time-honored hand *syringe*, and is the *most* available and *simple* way for the majority of *patients*.

In using these injections there are some points to which I wish to call your attention, for upon the proper employment of this class of remedies will often depend the efficacy of the treatment. In the first place, *never use a glass syringe* if you can help it, as the fluid nearly always comes out behind the piston instead of through the nozzle, and the patient receives very little of the injection. The syringes made of *vulcanized rubber are the best*, but even some of these are objectionable, from their long, sharp nozzles. All urethral syringes used during the early stages of clap should have a *short, blunt, or conical point*, which, when introduced into the meatus by gentle pressure and the aid of the fingers, prevents any of the injected fluid from escaping.

Another very serviceable form of syringe is a *soft-rubber bulb with a blunt point*. This syringe, which should hold about six drachms, obviates all trouble with a piston, the contents being expelled by gentle pressure of the bulb; it is easily kept clean and can not get out of order. But whatever syringe is used, whether a vulcanized rubber piston one

or one with a rubber bulb, it should hold at least *four drachms of fluid*. The little pocket syringes which are sold in many shops are catch-penny affairs.

The patient having chosen a proper syringe, should be advised as to the right way to make an urethral injection. As has already been said, in most cases some *antiseptic* preparation should be employed in the early stage of the disease after the very acute symptoms have subsided. Corrosive sublimate, 1 : 10,000, permanganate of potash, 1 : 5000, nitrate of silver, 1 : 6000, and argonin in 5 to 10 per cent. solutions are perhaps the best; and they act by causing the destruction of the gonococci with which they come in contact. The patient may be directed to make a stock solution of the particular antiseptic ordered, which can then be diluted with hot water to the desired strength. These drugs also have a *secondary astringent* effect, and when used in the strength advised, are very efficient. To derive the most benefit from injections it is important that the patient should be *instructed* by the surgeon in the *use of the syringe*. The man should first *urinate*, in order to wash out as much as possible of the discharge, but if he can not, it is well to allow the first syringeful to flow immediately out of the urethra, so as to cleanse the canal thoroughly.

The syringe having been carefully charged with the solution and *all air excluded from the barrel*, the patient is then ready to take his injection, which he does in the following manner: He holds the instrument in his right hand, between the thumb and second finger, the index-finger being stationed at the butt end of the piston. The penis is held between the second and third fingers of the left hand, palm upward, the index-finger and thumb being left free to separate the lips of the urethra. The nozzle of the syringe is then carefully inserted just within the meatus,

when the end of the urethra is closed against the instrument by a gentle lateral pressure. Do *not* place the finger and thumb *above* and *below* the meatus, otherwise you will open the canal instead of closing it, and the fluid will escape as fast as it is injected; but make a gentle pressure sideways, and if this be properly done, none of the fluid will run out. Now, with the right hand gently drive the piston home, without any sudden movement, and if the syringe is in proper working order, this can be readily accomplished. This done and all the fluid deposited within the urethra, with a quick movement withdraw the nozzle of the syringe from the urethra with the right hand, while with the thumb and index-finger of the left hand still in position the patient closes the meatus. This prevents the outflow of the injection. Then, laying the syringe down, the patient with his right hand gently strokes the floor of the urethra from behind forward in order to press the fluid as far as possible into the anterior portion of the canal, which is the seat of the disease in the earlier stage. As the disease invades deeper parts this motion must be reversed in order to crowd the fluid backward. After the injection has been retained from five to ten minutes, the compression with the left hand upon the lips of the meatus may be discontinued, when a portion of the fluid will run out. The injection should *cause a slight sensation of warmth and tingling* in the canal for five or ten minutes after its use, but this should *never amount to actual pain;* if such be the case, it shows that the injection is too strong and must be diluted.

Within a few years a method of treating gonorrhea by means of *medicated bougies* has been advocated. They are made of cacao-butter, holding an astringent in minute subdivision, and are left within the urethra to melt. Experience has *not* shown me that they have any special advan-

tage over injections, and they have the *decided disadvantage of being dirty and disagreeable.*

When the discharge has very perceptibly diminished, from the subsidence of the acute symptoms, when, in fact, the disease is in the declining stage, simple *astringent* injections are very efficacious; among these the preparations of *zinc* are the most useful.

As the gonorrhea goes on to *recovery* the *gonococci diminish* in number, but the *urethra* is usually *congested*, as a result of the inflammatory process; *simple astringents give the most satisfactory results in this stage.* Of course, no hard-and-fast rule can be laid down as to the time of using antiseptic and astringent injections. *In some cases of gonorrhea the urethra will not tolerate antiseptics in the acute stage of the disease without causing severe pain, and in such cases astringent solutions must be substituted*, to be continued, if necessary, throughout the entire treatment. The following prescriptions have been found of most service. Of course, we may prescribe these preparations in powder mixed with some bland ingredient, so made up that a teaspoonful of the powder dissolved in a given amount of warm water will furnish the required strength.

℞. Zinc. sulph., ... gr. viij–xij
Aquæ, ... ℥iv.
M.
Sig.—To be injected thrice daily.

Or—

℞. Zinc. acet., ... gr. viij–xij
Aquæ, ... ℥iv.
M.
Sig.—Inject thrice daily.

Alum, either alone or in combination with tannin, as well as tannin alone, have been advised as injections, but in my

estimation they possess no advantages over the preparations of zinc. They may be used as follows:

℞. Alumin. sulph., ... gr. xx
Aquæ, ... ℥iv.
M.
Sig.—As injection thrice daily.

℞. Alumin. sulph.,
Acid. tannic. pulv., ... āā gr. x–xv
Aquæ, ... ℥iv.
M.
To be well shaken before using.
Sig.—Inject thrice daily.

One of the objections to the use of *tannin* is the persistent *stain* which it leaves upon the body-linen, but I shall shortly mention a simple way of obviating this.

An injection—a modification of Ricord's formula—is often used, and is an excellent one. It is composed of the following ingredients:

℞. Zinc. sulph., ... gr. viij
Plumb. acet., ... gr. xv
Tinct. opii,
Tinct. catechu comp., ... āā ℥ij
Aquæ, ... ad ℥iv.
M.
Sig.—As injection thrice daily.

To *obviate* the *staining* of the clothes, either from the disease or from the injections used, a *false front* may be made by pinning *to the shirt a double fold of unbleached cotton* the size of the front flap. It also has the advantage of keeping the genitals *clean* and *cool*. *Never countenance wrapping up the penis in innumerable folds of linen or cotton*, which is so often done, as this keeps the parts in a *heated condition*, *prevents* the free *exit* of the *pus* which forms in the urethra and which, from the irritation of its presence, is very prone to produce *balanitis* and *edema* of the prepuce.

Internal medication may be used with the local treatment, and consists of those remedies which are excreted by the kidneys and which contain a balsam or resin: foremost among these are *copaiba*, *cubebs*, and the *oil of yellow sandalwood*. In order to cover their nauseating taste they are given either in pill form or in capsule, in the following manner:

℞. Copaibæ, ... ℥j
Oleoresin. cubebæ, ... ℥ss
Magnesiæ, ... q. s.
Ut ft. massa. Divide into pills of five grains each.
SIG.—Three to six three times daily after meals.

If given in capsule, the balsam of copaiba, the oil of cubebs, or the oil of sandalwood is employed, each capsule being supposed to hold ten minims of these various drugs. Of them all, I can particularly commend the oil of the yellow sandalwood. Two objections may be urged against it: first, the difficulty of getting it pure; and second, its expense. If, from either of these two causes, it should not be given, the copaiba is, to my mind, the next best drug, given in pill or capsule, as already noted.

These preparations have the effect of *relieving the ardor urinæ* and of *checking* the discharge. They should always be given after meals, as they are then less liable to disturb the stomach or to produce nausea. If the patient's stomach will bear them, the effect is sometimes wonderful; but their *long* continuance is liable to produce *pain* in the region of the *kidneys* and a *deposit* in the *urine* which has been mistaken for *albumin*.

A very *simple*, at the same time *effective*, *way* of relieving the *ardor urinæ* is to make the patient *pass his urine* in a vessel nearly full of *hot water*—in other words, *pass his water under water*.

As regards *diet*, the rules must be strictly laid down, and *no deviation* allowed until the disease has entirely disappeared. Except during the acute inflammatory stage, the patient should *not be kept upon a low diet*, but ought, on the contrary, to be allowed a *good* and *nutritious* regimen. Meat, vegetables, fish, eggs, and the like may be allowed, and I beg you to remember that by half starving your patient you only tend to keep up the gonorrhea. Asparagus, highly spiced dishes, strong coffee or tea, and, above all things, every *form of alcoholic or malt beverage*, as well as *immoderate* smoking of *tobacco*, should be interdicted in the majority of cases; but if the patient has been accustomed to their use, a cup of *weak coffee* or *tea* well diluted with *milk* may be allowed once daily. *Lemonade*, the copious use of *mineral waters*, and *cider*, should also be *tabooed*, and the patient confined to water or milk as drink. Flaxseed-tea has been recommended, but it is usually such a nauseous mess that the patient is only too glad to drop it out of his list of beverages. In the summer-time there is no objection to the use of the ripe fruits, and their juice often makes an agreeable addition to water; but such drinks should be *sparingly sweetened*, as a portion of the sugar is converted into alcohol in its passage through the human system.

Occasionally toward the close of the acute stage the gonorrhea will extend from the anterior into the posterior urethra, under which circumstances an exacerbation of the symptoms is likely to occur. There is *frequent* and *painful urination*, with *vesical tenesmus*, in some cases *blood* being voided with the urine, although blood following urination does *not* necessarily mean involvement of the posterior urethra. In posterior urethritis, where the *discharge is free*, the urine collected in two beakers will be equally

cloudy. In combination with these symptoms we usually have *fever*, *malaise*, and various other *constitutional disturbances*. All local treatment should be *immediately discontinued*, the *bowels* kept *open*, and *balsamics* given by the mouth to soothe the genito-urinary tract and render the *urine bland*. When possible, the patient should be induced to *remain in bed*, and all efforts must be exerted to *avoid complications* in the epididymes, seminal vesicles, prostate, etc., which frequently follow an attack of posterior urethritis.

After a *week or ten days*, in a favorable case, the acute symptoms *subside* and the patient is usually left with a *chronic posterior urethritis*. In such cases there is usually only a *slight* discharge, the *urine*, with the exception of the threads, being *nearly clear*.

In treating chronic posterior urethritis *no anterior irrigations* should be used, but after determining that no other parts are involved in the disease besides the deep urethra, attempts must be made to *stimulate* the diseased area. This can best be accomplished by deep injections with an Ultzmann's syringe, or locally through the endoscope. If the former be used, *nitrate of silver*, one grain to the ounce of water, may be introduced into the deep urethra every four or five days, gradually increasing the strength to five grains to the ounce, and is frequently effectual ; *sulphate of copper* may also be used in like manner and in the same strength. Stronger solutions (five to thirty grains to the ounce of water) of the above-mentioned minerals can be used through the endoscope.

These preparations will usually produce a sensation of *warmth* and a desire to *urinate* for several hours after such treatment, and this is particularly the case when silver nitrate is used by the syringe ; more so than when applied through

the endoscope. In many cases of chronic posterior urethritis *improvement* is *slow* and *tedious*.

If the reaction following these deep instillations is *too pronounced*, as shown by *fever*, *vesical tenesmus*, etc., *decrease* the strength of the solution used. In some cases, where chronic posterior urethritis exists without complications, the introduction of a *full-sized*, *conical steel sound* is of benefit and should be employed *once or twice a week*.

The **treatment of the complications** of gonorrhea in men varies according to their character. For *balanoposthitis* the most important point to be observed is *cleanliness*, and this, in many cases, will be all that is required. In *severe* cases, upon exposure of the glans penis by retraction of the prepuce, the parts may be *painted* over with a solution of *nitrate of silver*, from *five to ten grains to the ounce* of water, and the subsequent dressings should be either of ordinary *starch* powder, the impure oxid of *zinc* (calamin), or *lycopodium*, and a thin layer of lint or prepared cotton placed between the prepuce and glans penis.

For *phimosis*, if incomplete, subpreputial injections of warm water, or of a slightly *carbolized* lotion, with proper attention to *cleanliness*, will generally be sufficient; when it is complete, and especially if the foreskin acts as a reservoir for the pus and urine, *circumcision* should be practised, provided the inflammation is *not very acute* and there be *no edema*. There is no danger in the operation, so far as the *clap* is concerned, for the secretion, you know, is *not auto-inoculable;* but, of course, *be careful that the discharge does not come from concealed chancroids instead of gonorrhea. Auto-inoculation* will here give you the requisite information as to its nature.

Paraphimosis, which is the opposite of phimosis, is relieved by compression of the glans penis with the right hand, so

as to squeeze all the blood from the part; traction forward of the prepuce is then made by grasping it posteriorly to the constricted portion between the fingers and thumb, which are held in the shape of a circle, the penis lying in the enclosed space between the fingers. At the same time that the forward movement is made the glans is pushed backward in the hope of forcing it beneath the constriction. If this be not successful, an *incision* must be made through the strictured portion of the foreskin, when the prepuce can be drawn forward over the glans, and as soon as the inflammation and thickening of the foreskin have subsided, the unseemly dog's-ears which are left behind may be removed by circumcision.

Chordee, of all complications, is the one that will put you to your trumps to relieve. Everything in the pharmacopeia has been tried, and, I might almost truthfully say, has always been found wanting. Lupulin, camphor, belladonna, opium, bromid of potassium, ice, and hot water have all been used with varying success; but to my mind the one remedy which gives the most relief is the hypodermic injection of morphin and atropin:

℞. Atropiæ sulph., ... gr. j
Acidi acetici, q. s. ut ft. solutio cum
Aqua destil., ... ʒiv.
Et adde:
Morphia solut. (Magendie), q. s. ad unciam unam.
Of this inject five to eight minims hypodermically.

This may be given in the perineum or the insides of the thighs at bedtime. In injecting into the perineum you must, of course, be *careful not to wound* the membranous urethra by carrying the needle too deep; and if you select the insides of the thighs, be *careful not to puncture the internal saphenous vein*. All of these dangers may be avoided by making

your punctures *just beneath the skin*. Of the internal administration of remedies, *camphor* and *opium*, *camphor* and *belladonna*, or *opium* and *belladonna* give the best results, thus :

℞. Pulv. opii, ... gr. j
Pulv. camph., ... gr. ij
Sacch. alb., ... q. s.
Ut fiat capsula una.
SIG.—One at bedtime, and repeat in two hours if necessary.

℞. Extr. belladon. alcohol., ... gr. ss–j
Pulv. camph., ... gr. ij–iv.
Ut fiat capsula una.
SIG.—One at bedtime, and repeat if necessary.

℞. Pulv. opii, ... gr. j–ij
Extr. belladon. alcohol., ... gr. ss–j.
Ut fiat pil. una.
SIG.—At bedtime, and repeat if necessary.

The genital organs may also be bathed at bedtime in *hot* water, which will sometimes relieve the tendency toward erection, and *hot* I have found of *more service than cold* applications. A method of immediate relief more generally practised among the lower orders abroad than here is to place the penis during the state of erection upon a table or flat surface and strike it a *smart blow* with the fist upon its convex surface. This certainly relieves the chordee at once, but at the expense of profuse *hemorrhage* and a subsequent traumatic *stricture*, for the urethra is *ruptured* by the blow. It is hardly necessary for me to add that I do *not advise* your practising any such method.

When the epididymis is affected, the first step in the treatment is to insist upon the patient's *going to bed*, and the old maxim of Malgaigne in such cases is a good one : " The patient on his back, and his testicles toward the ceiling." Should he at first be restive under such advice, you may

be very sure that sooner or later he *will accede* to it, for his testicles will continually remind him that he is a fool to stand when he can lie, and he will perforce be glad to seek his bed in order to escape the intense suffering which gonorrheal epididymitis involves.

Of the many local applications which have been employed in acute epididymitis, *cold* ones are the best. Pack the testicle in *ice*, which should be finely broken up and placed in a water-tight rubber bag, or, what will answer the same purpose, a well-made condom. This will often *relieve the pain* and make the patient comparatively *comfortable and easy*. *Poultices* of hot flaxseed-meal or of tobacco leaves soaked in hot water are sometimes used ; but all these applications are nasty messes, and if you deem *heat* requisite in the treatment of these diseases, a very good way of applying it is by soaking a preparation known in the shops as *spongiopiline in hot water*, and wrapping the testicle up in that. *Flannels wrung out in hot water* will oftentimes serve the same purpose ; but nine times in ten *cold* applications answer *better* than *hot ones*. The use of *ice should be steadily persevered in until the pain is relieved*, unless, indeed, its application causes discomfort to the patient from too great a degree of cold when its use may be intermitted. The testicle, in the meantime, should be *well supported* and not allowed to hang between the patient's thighs. A very neat manner of relieving the pain is by making *multiple punctures* with a surgeon's needle, the larger the better, or with a bistoury which is guarded to within a quarter of an inch of its point. The testis is grasped in the left hand, and several rapid punctures are made into the swollen epididymis, care being taken not to make them too deep. Blood and serum follow the punctures, and oftentimes immediate relief is experienced.

After a *week or ten days* the pain in the testis subsides, and the patient is able to leave his bed, when upon examination the *epididymis* is found enormously *enlarged and indurated*, and still *tender* upon pressure. This *swelling* gradually *subsides*, and under very favorable circumstances *may entirely disappear*, but, as I already stated in the last chapter, *some thickening is nearly always left behind.* To reduce this, equal parts of *unguentum hydrargyri and unguentum belladonnæ* may be applied to the testicles upon a piece of linen or soft kid. Another plan, but one little used at the present day, is *strapping* the testicle in the manner described in manuals on surgery ; but as this has sometimes led to *atrophy of the testis*, its general use has been pretty nearly abandoned. To relieve the *enlargement* of the epididymis *iodid of potassium* in five- or ten-grain doses, three times daily, is sometimes advised, but my experience has been that this salt *makes the clap worse.* I, therefore, have given up its use, and substitute for it the simple *tincture of iodin*, in five- or ten-minim doses, which I do not find open to the same objection as the iodid.

The treatment of *prostatitis* has a twofold object, the first being the *relief of the inflammation* of the prostatic urethra, and the second the *prevention of suppuration* in the swollen organ. If, upon rectal examination, the prostate be found very much enlarged and tender, hot fomentations should be applied. For the relief of the *dysuria*, *rectal suppositories of opium and belladonna* should be used, of sufficient strength to insure freedom from pain. They should be prepared as follows :

℞. Extr. opii, ... gr. ij
Extr. belladon., ... gr. j
Theobromæ, ... q. s.
Ut fiat suppos. rect. No. 1.
Sig.—P. r. n.

Pieces of *ice* may also be passed up the rectum, and kept in apposition to the inflamed prostate.

Injections in prostatitis should be *suspended*, nor should they be resumed until the acute inflammation has entirely passed away.

The *internal remedies* which have been advised for this complication of gonorrhea are numerous, but to my mind four-fifths of them are useless and had better be dropped out of the list. The best are *copaiba* and the *oil of yellow sandal-wood*, and, if a diluent is required, *sweet spirits of nitre*, well diluted with water, given several times during the day in teaspoonful doses.

When *suppuration* threatens, the formation of *pus* should be *favored* as much as possible by the use of *hot sitz-baths and hot fomentations to the perineum*, and the surgeon's efforts should be directed to make the *abscess point into the rectum*. As soon as *fluctuation* is felt, *open* the abscess and dress the part afterward with *injections of warm water*, to which may be added a little *carbolic or nitric acid*, but these should be very weak, the principal object being to keep the abscess clean and free from the accumulation of pus or fecal matter. The cut edges of the wound will often form a sort of valve, which acts as a protection against the retention of foreign bodies in the abscess.

During acute inflammation of the prostate the *gonorrheal discharge almost, if not entirely, disappears, to return again as soon as the inflammation* has passed off, and when this occurs, *injections can again be used*. The patient should now be instructed, after throwing in the injection, to *work it back as far as possible into the canal*, and this may be done by stroking the urethra from before backward, in order to press the fluid into the deeper parts of the canal. The surgeon may himself once or twice a week make a *deep injec-*

tion, with Ultzmann's urethral syringe, of one of the following preparations :

℞. Argent. nitrat., ... gr. ss–j
Aquæ, ... ʒj.
M.
Sig.—For deep injections.

℞. Cupri sulph., ... gr. x–xx
Aquæ, ... ʒvj–viij.
M.
Sig.—For local use.

These injections should never be intrusted to the patient, but the surgeon should always give them himself. Similar applications can be made through the endoscope.

Inflammation of Littrè's glands and of the lacuna magna is usually treated through the endoscope. If the latter is the seat of trouble, pass a probe-pointed knife into the diseased duct and open the canal for its entire length, which can easily be done, as it is situated 1½ inches from the meatus, when the part may be touched with silver nitrate. A wire-frame speculum is usually the best instrument to use for reaching this duct.

Peri-urethral Abscesses.—Every effort should be made in cases where suppuration has occurred to prevent the pus from discharging externally, by *opening the abscess through the endoscope*, or, when the abscess is near the meatus, by the use of the *wire-frame speculum*, incising the urethra, and by external pressure over the swelling to evacuate the pus internally. Another way of treating these small abscesses, particularly before much suppuration has occurred, is to *inject into them a 95 per cent. solution of carbolic acid.* When, however, *suppuration is pronounced*, and if the abscess is *large* and difficult to reach with the endoscope, *enucleate* it, *pack the cavity* with iodoform gauze, and induce healing from the bottom.

Cowperitis.—You must remember that a *chronic gonorrheal inflammation* of one of *Cowper's glands* occasionally accounts for a *persistent discharge* from the meatus, and the only way to cure this condition is to cure the diseased gland. When such is the case, we must depend for our diagnosis upon the history of acute *pain* and the evidence of a *swelling* to one side of the *perineum*. This *usually subsides, only to return* if the urethra be irritated by instruments, by external violence, as a blow on the perineum, or by excessive sexual indulgence. Although *not a common condition*, it does occur, and in one case which I have seen the diagnosis was made during one of the exacerbations. *Removal* of the *gland* cured the patient of all further trouble. Inflammations of this kind are *obstinate* to all the usual forms of treatment and very *difficult* of *diagnosis* during an intermission.

Seminal vesiculitis, usually due to the *extension of gonorrhea* from the urethra into and through the ejaculatory ducts *to the seminal vesicles*, is of two varieties: *acute* and *chronic*. In the *acute* stage *rest* in bed should be enjoined, combined with the use of *belladonna and opium suppositories*, and all local treatment, such as *injections, topical applications*, the passing of *sounds*, etc., must be *discontinued*. The *discharge* usually *subsides* during the acute stage, to *return*, however, as the attack passes off. See that the *testicles* are *supported* and the *bowels moved* freely each day by *enemata* of hot water, and to prevent injuring the inflamed organs, a soft-rubber catheter should be used instead of the ordinary nozzle. The *diet* should be *light*, and all *alcohol strictly forbidden*. The treatment is either *internal* (as for acute gonorrhea) or *external*, and of all the local remedies *cold* applications are the best, either in the shape of an ice-bag or as fomentations. If heat is indicated, *hot*

flaxseed poultices to the perineum will often give relief. The acute attack generally lasts from *ten days to two weeks*. In many cases, however, a *chronic* vesiculitis follows the acute attack, frequently attended with a *persistent discharge* from the urethra which *no local treatment through this canal will help*, as the seminal vesicles can not be reached through the urethra. The treatment for this inflammation of the seminal vesicles *must be applied through the rectum.*

Having made our diagnosis, we should strip or *massage* the diseased sacs every *five days*. At first this may be *painful* and the *discharge* temporarily *increased*, but as improvement takes place there is *less* and less *discomfort* and the *discharge* finally *disappears*. The technic of this method of treatment is as follows : The patient should present himself with a full bladder and an empty rectum in order to facilitate reaching the seminal sacs. He then assumes a standing position, with the upper part of the body at right angles to the lower. The surgeon, standing behind the patient, passes his right or left index-finger into the rectum, according to which vesicle is to be stripped, the finger being kept on a line with the forearm and wrist, when, with considerable pressure of the hand against the perineum, the vesicles can be reached. Counterpressure is made over the pubes with the disengaged hand. The act of stripping the sac is accomplished by moving the terminal phalanx (not the whole finger) slowly over the vesicle from its upper border to the opening of the ejaculatory duct, care being taken that, while the *pressure* is *firm*, it shall *not be violent nor* shall it cause a great amount of *discomfort* to the patient. If the physician is not strong or the patient is very stout, a chair may be placed behind the latter, the physician planting his right or left foot on the chair, his elbow on his knee, and his finger in the patient's rectum. This position

will usually give the strength requisite to reach high up into the rectum, as it needs a fairly strong arm and wrist to overcome the resistance of the perineal muscles.

For patients with a *tubercular* tendency or in whom *tuberculosis* of these organs is present, all *local treatment* must be *discontinued*, a change of *climate* advised, and *cod-liver oil* prescribed internally. These cases are very *difficult* to *cure*,—indeed, are sometimes incurable,—and the surgeon should use every means in his power to *build up the patient's general health.*

Coitus should be *interdicted* during the treatment, but after the massage has been discontinued it *may be allowed* as an aid to recovery. It should always, however, be *performed* in the *natural* manner, and *self-abuse* should be *forbidden.*

In *chronic gonorrhea* where the entire urethra is involved the *endoscope* is very useful for detecting and reaching granulations and other diseased areas. *Granulations* are not infrequently *present* in some portion of the urethra, giving rise to a *discharge*, and should be treated every *four or five days* by the *silver nitrate* (1 to 10 per cent. strength) applied on cotton tampons through the endoscope.

The treatment of *gonorrheal rheumatism* is as unsatisfactory as it can well be, for there is no form of rheumatism more rebellious to the action of remedies or more prone to become chronic. The *ordinary internal* remedies are of *no* avail, and those which promise the most success are the local application of *blisters* above and below the diseased joints, painting the affected parts with the *compound tincture of iodin*, and the internal administration of the *iodid of potassium.* But even these sometimes prove of no service, and the case goes on to *anchylosis*, partial or complete. In cases where *pericarditis* ensues local

applications of *strong* tincture of *iodin* should be made over the pericardial region, and *iodid of potassium* in five- to ten-grain doses administered internally three times daily. But sometimes *permanent* thickening of the cardiac *valves* takes place, just as it does in rheumatic pericarditis from other causes.

In addition to the above measures full doses of *salol*, *salicylic acid*, or *quinin* are of assistance. The joint should be tightly *bandaged* and kept at *rest*, *cold* applications being made during the acute stage and later in the disease.

Gonorrheal ophthalmia is of importance, according to the form which it takes, and the treatment varies widely. When due to *contagion* from the conveyal of *matter* by the fingers, the attack is extremely *serious*, as the eyeball may be *destroyed within forty-eight hours* unless prompt measures be taken for its relief. The *eyelids* and the *eye* itself should be *sedulously and carefully* kept *clean* by frequent syringing with warm water every ten or fifteen minutes; the eyelids should then be everted, so far as the enormous edema and swelling will permit, and the parts brushed over with a strong solution of *nitrate of silver*, forty to sixty grains to the fluid ounce of water. The *unaffected* eye should be carefully *protected* from infection by the use of a watch-glass tightly applied by the aid of flexible collodion and a bandage. In spite of all care and attention corneal *ulceration* will sometimes go on very rapidly, and the *contents* of the eyeball be *evacuated*. The subsequent *thickening* and *granular* condition of the lids, as well as the *keratitis* and *chemosis*, should be treated by the methods laid down in the text-books on ophthalmic surgery.

The *other* form of gonorrheal *ophthalmia* is not so *serious*. The *conjunctivitis* and the serous *iritis* may be treated by

repeated bathing with *hot water*, *blisters* to the temples, and the instillation of the following *collyrium:*

℞. Sodæ bicarbonat., ... gr. x
Aquæ camph., ... ℥ ij.
M.
Sig.—P. r. n.

Serous *iritis* may be treated by dropping into the eye, three or four times daily, the *sulphate* of *atropin*, four grains to the ounce of water. If the iris remains sluggish to the action of the atropin, one or two *leeches* may be applied to the temple or over the supra-orbital region.

Inflammation of the lymphatic inguinal glands, or those running over the *dorsum penis*, should be treated in the earlier stage by rest, *cold* applications, *pressure*, *blisters*, and the daily application of the *tincture of iodin.* Should, however, these measures prove *ineffective* to prevent suppuration, it should be favored, as far as possible, by the application of *poultices*, and as soon as *fluctuation is detected the bubo should be opened* in the method laid down in the chapter on chancroidal buboes, care being taken that all *sinuses are freely laid open* and *curetted* whenever they present themselves. The wound should then be *irrigated* with hydrogen peroxid and *packed* with iodoform gauze.

After the discharge has *lost* its *purulent* character and subsided into the chronic condition known as *gleet*, the treatment undergoes certain modifications. *If dependent upon a stricture*, this must be removed before the discharge can be cured, which may be done either by gradual dilatation with *bougies* and *sounds* or else by one of the many operations advised in the surgical text-books. Once or twice a week the surgeon should *pass a steel sound* of the *largest* size the urethra is capable of receiving, which may be *withdrawn* within a few seconds after its introduction

into the bladder, or *left in situ* for five to fifteen minutes, as occasion requires. A steady perseverance in this course of treatment for a few weeks will generally bring about a cure, which may be hastened in some instances by the use of *deep injections* and by the *internal* administration of the *balsamic* and *resinous* preparations of which I have already spoken.

This brings me to one point of my subject which it is well for you to remember: *a discharge is sometimes kept up by overmedication.* Patients will apply to you with the following history: they have been under treatment two or three months for a gonorrhea, which, after running through its usual course, has ended in a thin, mucous discharge, usually only apparent in the morning, but occasionally during the day. There is no irritation while passing water, and but for the slight discharge they would be entirely well. This, however, has persisted for several weeks without any apparent change, and has been a source of worry and anxiety. The patients have lost flesh and strength, while their faces will often bear signs of the mental excitement under which they are laboring. Bid such patients throw away their syringes, stop all injections and medicines; bid them live well, and use with their dinners a moderate quantity of some light wine—the red Bordeaux wines are the best; advise them against beer and spirits at first, but these may be used later on if deemed requisite. Tell them plainly that they *are keeping up the discharge by overtreatment*, and that the sooner they recognize the fact, the quicker they will get well. Sometimes nothing further will be needed, but occasionally some *tonic*, such as the tincture of the chlorid of iron or the syrup of iodid of iron, in doses of five to fifteen minims, may be given with advantage, and you will have the gratification of hearing the patients tell you in a short time that they are entirely well.

Warts, or condylomata, as they are sometimes called, if small and pedunculated, may be *snipped off* with scissors and their bases touched with *strong nitric or acetic acid.* When they are *large*, or seated upon a broad base, they should be *painted* with *strong acetic acid*, and *dusted over* with powdered *alum* or with the dried *sulphate of iron*, mixed with equal parts of lycopodium. When *very large* and *exuberant*, especially in those cases which occur in both sexes on the nates and perineum, I have often injected two or three minims of *glacial acetic acid* into the substance of the wart with benefit. This *shrivels* up the growth with surprising rapidity, and, when properly used, by *injecting but a few drops at a time, is not attended with any danger;* at the most, an *abscess* is the worst result that will follow, unless, of course, the acid is used recklessly and beyond the bounds of prudence. But one point I wish particularly to impress upon your minds in the treatment of these affections: *keep the parts dry and clean; it is four-fifths of the treatment.*

Herpes, when slight, is best treated by dusting the parts with powdered *bismuth* or *starch and zinc*, *calamin*, or some such dressing; if they show any tendency to ulcerate, touch them lightly with the solid *nitrate of silver*, and finish the treatment with the dry dressing above advised. *Do not use wet dressings;* they only serve to macerate the epithelium and keep the parts in a condition of moisture unfavorable to recovery.

When complicated with *digestive* troubles, these latter must be treated by the remedies applicable to such diseases.

The *treatment of gonorrhea* in women varies according to the portion of the genitals which is attacked. In *urethritis* and *folliculitis*, the varieties most frequently encountered, the *internal treatment* and *diet* are much the same as in

men; potassium acetate or bicarbonate of soda is given in the acute stage, to be followed later on by *urethral injections* or by the application of the *solid stick* of silver nitrate. As the acute stage subsides the local lesions in the urethra are treated through the *endoscope*, by topical applications made directly to the diseased part in the form of aqueous solutions of *silver nitrate*, 1 to 10 per cent., or a 2 to 10 per cent. solution of *iodin* in glycerin. Urethritis in the female is much *less serious* than in the male, and *recovery* is generally much more rapid and complete.

In the treatment of *vulvitis cleanliness* is very important, careful attention to which will assist very much in the cure of the disease. The use of *antiseptic* and *astringent* lotions, combined with an effort to protect the inflamed surfaces from the irritating effect of the urine and of the discharge, is essential.

Hot solutions of corrosive sublimate, 1 : 2000, *silver nitrate*, 1 : 1000, are the best, the injections being made with a fountain syringe and a large quantity of fluid being used. In addition the *inflamed surfaces* should be *separated* by a thin sheet of cotton dipped in some mild antiseptic, for which, after the acute symptoms subside, astringent powders and dry cotton may be substituted.

The treatment of *Bartholinitis* is *rest* in bed, hot *sitz-baths*, and *soothing lotions* constantly repeated. As soon as *pus* is detected, an *incision* should be made on the *inner* surface of the *labium majus*, the *pus evacuated*, and the cavity *curetted* and *packed* with iodoform gauze. This should be kept *open*, thoroughly *washed* out with peroxid of hydrogen or bichlorid, 1 : 2000, and allowed to *heal from the bottom. Chronic Bartholinitis is extremely difficult to cure*, showing a tendency to *recur*, *resisting* all ordinary *treatment*, and often necessitating *removal of the gland.*

In the *treatment of gonorrheal vaginitis*, the vagina being first *cleansed* by the use of tampons of prepared cotton introduced through the speculum, should then be painted over with a *strong solution of nitrate of silver* (twenty to forty grains to one ounce of water) or the *pure tincture of iodin. If care is taken not to allow the fluid to run out upon the vulva or the external genitals, no pain is felt*, as the vagina and the cervix uteri are not sensitive parts; and even if the medication does reach those portions, the smarting is not very severe nor does it last long. Upon the withdrawal of the speculum a layer of *dry cotton* is placed between the *labia*, to separate them as well as to prevent the discharge from trickling down over the perineum and the insides of the thighs, and to obviate excoriation of these parts.

The patient herself may use hot antiseptic injections, a quart at a time, twice daily, and the best is one of corrosive sublimate, 1 : 2000. After injecting, the vagina should be tamponed with sterilized gauze.

A very good injection is to add to a half-pint of ordinary table claret:

℞. Alum. pulv., ... ℥ij
Zinci sulph., ... ℥j
M.

Of which the patient is directed to use from one to three tablespoonfuls in from one-half to a full pint of tepid water thrice daily.

It is well, for convenience, to give women the materials in bulk, and let them mix their injections themselves, reckoning a full, not a heaping, teaspoonful as the equivalent of the drachm.

If the inflammation is very *acute*, no injection should be used except one of *hot water*, and the frequent use of *hot*

sitz-baths is advisable, but as soon as the symptoms subside the medicated fluids should be employed.

A very good way of keeping the medication in contact with the diseased part is to soak a pledget of prepared cotton in a solution of *tannic acid* two drachms to glycerin one ounce, and lay it on the diseased portions of the vagina. Other astringents may be used in the same manner, such as *alum* of the same strength as the tannin given above, or the *tincture of catechu* without the glycerin. *Be careful to remove these tampons frequently* (three or four times daily), else trouble will ensue from decomposition of the retained discharge, and also remember that in all these diseases *cleanliness, if not superior to, is next to, godliness.*

In using injections, in order to make them effective the following rules should be observed. The glass and rubber syringes which are often sold under the name of vaginal syringes are of no earthly use ; the only effective one is the fountain syringe. In giving an injection the woman should *never be allowed to assume a squatting posture*, as the fluid runs out as fast as it is thrown in, and does not reach the deeper portions of the canal ; but she should be *placed upon her back*, with the hips slightly *elevated*, when the vagina is thrown open by the force of gravity, and the fluid, by the same physical action, is carried into every portion of the canal. Some of the fluid, of course, escapes ; and in order to protect the woman's clothing, a sheet of rubber cloth should be placed under the hips, and a vessel in readiness to catch the overflow. At the close of the operation a tampon of *dry cotton* should be placed *between the labia*, to retain what fluid is left in the canal. These injections, remember, are to be used in conjunction with the applications which the surgeon makes himself every second or third day.

In *inflammation of the cervix uteri* the part should first be thoroughly *cleansed* from all discharge with a piece of cotton wound on the end of a uterine probe, and the canal touched with a *solid stick* of the nitrate of silver, care being exercised that the *cervix alone*, and not the *body of the uterus*, is cauterized. The patient should *not* be trusted to make any applications herself, owing to the danger of exciting inflammation in the body of the womb, the treatment of this portion of the woman's genitals being left entirely in the surgeon's hands.

During the acute stage of endometritis no local treatment should be applied. *Rest* in bed, free use of *saline laxatives*, *local depletion* of the cervix, and *anodynes* are indicated; but later on, when the disease has become chronic, the uterus should be *washed out* every *two* or *three days with a hot bichlorid solution*, 1 : 10,000, and, if necessary, the cervix should be *dilated* and the cavity of the uterus *curetted*. When the *Fallopian tubes and ovaries are involved*, *rest*, *leeches*, and *anodynes* should be employed, and as soon as a *tumor* can be distinctly felt, *an abdominal or a vaginal section* should be made. *Internal* treatment, so far as the local conditions are concerned, *is not of much advantage*, except in urethritis.

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