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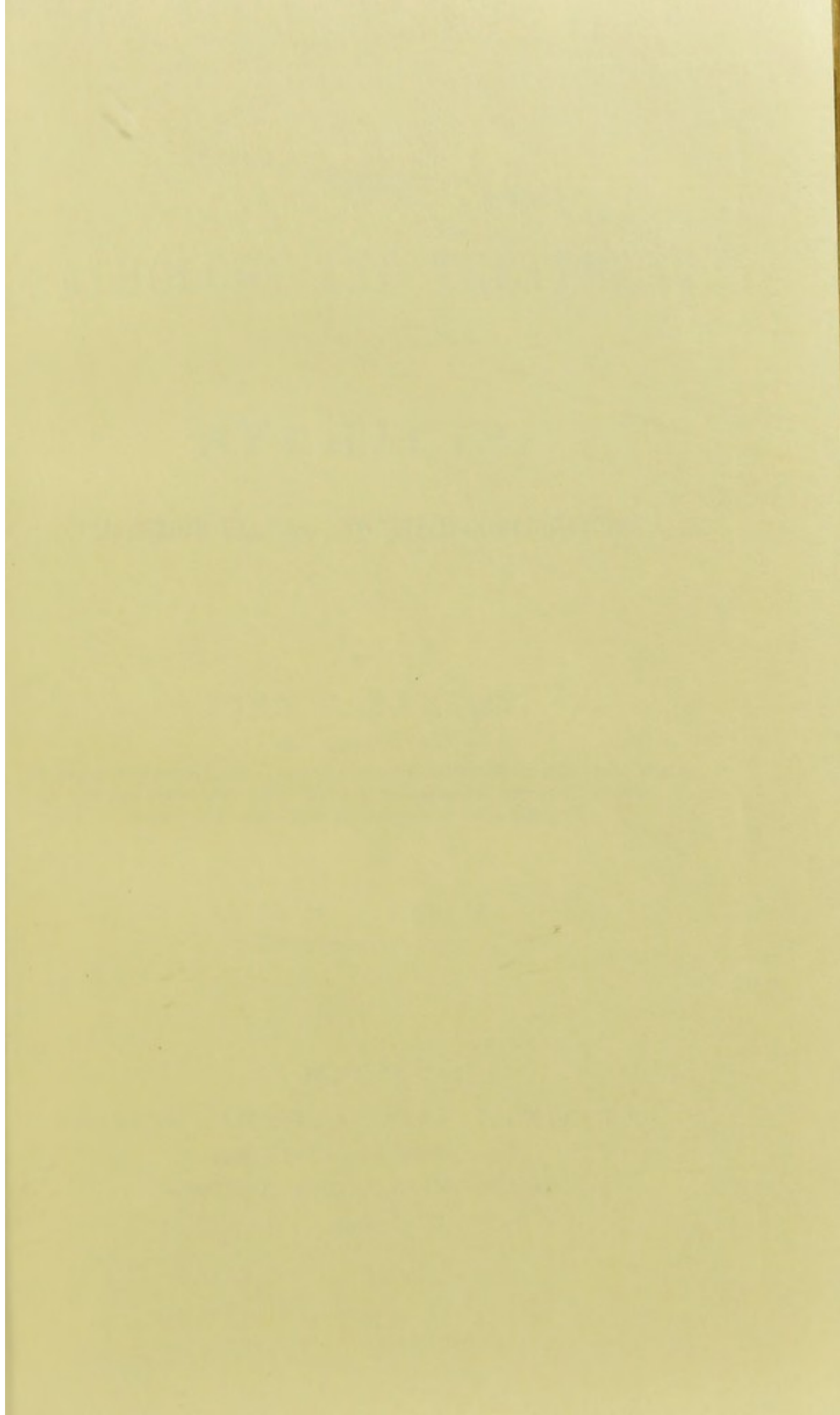


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PATHOLOGY AND TREATMENT

OF

SYPHILIS,

CHANCROID ULCERS, AND THEIR COMPLICATIONS.

BY

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TO

ALFRED HUDSON, M.D., (DUB.) M.R.I.A.,

FELLOW OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS,
PHYSICIAN TO THE MEATH HOSPITAL,

IN GRATEFUL REMEMBRANCE OF MANY ACTS OF KINDNESS,

This Volume is Dedicated,

BY

THE AUTHOR.

The first point which I would
draw attention, is the subdivision
of the 3 stages of Syphilis, at pages
65. and 66.

3 point -

The principles of Opium which
Mercury is the first - pages 211
222 - 223. - Advantages of
Mercuric - 224 - 225. etc.

3 point

Inquiry as to when Mercury and
when Iodide of Potassium should
be given from pages - 246 to 264

[Signature]

P R E F A C E .

I HAVE for many years been convinced that a book on Syphilis, which would meet the requirements of the student, was much needed. This conviction has arisen from observing that those whose interest had been aroused by the intricate problems and difficulties of the subject, could not find the guide they wanted among the books accessible to them; nor when appealed to, was I able to refer them to one book of moderate compass which would give them a clear account of the whole matter. The Lectures of Carmichael, Colles, Ricord, and Lee, admirable and useful as they are, do not supply this want; these and many other authors while investigating the laws which govern the evolution of syphilis in the system, and discussing the propriety of certain methods of treatment, have been preparing the foundations, and testing the soundness of the materials, which the student may now reasonably expect to have built together, and presented to him as a whole, complete as far as our present knowledge permits.

The masterly and comprehensive work of Lancereaux presents syphilis thus as a whole, but from the extensive plan upon which it is written, and the details which it furnishes, it must always remain a valuable book of reference, rather than one meeting the wants of the student. It is to be hoped that the New Sydenham

Society will soon, as they propose, present a translation to the English reader.

The excellent work of Bumstead is justly appreciated in this country; but containing, as it does, much irrelevant matter, it is unnecessarily voluminous.

The recent strides which modern investigation has made in resolving the difficulties which have hitherto beset this subject, render it most important for the practitioner as well as the student to be supplied with a book which will give him the practical conclusions which have followed from the original observations of Bassereau, Diday, Hutchinson, Wilks, and others, by which our views of the entire subject have been revolutionized.

The practical importance of holding correct opinions regarding syphilis had induced me to devote, for several years past, a considerable share of attention both in clinical and systematic surgical lectures to this subject. The interest with which these lectures were always listened to has encouraged me to make an attempt to supply the want which was felt for a written guide.

It is almost unnecessary to say I am no specialist. I consider the subject of syphilis to be essentially one with which every practitioner, the physician as well as the surgeon, should be familiar, and one which every hospital or dispensary surgeon has ample means of studying.

I have not attempted to illustrate this book with drawings, for two reasons; in the first place, and chiefly, because it is not my object in any degree to supply the place of clinical observation, but, on the contrary, to stimulate and to aid it; and in the second place, because the price of illustrations must necessarily add considerably to the cost of the book.

I have endeavoured to acknowledge the various sources from which I have derived help in this undertaking, and to refer the reader to authors in whose works more extended information may be obtained, connected with the special symptom or subject under discussion. Any omission which I may have made in this way, will, I trust, be excused, by the vast extent and scattered character of the literature of the subject.

I have to acknowledge the valuable assistance afforded me by my friend and colleague, Dr. Little, by his careful revision of the press, and for many useful suggestions. I owe to my friend and pupil, Mr. Samuel Knaggs, the compilation of an accurate and comprehensive index.

DUBLIN, OCTOBER, 1868.

I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the above mentioned matter. I have the honor to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
 Yours obedient servant,
 J. M. [Name]

Received of the [Name] the sum of [Amount] Dollars for [Purpose] this [Date] 1848.

Witness my hand and seal this [Date] 1848.

[Signature]

[Signature]

[Signature]

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THE
PATHOLOGY AND TREATMENT OF SYPHILIS,
ETC.

CHAPTER I.

INTRODUCTION—VARIETIES OF VENEREAL DISEASE.

THE group of diseases known under the name Venereal imperatively demands the careful attention of all who are engaged in the study and practice of medicine; for, under whatever circumstances or restrictions, or in whatever quarter of the world, we may practice our profession, we will be called upon to recognise, perhaps under embarrassing circumstances, and to treat with care and judgment, some forms of these diseases. They do not belong exclusively either to the domain of the surgeon or to that of the physician. If some of the more local and earlier effects of venereal disease are usually brought before the surgeon, some of the later constitutional symptoms produced by the syphilitic poison are peculiarly interesting to the physician, and will fall under his care, affecting, as they do, the viscera and nervous centres.

There are several considerations which are calculated to impress us with the necessity of a special study of this subject. In the first place, venereal diseases are very common. Numbers of the soldiers of our army, and sailors of our fleet, are rendered useless by their effects. It appears from statistics collected by the Committee appointed to inquire into the subject, that, during the year 1864, 19·1 out of every 1,000 soldiers were, on an average, always unfit

for duty from venereal disease. In the navy, during the year 1862, the daily average loss was 586 men—about equal to the entire crew of an iron-clad frigate. With regard to the extent to which the lower orders of people in towns are diseased, every surgeon who attends a dispensary, or the out-patients of an hospital, knows how frequent some form of venereal is amongst the crowd who daily come before him. We learn, from inquiries made by the Venereal Committee of the Harveian Society,* that, in some of the London hospitals, more than half, in others a third, of the out-patients, are venereal cases; and that in Bartholomew's Hospital alone, as many as 174 cases are seen daily. But it is confined to no class. It has invaded all ranks. Nor are those who sinfully expose themselves to contagion, by any means the only, or even the chief sufferers. Many virtuous wives, and multitudes of innocent children, are constantly the victims of syphilis.

Now, while the legislature are trying what may be done by law to prevent or restrain the spread of this evil, the fact of its present wide-spread extent demands from each member of the medical profession an attentive study of it. And it must be acknowledged that, for the past forty years, no single subject in the wide domain of medicine or surgery has received a greater or an equal share of attention. The vigorous and original observations of Ricord in Paris, and Carmichael in this city, produced such an interest in the subject, that ever since, both in these countries and on the Continent, it has been pursued with great ability and success. And the result has been that the obscurity and confusion which caused syphilis to be called the "opprobrium of surgery," has passed away. A closer study of the pathology and natural history of this disease, has led to a corresponding precision and simplicity in its treatment; and has led also to a marked line being drawn between the different varieties of the group. Hence a second reason for the student of medicine turning to this subject with special attention—for without knowing what has been done, we will not be doing justice to those under our care; and, more than

* British and Foreign Med. Chir. Rev., No. lxxx., p. 309.

this, all should aim to add to the common stock of professional knowledge; but we must fully appreciate the advances already made, before we can in any degree aid in the solution of the many intricate questions which still remain to be settled in connection with this curious subject.

If other inducements were necessary to engage our attentive study of this group of diseases, it would be found in the fact that mercury, one of the most powerful drugs we possess, has a most remarkably beneficial influence over some forms, while in others it is worse than useless—being, in fact, most hurtful if given when it is not required. It is a two-edged sword which, used with discrimination and skill, is able to cope with and overcome the monster; but if rashly and ignorantly wielded, is certain to injure those whom it is intended to succour.

The study of this subject, to which every student of medicine is thus compelled, is happily one of no common interest. The observation of the natural progress of syphilis—the regular unfolding of its symptoms—is in itself a most interesting study. While the attempt to explain, by clinical observation or experimental research, some of the difficult problems which surround the subject, has special attractions for many. There can be no doubt, indeed, that the intrinsic interest of this study has had a powerful influence in sustaining the vigorous and continued efforts which have been and are being made to elucidate the whole matter. In addition to this its scientific interest, there is another, which may be called its social aspect, which is not less important. Questions affecting the peace and happiness of individuals and of families will arise, the true answer to which requires, upon the part of the surgeon, an accurate and comprehensive acquaintance with the entire subject.

The group of venereal diseases consists of three, all being propagated by the same means, viz., impure sexual intercourse. They are—1st, Gonorrhœa, an inflammation of the mucous membrane of the urethra. 2nd, Simple sores, sometimes called soft chancres, or chancroid ulcers. And, 3rd, a constitutional disease, called Syphilis.

Arising, as each of these do, under the same circumstances, and frequently being found to exist together, the result of the same coitus, it was naturally supposed that they all were produced by the same cause, which cause was supposed to be a virus or poison which existed in the secretion, and that the fact of the virus happening to lodge upon the external mucous membrane or skin, determined the production of chancre; while, if it happened to get into the urethra, gonorrhœa resulted. And with regard to syphilis, it was supposed to follow either of these others; the virus then was supposed to have been absorbed into the blood, either from the ulcer or the inflamed urethra. This was Hunter's doctrine.

The first question here is—Upon what grounds is the existence of a virus or poison believed to exist? The answer is—The existence of a virus is inferred from the effects which we notice uniformly follow, when a person infected with either of these forms of disease has intercourse with one who has been healthy up to that time. The virus has never been demonstrated, either by microscopical or chemical examination of the secretions. M. Dorme observed certain animalculæ in the pus of chancres, and it was supposed for a time that the nature of the virus had been discovered; but subsequent observations proved these to have no connection with the poisonous qualities of the matter. But although not demonstrated, yet the existence of a virus may be said to be satisfactorily proved; because if we find, as we do find in the case before us, that a secretion which, to all appearance, is the same as pus derived from a simple ulcer, yet possesses the power of constantly and regularly producing similar ulcers as those from which it was taken, which simple pus would not do, we have a right to conclude that something exists in this secretion which does not exist in simple pus, which something we call a poison, or virus. When constitutional syphilis exists, the proofs are still more conclusive, for here we find a course of phenomena produced which follow one another in a regular manner, and reproduce themselves any number of times, when the disease passes from one individual

to another. That these various but constant symptoms depend upon a morbid principle, or virus, which has gained admittance into the blood, we can no more doubt than we can that small-pox, typhus, or scarlet-fever, are produced by their peculiar poison. The *existence* of a virus must be admitted, but as yet we possess no test of its presence except the human body itself.

The next question which arises is—Are these three kinds of disease produced by the same virus—are they, in fact, mere modifications of the same disease? or, on the other hand, are they distinct diseases, produced by different poisons? As has been stated already, Hunter taught that the constitutional disease of syphilis resulted from gonorrhœa, and from all varieties of chancres; in fact, he would have replied in the affirmative to the first of these questions. At the present day, however, the very opposite opinion is generally held; the three forms of venereal disease being held to be distinctly different, and to be produced by different viri, or irritants. As this question is one of the most hotly disputed of modern times, and as, moreover, it is of the greatest practical importance that clear and well-founded views should be held upon this subject by all, I will devote some space to its consideration, hoping to place the matter in a clear and intelligible light to all.

To begin with gonorrhœa. Hunter founded his belief in the identity of gonorrhœa and syphilis, upon observation and upon direct experiment. He thought he observed that syphilis followed a gonorrhœa sometimes; and to prove it, he took some purulent matter discharged from the urethra of a gonorrhœal patient, and inoculated himself with it. Syphilis followed; proving to Hunter, and to his followers for many years, the identity of the two diseases. The accuracy of this conclusion was, however, disputed even during Hunter's own time, by Bell, Cockburn, and Balfour, and subsequently by Sir Astley Cooper; all of whom, observing the total dissimilarity between the symptoms of gonorrhœa and those of syphilis, and failing to find one following upon the other, refused credit to Hunter's experiment upon himself, and endeavoured

to explain it in various ways. The great majority of surgeons, however, followed the opinion of Hunter, and consequently treated gonorrhœa with mercury, in order to prevent syphilis following; the miserable patients were profusely salivated, spitting several pints daily, and yet the gonorrhœa remained as bad as ever; still the surgeon, acting on a mistaken theory, pursued the same treatment in all cases. We find Sir Astley Cooper, who could not shut his eyes in obedience to any name, however great, indignantly exclaiming to the students of Guy's Hospital*—"I do say that the present treatment of patients under gonorrhœa in these hospitals, by putting them unnecessarily under a course of mercury, for five or six weeks, is infamous and disgraceful."

It was only by direct experiment, however, that the result of Hunter's successful inoculation upon himself could be proved to have been a mistake. Ricord, understanding this, undertook a series of inoculations with the pus of gonorrhœa and of chancres, inoculating each upon the patients suffering from the other; these experiments, which were publicly carried on in the Hopital du Midi, attracted general attention. The results were always the same: the pus of a chancre produced a chancre, and never a gonorrhœa; and the gonorrhœical matter never produced a chancre under any circumstances; and in no case did constitutional syphilis ever result from a gonorrhœical inoculation. The proof was now complete that gonorrhœa was produced by a peculiar irritant which caused an inflammation of the lining membrane of the urethra, but which was quite distinct from the virulent matter which produced chancres and syphilis.

Gonorrhœa was thus set aside from syphilis, and was understood to be a distinct disease, consisting in an inflammation of the lining membrane of the urethra, produced by various irritating secretions in the female organs of generation. Producing, in its turn, stricture of the urethra, and the train of pathological changes which result from this, it becomes an important matter to check it at its commencement; if neglected, the stricture which it causes,

* Sir A. Cooper's Lectures, p. 501.

and the complications which result from this again, become one of the most serious conditions with which the surgeon has to deal. The consideration of this subject in all its important bearings, is incompatible with the object of the present work. So we now pass on to the consideration of *chancres*, and their varieties.

A chancre is a sore or ulcer produced by the inoculation of the secretion of some similar sore. Such a sore may be produced upon any part of the body, but much more readily upon some parts than upon others. The organs of generation being the parts exposed are most frequently affected. Chancres vary in their character and appearance according as they are situated upon the skin or mucous membrane; the health and habits of the patient also influence these sores; so that it has been customary to describe four or five different kinds of chancres. Erichsen gives the following four:—the *simple or excoriated chancre*, the *indurated or Hunterian*, the *phagedenic* and the *sloughing chancre*. These, and many other varieties described by other authors, depend upon the appearance, amount of ulceration, or situation of the sore, and they indicate the degree and condition of the chancrous ulceration with which we have to deal—the destructive action of the latter kinds contrasting with the mild and readily-managed ulceration of the former. These local conditions yield, however, in importance to the inquiry—Are all chancres followed by the constitutional disease which we know under the name of Syphilis? If so, is each followed by its own peculiar kind of syphilis? It is evident that if these questions were satisfactorily settled, the primary sores or chancres should be classified according to the constitutional effects which they produce.

Carmichael was the first to perceive the importance of this inquiry. Observing great varieties in the severity and character of primary ulcers, Carmichael connected them with similar differences which are found to exist between different cases of constitutional syphilis, and contended that there were four distinct primary ulcers, followed by as many distinct kinds of syphilis. Each of these kinds of chancres he believed was produced by its

own peculiar virus or poison, which being absorbed into the system produced a peculiar set of constitutional symptoms. With great sagacity, however, this celebrated surgeon remarks, that whether the plurality of poisons be admitted or not is comparatively of little importance, if it be understood which of these forms of syphilis require mercury for their cure, and which do not; and it is to the solution of this important question that his essay on venereal diseases is chiefly directed. Carmichael's theory of the plurality of syphilitic poisons, unsupported as it was by any sufficient proofs, failed to be generally accepted, and was soon abandoned; but the accurate observation of the different phases of the disease with which it was accompanied remained, and has had a great influence on the final elucidation of the whole question.

Ricord, in his extensive observation of venereal diseases, had frequently been struck by the remarkable fact, that some of the worst cases of primary ulcers were not followed by constitutional syphilis; while in others, where but very slight excoriation had existed, syphilis followed severely, and this, too, when both patients had been treated alike, and to all appearance possessed very much the same constitution. This sagacious observer saw that no theory of individual peculiarity would explain this; for not unfrequently he noticed the same individual who had repeated primary disease, with no constitutional result, would subsequently get a small sore, which would be quickly followed by syphilis. So that while maintaining the unity of syphilis in the strongest manner, in opposition to Carmichael's theory of the plurality of syphilitic poisons, Ricord was led to think that there must be some essential difference between the different kinds of primary ulcers. In his "Lettres sur la Syphilis," published in 1851, when speaking of the effects of inoculation, he observes—"If these results are constantly obtained, we should be forced to conclude that there are differences in syphilis which do not depend alone upon the condition of the individual upon whom the cause acts, but upon differences in the cause itself."

The idea here struck out, of some essential difference between

different chancres—some being followed by constitutional syphilis, while others from their nature were not so followed—was fully examined in the following year by Bassereau, who, in his able work entitled “*Des Affections de la peau Symptomatiques de la Syphilis*,” puts the question—Why is it that secondary syphilis follows some cases of chancre and does not follow others? Supplied by the Hopital du Midi, and that of St. Louis, with abundance of cases, Bassereau noted 198 in which a syphilitic erythematous eruption existed—this eruption being the mildest and earliest symptom of secondary syphilis—and examined these to ascertain if there was any common ground of age, sex, temperament, constitution, hygienic influences, or co-existing disease, by which the absorption of the virus was to be explained; but found all these conditions present in their usual variety, making it evident that the infection depended upon no such personal influences. The constitution of the patient having very generally been supposed to have a powerful influence in determining whether secondary disease would follow the primary, he compared 100 cases of secondary eruption with the same number of cases in which chancre alone, without any secondary disease, existed, and found the same proportion of scrofulous and lymphatic temperaments in each, and about the same number of drunkards; so that none of these constitutional conditions could be considered *the* determining cause of secondary affection. He now turned to the primary sores themselves, and sought for some common character amongst those which were followed by secondary syphilis. He found that the *number* of sores did not influence the result; one small chancre being often the only primary disease in many of the cases. *Situation* did not influence it; for the chancres which were followed by secondary disease, and those which were not, occupied the same situations precisely. For the same reasons the *extent of the ulceration* and *duration* of the sores were pronounced to have no influence on the result. One character, and one only, was found to exist in the great majority of the sores which were followed by secondary disease—this was *induration*. Of 170 cases

of secondary syphilis, in which the primary sore still existed, Bassereau found 157 more or less distinctly indurated, while 13 were doubtful.

Induration round a chancre had always been considered a sign of the syphilitic character of the sore; and the chancre described by Hunter as typical of syphilis was essentially an indurated sore; so that this was no new character thus fixed upon. But the observations of Bassereau went to show that the chancre with induration differed from other sores, not merely in degree, as had previously been supposed, but in kind; that it was, in fact, the initial lesion of syphilis, while other sores were local in their action, and were not followed by any constitutional contamination. In order to prove their being essentially different diseases, however, it would be necessary to show that each was produced by contagion only from a similar sore—that an indurated chancre was produced by the secretion of another indurated chancre, while soft sores always resulted from soft sores. To prove this, Bassereau undertook to trace the sores presented to his notice to the source from which they were derived. He inquired from his patients of whom they had contracted the disease, and went in search of the persons thus pointed out. Circumstances make such an investigation impossible in many cases; however he succeeded in 34 cases of secondary syphilis in satisfactorily tracing the source of contagion. In 31 of the individuals from whom the disease had been taken, he found indurated chancre and constitutional syphilis, and in the remaining 3, indurated chancre alone; not one took its origin from a soft sore. Bassereau, from these investigations, concluded that each kind of sore had a distinct origin and individuality of its own, laying down the following law—“That whenever a person has a chancre followed by constitutional syphilis, this is due, in the first instance, to the fact, that the person from whom they received the infection had, in the first instance, a chancre followed by constitutional syphilis.”*

Numerous observers followed Bassereau, confirming his views.

* Bassereau, p. 198.

Clerc pointed out the important fact that the indurated sore was not fully formed for about three weeks, while the soft sore was developed in as many days. He named the latter *chancroid* sores, as distinguished from the chancre or syphilitic sore.

Lee* drew attention to the constant and characteristic difference which existed between the secretions of the two sores—that of the chancroid or soft sores, presenting numerous pus globules under the microscope; while that of the indurated chancre showed only epithelial scales, no pus globules being present, unless the sore had been artificially irritated, and related cases where the other signs being doubtful, he was able to make a diagnosis of the truly syphilitic character of the sore by its scanty non-purulent secretion.

In 1856, M. Dron had collected 111 cases, including those of Bassereau, in which “confrontation,” as it was called, had been carried out, and in all which it was proved that the type of the chancres remained unchanged in passing from one individual to another.

Two years later, Fournier, in bringing out a new edition of Ricord’s lectures, detailed 59 cases of indurated and 39 of the soft chancre, in which the origin of each from a similar sore was proved, bearing out Bassereau’s law; and further investigated the question, first raised by Clerc, of the effect of the contagion of an indurated chancre upon a system already syphilitic, which was found to be that very frequently no sore was produced, but that when one was produced, it was *not* indurated. The question then arose, was this non-indurated sore identical with the ordinary soft sore? If so, the two sores were only modifications of one another, produced by the previously syphilitic state of the patient’s system. Fournier decided this point by collecting cases, in which sores of this description had become in their turn the source of contagion to others; and found that in all cases, not a soft but a well-marked indurated chancre was produced when the system of the newly-infected individual was healthy previously; showing that while the form of the sore was modified by the syphilitic condition of the

* Medico Chir. Trans. vol. xviii. p. 497.

system, yet that the poison remained the same, and asserted its true character as soon as it was lodged in a healthy system, thus still further supporting the view, that the two sores are distinct morbid processes produced by different poisons.

This question, viz., the unity or duality of the chancrous virus, was now hotly contested, both on the Continent, in England, and America. It is necessary to be explicit as to what the question at issue really is, for it seems to have been strangely misunderstood. A recent distinguished writer on syphilis, in an otherwise able article on this subject,* confounds the question of the duality of the chancrous virus with that of the duality or plurality of syphilis, which Carmichael advocated, but which has never been advanced by any author since. If the duality of the chancrous virus be admitted, it simply separates the soft sores altogether from syphilis, which is just as much one disease as scarlatina or small-pox is.

The question is, Are there two distinct species of venereal sores? one of which is simply a local disease, never affecting the constitution, and having nothing in common with syphilis, except that they are propagated in the same manner; the other, the initial lesion of syphilis, the first of a long train of symptoms, produced by the introduction of the syphilitic poison into the blood? If this essential difference between the two sores be admitted, the question of the duality of the chancrous virus may be admitted also; the question at issue, it must be clearly understood, is, *not* the duality of syphilis, but the duality of venereal ulcers, some being syphilitic, others not.

At the present time the opinion of the profession is divided on this important point. The *unicists* contend that all sores spring from the same poison; that however modified in form by the position they happen to occupy, and the temperament and habits of the patient, they may all be followed by constitutional syphilis—in fact, that all primary venereal sores are syphilitic, and that the fact of their being followed or not by general symptoms, depends not upon the nature of the sore, but upon the constitution of the

* "Reynolds' System of Medicine," Art. Const. Syphilis, p. 288.

patient and other modifying circumstances. The *dualists*, on the other hand, believe that there are two distinct kinds of chancrous poison, one of which produces soft, suppurating sores, (chancroid,) which is a purely local disease, incapable of infecting the system; the other is the poison of syphilis, which produces in the first place an indurated chancre, and is always followed by other symptoms of syphilitic blood poisoning. Between these two opposite views, many surgeons take a middle course, and believe that while there is a marked difference between the hard and soft sores, the latter being seldom if ever followed by general syphilis, yet that this difference is not to be attributed to a different poison, but to an imperfect inoculation of syphilitic matter; that as in vaccination abortive sores will sometimes be produced, so that soft sores are examples of abortive syphilitic inoculations.

In order to place this subject in a clear light, I will briefly state, first, the grounds upon which the dual theory rests; secondly, the objections advanced against this by the unicists, and then consider which theory offers the most reasonable explanation of the facts as admitted by all.

The argument of the dualists is simply this:—Careful clinical observation and experimental inoculation alike show that the soft sore differs in every respect from the indurated chancre. Thus the soft sore is fully and characteristically formed upon the third day after infection, while the indurated sore passes through an incubation period of two to three weeks before it is fully formed. Again, when formed, the *secretion* of one is distinctly purulent, while that of the other is not; the true or syphilitic sore being characterized by the effusion of plastic lymph, the other by suppuration, which distinction still appears when in either case the neighbouring lymphatic glands become affected; the *bubo* of the hard chancre is hard, indolent, and seldom or ever suppurates, while that of the soft sore is inflamed from its commencement, and invariably suppurates. The two sores differ in their *form* as in their secretion; the simple is excavated, with sharply cut edges, and a sloughy surface, while the indurated is smooth, with sloping

edges, and a clean red surface. They differ, too, in their *number*, several of the simple variety being almost always present, while the indurated is usually single. Of 254 cases of simple venereal ulcer collected by Fournier, 206 had several, while 48 were single, while in 456 cases of indurated chancre, 341 were single. Add to this the fact, that the well-marked, characteristic soft sore is never followed by any constitutional symptoms, while the indurated sore always is so followed, and we have the clinical features of the two in distinct contrast.

But the results of experimental inoculation is not less striking. The secretion of the soft sore inoculated in any part of the skin of the person who bears it, will produce a similar sore, and this may be repeated hundreds of times with the same result. The indurated sore, on the contrary, cannot be readily reproduced upon the individual who bears it; according to different experiments two to five per cent. of the inoculations alone succeeding upon the person who bears the chancre, or upon any person who has constitutional syphilis. If artificially irritated, a purulent secretion may be produced, which is inoculable; but the characteristic indurated sore will not result, but a soft sore, which, however, as shown by Fournier, differs from the chancroid sore in producing upon a second inoculation not a soft, but an indurated sore. That these differences do not depend upon any personal peculiarities is proved by the readiness with which the soft sore may be inoculated upon a patient having an indurated one, when the two sores will pass through their several stages side by side, remaining perfectly distinct.

To the distinctive differences already mentioned, may be added the effects of treatment. The soft sore readily yields to a local treatment, while the indurated sore will not do so, no matter how energetic or complete such may be, but acknowledges at once the influence of constitutional remedies.

Differing thus in the most essential points from one another—in the period of their formation, their secretion, their form, their numbers, their complications, their results, and in the treatment

they require—the logical inference is, they are produced by different causes. Diday thus forcibly puts this argument, exclaiming —“ Gentlemen, when I see—

<i>Upon one side,</i>	<i>And upon the other hand,</i>
An indurated ulcer, with an incubation of two or three weeks ; with adhesive inflammation ;	A soft ulcer ; without any incubation ;
not inoculable upon the person bearing it ;	accompanied by suppurative in- flammation ;
not capable of being destroyed by treatment ;	reinoculable indefinitely upon the person bearing it ;
exclusively affecting mankind ;	when completely destroyed by treat- ment, entirely checked ;
constantly accompanied by an indo- lent enlargement of the glands ;	transmissible to several kinds of animals ;
producing always, after a fixed term, a series of general characteristic symptoms ;	not constantly followed by an af- fection of the glands, but when followed, producing suppuration.
perceptible of the curative influence of certain general specific reme- dies ;	its action always confined to local effects ;
affecting only once the same indi- vidual in the same manner.	not at all affected by specific re- medies ;
	reproducing itself with the same in- tensity upon an individual when- ever he is inoculated with it ;

My reason—my simple common sense—refuses to believe that the two are produced by the same morbid principle.”*

The objections urged by the unicists against this conclusion are numerous. In the first place, it is asserted *that soft chancres are followed by secondary syphilis* ; and cases are related in which, undoubtedly, true syphilitic symptoms followed a sore which presented no distinct induration, or, it may be, no induration at all. But, as Laucerceaux says,* in reply, this only proves that *induration* is not an invariable characteristic of the syphilitic sore. I have satisfied myself, from my own observations, that *induration* may be absent,

* Histoire Naturelle de la Syphilis, p. 9.

† Tratte Historique et Pratique de la Syphilis, p. 97.

while the other characteristic signs of the infecting chancre still point out the true nature of the sore. In fact, the infecting chancre without induration, wants all the characters of the chancroid sore—it is not excavated, it has no copious purulent secretion, &c. Until a case can be quoted where *characteristic soft sores* stand plainly as the initial lesion of constitutional syphilis, the objection that secondary syphilis sometimes follows a non-indurated chancre goes for nothing.

Again: it is urged, *that the two sores produce each other*, the soft chancre in a female producing an indurated one in the male; and that the indurated, in the same way, produces a soft sore. The answer to the first of these assertions is, that it is as yet quite unproved that characteristic chancroid, or soft sores, have ever given rise to an indurated chancre; but it may at once be admitted that sores in the female which do not present the sign of induration at all, are really syphilitic, and will produce well-marked indurated chancre in the male. With regard to the second assertion, viz., that the indurated sore produces a soft sore, it is well known that the secretion of the indurated chancre, if inoculated into a system *already syphilitic*, will produce a soft sore; but this sore produces, in its turn, not a soft, but an indurated sore, showing that its true character was only masked by the existing syphilitic state of the system.

Boeck, of Christiana, Bidentkapp, and Hjort, are in the habit of inoculating the secretion of the indurated chancre, when artificially irritated, for the purpose of so-called syphilization, and produce numerous sores like soft chancres. Professor Boeck* maintains the unity of the two kinds of sores, not so much upon the ground of the appearance of the sores thus formed, as upon the fact which he states from repeated experience, that when *immunity* is obtained by inoculation from an indurated sore, it is also obtained from the soft sore; arguing from this that inasmuch as scarlatina does not protect from measles, because these fevers arise from different poisons, so, as the inoculations from the indurated sores *do* protect

* Evidence before Ven. Com., p. 353.

from the soft sore, therefore they must arise from the same poison. But, unfortunately for the professor's argument, it involves a theory which very few but himself are able to believe—viz., that a virus from the sores produced by inoculation made upon a syphilitic patient, enters the blood, and acts upon the system, like the poison of scarlatina or measles. A patient having the poison of syphilis already in his system, is thereby protected against it; and there is not the very least proof that in the case of these inoculations, any poison whatever is absorbed into the system. It is generally believed, as suggested by Professor Faye, that the true explanation of *immunity* is simply, that the over-stimulated skin loses for a time the power of re-acting to a morbid stimulus so frequently applied. If this be so, the argument for the unity of the two sores, drawn from immunity, cannot have any weight with us—particularly when we remember that a patient who has constitutional syphilis, although protected thereby from contracting fresh indurated chancres, may contract any number of characteristic soft sores, if the skin has not been rendered insensible by repeated inoculations.

Much the most practical difficulty in the way of the theory of two distinct chancrous poisons, is the undoubted fact, that in the early stage of either kind of sore it is not possible to tell what may be their future character. A patient presents himself with a number of soft sores; they are plainly belonging to the simple local variety; but experience compels us to refrain from telling this patient that he will not have secondary syphilis, for one of these sores may, at the end of about three weeks, become hard, and, assuming the other characters of the true syphilitic sore, will be followed, in due time, by constitutional symptoms. This led to the conclusion, that all the sores were derived from the same poison; some of them proving *abortive inoculations*, while one or two became true chancres. And what especially favoured this explanation was the well-known fact, that by the side of the true small-pox or cow-pox pustule, there frequently appears a false or abortive sore, which differs from the true, both by the period of its

incubation as well as by its duration. Here, however, the analogy ends; for the abortive pustule of these diseases does not possess the fixed and marked characters which the venereal soft sore has of its own—which points it out as a distinct, individual disease, capable of re-producing itself again and again by inoculation, and capable also of contaminating the neighbouring lymphatic glands, so as to infect them also with an inoculable poison.

In view of these facts, Rollet suggested that the true explanation might be, not that the same poison produced two distinct and different diseases, but that the two poisons being *mixed*, were inoculated together, and each produced its own proper action—that of the chancroid producing soft sores in two or three days; that of syphilis producing an indurated chancre in three weeks. This explanation (although characterised as an ingenious device to harmonize facts with a too rigid theory) not only satisfactorily explains the results of clinical observation, but appears upon consideration to exhibit very probably the true state of the case; for the two poisons, if they exist, must long since have become mingled together, and being inoculated by the same act, will naturally take effect upon the same spot, a *mixed chancre* resulting, which does not show the characters of the two sores at the same time, but exhibits at first all the characters of the soft or chancroid sore, and subsequently those of the true syphilitic chancre, when the time of its incubation has elapsed. The two poisons thus remaining perfectly distinct, although mingled together in the same secretion, that of the soft sore may become the means whereby the other finds an entrance into the system, as it is the more easily inoculated—the sore formed by its action being a ready door of entrance for the more subtle virus of syphilis.

An *historical* objection may be raised to the radical distinction now made between the two kinds of sores, to the effect that, if such a complete separation in origin, course, and results, existed, they must have been fully recognised long since. To this Bassereau replies by quoting from the writings of those who describe syphilis at the end of the fifteenth and commencement of

the sixteenth century, when it either for the first time appeared in Europe, or burst out with a new and terrible energy. All those who described the *Morbus Gallicus*, as syphilis was then called, considered it as totally distinct from the ulcers of the generative organs, and buboes, which were well known and often described previously. In the works of John de Vigo, who wrote in 1510, each appears under a distinct heading, and they are looked upon as separate diseases—the induration characteristic of the syphilitic chancre being accurately described. Soon after this time, they began to be confounded together; Nicolas Massa, in 1514, suggesting that as all kinds of sores arose under the same circumstances of infection, they must be all the same disease. The confusion thus introduced continued to the present time; so that, in separating these two again, we are but returning to the opinion held at the time when syphilis being a new disease, there could be no difficulty in deciding whether it was or was not the same as that which was well known previously.

Admitting that the two kinds of sores form now distinct species, some think they may have had the same origin, and have gradually, through the action of modifying circumstances, become separated. My friend, Dr. M'Donnell,* suggests that as the Darwinian theory accounts for the origin of distinct species of animals from a common ancestor, so these two distinct species of venereal disease "may have had, in past times, a common origin; but that the lapse of years, and circumstances which have not yet been determined, have given to them certain distinct characteristics; so that, like the dog and the wolf, the simple and the syphilitic sores may be regarded as specifically distinct."

The arguments upon both sides of this question being now before us, we may next inquire the opinions generally held upon this subject by those who are constantly observing and treating these forms of disease.

The opinion adopted by almost the entire French school, is that of the essential distinction between the two diseases. Ricord, in

* *Medical Press and Circular*, Feb. 5, 1868.

1859, writes thus—"The simple chancre is a local lesion, without influence on the economy; it is a *chancre without syphilis*. The indurated chancre creates a diathesis—engenders a general state—a morbid temperament; it is the initial expression of a constitutional affection; it is the *exordium of syphilis*."* With characteristic caution, however, this celebrated author declines to follow these views to their legitimate conclusion, and proclaim himself a believer in a double virus. Since this time, he has, it is stated, pronounced his adoption of this theory. But the essential distinction between the two forms of sore is *the point*, and this his lectures forcibly teach.

Diday, Rollet, Guerin, Lancereaux, all ably support the same view, the only supporters of *unitism* being Melchoir-Robert, Langlebert, and Auzias-de-Turrenne, the author of "Syphilization."

In Germany, opinion seems much divided. Sigmund, of Vienna, while considering the sores quite distinct, yet does not fully adopt the theory of two viri, while Hebra is a determined unicist.

In England, Mr. H. Lee has been the consistent advocate of the radical distinction existing between the two species of chancre, since 1856, and has done much by his observations and experiments to support this view:—"It appears to me,"† writes this surgeon, "that on the recognition of these two varieties, types or species, call them what we may, rests the whole foundation of a correct pathology and of sound therapeutics with regard to this disease."

The Report of the Venereal Committee affords us an opportunity of estimating professional opinion on this subject in England, better than the writings of any number of individual authors could.

The conclusion to which the Committee have arrived upon the

* Ricord's "Lectures on Chancre," by Fournier, translated by Maunder, page 166.

† *Lancet*, March 30, 1866.

question of the duality or unity of the chancrous poison, may be gathered from the following. Referring to the two kinds of sores, they say:—

“The terms unity and duality refer to the supposed identity or otherwise of the poison or virus producing them. In reference to this subject, the first question arises—Can the poison which produces the local sore be identical with that which produces the syphilitic sore? The term syphilitic cannot be applied to a sore which exhausts itself in its local actions, and does not become the parent or precursor of syphilitic disease. The local sore has nothing in common with the local products of syphilitic poison beyond its ulcerative action. It may be, and not unfrequently is, the morbid product of merely contagious secretion; while its characteristic form, progress, and duration, so dissimilar from the products of other forms of local disease or injury of the genital organs, of a non-venereal origin, warrant its cause being attributed to the presence and operation of an irritant poison. Although comparatively innocuous at their source in the female, their secretions become a poison to the recipient, but not a syphilitic poison. Presuming the local sore, therefore, to belong to a different class of disease, if it be placed in juxta-position with any of the varieties of the syphilitic sore, the Committee have no alternative but to express their belief in the non-identity of the two poisons.”

The opinions given in evidence before this Committee, and upon which this conclusion is based, differ very widely. The military and naval surgeons generally stated distinctly their belief in the radical distinction existing between the simple and syphilitic sores, although many declined to commit themselves to the theory of a double virus. Amongst the civil surgeons examined, several maintained that they had not unfrequently seen secondary syphilis follow soft sores. No particulars, however, were afforded to enable any opinion to be formed of the real character of the soft sores. The high character and position of the witness induces me to quote Mr. Paget's evidence upon this subject:—

“I think (Mr. Paget says) the best practical division of sores is into hard and soft. I apprehend there is a difference in the time of incubation of each. The one is associated with one or more very hard, non-suppurating glands, and the other is commonly associated with a larger number of glands which suppurate in or about their structure.” In

answer to the question whether he has seen constitutional syphilis follow a soft sore, often, or at all, he answers—"I think if it follows at all, it is only very rarely. I cannot say in what per centage of cases, but I should speak of it as a very rare event; I believe, however, that it does follow." And in answer to the question if he considers the two kinds of sores the product of one or of distinct poisons, he replies—"I think the probability is that there are two poisons, producing different varieties of sores."

Bumstead, of Philadelphia, in his valuable work on Venereal Disease, in which the views of Bassereau and others are freely set forth, states his own conviction of the perfectly distinct character of each sore, thus:—

"For myself, in a somewhat extended field of observation during ten years of practice, I have never seen an instance of interchange of the two species of chancres. And I can recall fourteen cases, six of simple and eight of infecting chancres, in which the transmission of each in its kind was unquestionable."

I may now briefly state the views which my own experience has led me to adopt on this subject. Several years ago I determined to test by observation the view, then confidently put forward, that the soft sore was never followed by any secondary disease whatever. At this time I held the opinion that the soft sore was as truly syphilitic as the indurated chancre, but that it preceded a milder form of secondary disease; and it was with a view of publishing the results of my observations that I noted every case both of primary and secondary symptoms which came under my notice for an entire year. The out-patients at the hospital, who are seen daily, and number nearly a hundred, afforded ample field for this. It was necessary, in order to prove my views correct, that I must have at least one case of distinctly-marked characteristic soft sore, standing undeniably as the initial lesion of secondary syphilis. I met with no such case either during that or any subsequent year. In the great majority of cases I found induration more or less marked in those chancres which were followed by secondary symptoms. In some, however, there was no induration, the sore was quite soft;

but in all other respects it was like the indurated, and unlike the simple sore. In particular, I found the state of the inguinal glands a safe guide; they never presented the peculiar indurated, sluggish enlargement, except with the infecting chancre. From the experience thus gained, I was obliged to give up the idea that the soft or simple suppurating sore was syphilitic at all, and conclude that the two sores were distinct, the one a local disease, the other a symptom of a general infection of the system. At the same time I admit that induration is not a certain or constant sign of the syphilitic sore; which, however, although without induration, is quite unlike the true suppurating or simple sore. The absence of induration is frequently caused by the patient having taken some mercury previously to our examination of him, or by merely the lapse of time; six weeks or two months in some cases, will suffice to remove induration. Allowing for these, in the great majority of chancres which are followed by secondary syphilis, induration more or less marked may be noticed; and in the remaining few, when this sign is wanting, other symptoms remain which indicate the true nature of the sore.

Admitting the essentially different character of the two sores, I do not see any difficulty in admitting also that they are probably produced by entirely distinct morbid poisons. I freely admit that soft chancres may become indurated, and be followed then in due time by secondary syphilis, having noted several cases where, perhaps, five or six characteristic soft sores existed, all of which, except one, entirely disappeared under suitable treatment; this one became an indurated chancre, and secondary syphilis ensued. It does not appear to me unreasonable to believe that in these cases the two poisons were mixed, and were inoculated together, each producing its own specific effect in its own time.

The following case illustrates the existence of the two diseases in the same individual at the same time, both being characteristic of the species to which they belonged. It illustrates also a possible source of error in connecting the soft sores with secondary syphilis:—

“In the spring of 1864, a young man, a draper’s assistant, consulted me for a well-marked syphilitic eruption, accompanied by sore throat. Having made arrangements for his proper treatment, I next day proceeded to examine the precise seat and character of the primary sore. I was surprised to see pus coming from under the prepuce, and upon its retraction five or six well-marked, soft, excavated, suppurating sores were disclosed. Before coming to any conclusion as to the relation of these sores to the eruption, I made further careful search, and before long found a nodule of induration, about the size of a bean, at the frenum. I then asked the patient how long had he the suppurating sores? He answered one week. Then how long had he the eruption on his skin? He replied, three weeks. And then how long had he the lump at the frenum? About two months was the answer. The true relation of these symptoms to one another was now plain enough.”

The conclusion to which we arrive is, that there are three varieties, or species, of venereal disease—Gonorrhœa—simple or chancroid sores—and Syphilis—each of which, however complicated with other disease, or influenced by the health or habits of the patient, remains distinct from the other; each produced by a peculiar irritant or poison, reproduces that poison, and is thereby capable of communicating the same form of disease. That in no case can one of these species be produced by any other, although they may all exist in the same patient at the same or different times. Further proof than that already given of the truth of this distinction, will be afforded by the study of the special characters of each variety, the differences between them appearing more distinctly marked as the symptoms, natural causes, complications, and suitable treatment of each is examined and contrasted.

CHAPTER II.

THE SIMPLE VENEREAL ULCER, SOFT SORE, OR CHANCROID ULCER.

THESE names are indifferently applied to characterize the non-infecting sore, the symptoms, causes, complications, and treatment of which we are now prepared to study. The name *chancroid* was given by Clerk, when advancing the theory that this sore was produced by the syphilitic virus being applied to, and taking effect upon, a person already syphilitic; in fact, that it was a modified chancre, being to syphilis what varioloid is to small-pox. The observations of Ricord, Fournier, and others, showed this idea to be untenable: still, however, the name is used, and with this explanation we may advantageously employ it.

Mode of production.—The sore is produced by the secretion of a similar sore. The result of inoculating the secretion of a chancroid sore, either upon the patient himself or upon some other person, demonstrates the manner by which this ordinarily takes place. Ricord* thus describes the result of inoculation. Very soon after the introduction of the purulent secretion under the cuticle “the puncture begins to redden, and to surround itself with a slight inflammatory areola: it swells, whilst its circumference enlarges, and soon a papule is observed. At the summit of this papule the epidermis is raised, a small vesicle appears full of serosity; it increases, its liquid contents become clouded, then purulent, and a true pustule is established. This pustule is depressed at the centre, then after a time it sinks and becomes flattened. Now, one of two things happens: either the pustule bursts, leaving exposed an ulcer of equal extent, which constitutes

* Lectures by Fournier, translated by Maunder, p. 16.

the veritable chancre; or it remains intact, dries up, and becomes covered with a brownish scab, which increases in an equal ratio with the ulceration it conceals. At this period if you raised the scab you would find beneath it the specific ulceration of which I have just spoken."

Lee thus describes the effects of inoculating the matter of the soft sore:—"The inoculated point becomes red within the first twenty-four hours. From the second to the third day it becomes slightly raised, and is surrounded by a red areola. Between the third and fourth day it contains a fluid more or less turbid. From the fourth to the fifth day the pustule becomes fully formed; and from this time to the termination of the disease the secretion consists of well-formed pus."

When, instead of being artificially inoculated, the secretion is transferred by contact, the same result takes place, with the exception, that the pustular stage is seldom observable, as the cuticle is quickly broken, and the pustule is thus converted into an ulcer. It is probable, that if any abrasion of the cuticle existed the poison lodging there would produce an ulcer, without any pustular stage at all. Clinical experience, by means of examining the persons from whom the infection has been taken, confirms the results obtained by inoculation, and leads to the conclusion, that the only way in which the simple or chancroid ulcer is produced is by infection from a similar ulcer. The *form and character* of the ulcer thus produced, are after the lapse of three or four days very well marked. The little ulcers are round, varying in size from that of a pin's head to that of a threepenny-piece, with sharply cut abrupt edges, the surface covered with a tenaceous greyish slough; and each, in its earlier stage, is surrounded by a red areola. A copious, purulent secretion is poured out from them, which, when examined under the microscope, shows the usual pus globules in abundance; which, again, exhibit their characteristic nuclei upon the addition of acetic acid. There is no peculiarity showing its virulent properties, which are, however, sufficiently manifest, even without artificial inoculation; for wherever this secretion lodges

about the corona, or elsewhere, it produces other sores; so that the number of the ulcers increases rapidly, if, from neglect, the pus be allowed to remain in contact with any part for some time. The activity of this secretion is much greater immediately after the first formation of the sores than when they have remained some weeks in existence; but it seems never to lose its virulence altogether. As a result of the active virulence of its secretion, the chancroid ulcer is seldom solitary—three, four, five, or six, are usually present. Fournier found, out of 254 patients affected with simple sores, 206 had more than one; and of these, 116 had from three to six such sores.

With regard to the comparative frequency of the simple and syphilitic sores, there can be no doubt that the simple are much the most common. Fournier believes them to be in the proportion of 2 to 1; but it is probable that this varies very much in different localities, and in the same place at different times. The observations of military and naval surgeons in different parts of the world, attest this.

The conditions which favour the production of the chancroid, when the infecting matter has been applied, are—an abrasion of the cuticle, or a very thin and vascular skin. Ricord taught that all parts of the body were capable of becoming the seat of this sore, with one remarkable exception, viz., the head and face. He states as a fact, that he never met with such a sore on this region, while he has met with hundreds of hard chancres upon the lips, face, &c. There is no doubt that Ricord's observations, as a matter of clinical observation, are perfectly correct, and that the soft sore is seldom or never to be found on the head; but it does not follow that there is any local inaptitude in this part of the body to re-act to the poison, if applied there. Rollet found that the pus of the soft sore, when artificially inoculated on the head and face, produced the characteristic sore in the usual time. Bassereau and others observed the same in several instances; so that the clinical fact that the soft sore is not found in this region, while the indurated very commonly is, must be otherwise explained. This ex-

planation appears to be, that the face and head are not likely under any ordinary circumstances, to come in contact with the pus of the chancroid; while the production of the indurated sore is readily accounted for now that we know that the secondary ulcers which so commonly appear on the lips may produce it.

From the inoculations practised by the advocates of syphilization, we learn that the chancroid is more readily produced in some regions of the body than in others. In the thighs, the ulcers were large, and had a tendency to spread; while on the sides of the chest they were small, and healed quickly. And, consequently, this latter region is chosen by Professor Boeck and his followers, as the seat of their inoculations.

A remarkable fact in connection with the natural history of the chancroid ulcer is, that after a number of inoculations have been made with the secretion of certain sores, their power of action ceases, and no more sores are produced upon the patient. If, however, the same patient be now inoculated with chancrous pus from another source, the sores will be again produced, until after four or five inoculations, these too begin to lose their power. Thus *immunity*, as it is called, is produced—immunity, that is, from the secretion of particular sores. Freke, of Hamburg, was the first to notice this curious fact. He says—“If a man affected with chancre were inoculated with the matter of that chancre on a fresh spot, and from this on a third, and so on, it will be found that the process can be repeated only a few times with success. The individual becomes habituated, as it were, to the virus, and less susceptible to its influence.”* It is now supposed by the advocates of syphilization, that a complete immunity from any chancrous pus can be obtained by repeated inoculations with matter taken from different sores. Professor Boeck declares that he has not once failed in attaining this immunity in 800 cases so treated by him. Others, however, give a very different report, either of the completeness or continuance of the immunity. Fournier states that Lindworm inoculated himself 2,200 times, and frequently after

* Graves's "Practice of Medicine," p. 767.

this number had been reached, without producing any complete immunity. And Lee succeeded in producing a characteristic sore upon a patient in which Professor Boeck had obtained complete protection, as he thought.* That no protection, even of a temporary kind, is offered to the introduction of the poison of syphilis into the system by this insensibility to the pus of the chancroid sore, was proved by Daneillson, of Bergin, who inoculated a patient affected with leprosy (in the hope of curing him!) with the pus of chancroid sores 400 times without any peculiar effect; when accidentally, the secretion of an indurated chancre was used, an indurated chancre was produced, and secondary syphilis followed in due time. The explanation of immunity given by Professor Faye, of Christiana, appears, as already stated, to be the true one. He considers it a temporary effect produced upon the skin of the part operated on by the repeated action of a particular irritant poison, just as we find particular counter-irritants become less active if repeatedly employed upon any one part.

The next step in the history of the soft sore, is the affection of the lymphatic glands which occasionally accompanies it, for very generally there is no implication of the lymphatics whatever. Of 207 cases of chancroid sores, Fournier reports 65 had bubo, and 142 had none. The superficial glands are those affected; the deep lymphatics and glands are never implicated. Why this should be, and why the specific inflammation when set up in the superficial glands never passes on from them, which it never does, has not yet been fully explained, although of the facts there is no doubt. Ricord* considers the following proposition as proved:—
“The morbid influence of the chancre (soft) is limited to the first group of glands nearest to the ulcerated surface; it never oversteps it—it never extends beyond it.” Two kinds of bubo result from chancroid ulcers. 1st. The simple inflammatory bubo; 2nd, the specific or virulent bubo, from absorption of the pus of the sore. During the first few days of the existence of the sores, the glands in one or both groins are generally slightly enlarged and tender;

* *Lancet*, April, 1866.

in strumous subjects this sympathetic irritation is apt to go on and increase so as to form a considerable swelling, which may be resolved by suitable treatment, but if neglected may go on to suppuration. It resembles a constitutional bubo, or one arising from some irritation on the foot or leg; its progress will be greatly influenced by the condition of the sores, and also by the state of health or natural constitution of the patient. That the virulent bubo of the chancroid is produced by the absorption of the poisonous matter by the lymphatic vessels and its effect upon the glands, is proved by the fact of the specific and virulent character of the pus found in the gland. The pus absorbed by the lymphatic vessels is carried up to the nearest gland, and is then stopped, it seems never to pass further; but the effect of its detention in the gland is to inoculate it, and make a series of chancroid ulcers in its interior; these secrete inoculable pus in their turn, and so this kind of bubo must necessarily suppurate; the morbid action taking place in the infected gland excites an inflammatory action in the surrounding areolar tissue, so that the bubo is formed usually of two parts—a simple external inflammation, and a specific or virulent internal one. If when suppuration has taken place, some of the simple pus from the inflamed areolar tissue be inoculated, no result is obtained; but if the gland is opened, and pus from it be used, then a chancroid ulcer is formed. It very commonly happens that the virulent pus from the gland inoculates the whole interior of the bubo, so that it is converted into a large chancroid ulcer before the bubo bursts or is opened. I have seen the discharge from such a bubo produce a number of characteristic chancroid sores on the skin of the thigh and scrotum, where it happened to lodge accidentally.

We cannot always be certain at its commencement whether it is the simple or virulent bubo which is forming, but if it begins to form very soon after the appearance of the sores, during their greatest irritation, it may be assumed to be the simple form, and well-directed efforts will probably prevent suppuration; if, on the other hand, it does not begin to form until the ulcer has existed some

weeks, then it is the bubo from absorption of the pus, and we cannot prevent its suppuration.

Ricord has pointed out the fact that the bubo may occur at the opposite side from that occupied by the chancroid ulcers; this he explains by the interlacement of the lymphatic vessels across the median line. The virulent bubo may occur at an early or late period. M. Puche had a case in which it appeared three years after the commencement of the chancrous ulceration, the true character of the bubo being proved by the chancroid ulcer which resulted from the inoculation of the pus it contained.

The *diagnosis* of the chancroid ulcer from the syphilitic chancre is a matter of great importance, if, as I have endeavoured to prove in the first chapter, the sore is always a local disease, the other the first sign of the presence of the terrible poison of syphilis. When the characters of each sore are well marked, the diagnosis is made at the first glance, but very frequently they are not so well marked as to enable us to dispense with a very careful examination into the following points:—1st. The appearance and duration of the sore. 2nd. If there be several, or only one. 3rd. The character of the secretion. 4th. Its time of development. 5th. The accompanying affection of the glands, if any exists.

In each and all these points the chancroid ulcer offers a marked contrast to the syphilitic chancre; all, however, must in many cases be taken carefully into account before we are able to pronounce positively on the true nature of the case. First, then, the greyish surface, the sharply cut edge, the surrounding areola of inflammation, are characteristic of the chancroid. Grasping the sore in the fingers, we may feel a certain amount of general thickening of the tissues, but nothing like the *induration* which is so characteristic of the syphilitic chancre, but which is not invariably present with it, and therefore its absence is not to lead us to the conclusion that the sore we are examining is simple, without first examining the other signs of its nature. 2nd. The number of the sores, particularly if the affection has lasted a week or more, will aid us. As a general rule there are several chancroid

sores; and as an equally general rule the syphilitic chancre is single; exceptions to both, however, are not very unfrequent; but the rule is sufficiently general to aid practically in making our diagnosis. 3rd. The character of the secretion. Throughout its entire course, that of the chancroid is purulent, and even if scanty, its true character is at once seen when a drop is placed under the microscope; on the other hand, the secretion of the syphilitic chancre is scanty and serous, and shows under the microscope no globules, but epitheleal scales. This, like the other points, must not be depended upon alone, for the syphilitic chancre, when irritable, becomes inflamed, and then for a time furnishes a purulent secretion. 4th. The patient will be able generally to state with tolerable accuracy the time when the sores we are examining were contracted; we know that the simple sore is fully developed in three or four days, while the true syphilitic chancre takes from ten days to three weeks for its formation, so that the patient's answer to this question is often decisive of the nature of a doubtful sore. 5th. We should always carefully examine the glands in both groins before deciding. If the glands are engaged with chancroid ulcers, a single superficial gland is found to be painful, or one or two may be slightly enlarged, nothing more; whilst with the syphilitic chancre there invariably exists a number of hard, enlarged glands, like almonds, under the skin, without any sign of redness or inflammation. The characters of the syphilitic chancre will be more fully described when it is under examination, but sufficient has now been said to point out the grounds upon which a safe diagnosis may be made. Taking these different signs into account, we are generally enabled in a few minutes to pronounce decidedly upon the nature of the case, and state that the sores before us are either simple, local chancroid sores, or, on the other hand, the true syphilitic chancre. It is important, however, to remember that although we may find no difficulty in pronouncing the sores to be simple chancroid ones, yet that we are not warranted in telling our patient that he will not have secondary syphilis. We may be certain indeed that he will not have syphilis

from simple sores, but he may have both diseases at the same time; the poison of syphilis may have entered his system with that of the simple sore, and in its own time exhibit its presence, by causing one of the simple chancroid ulcers to become indurated, and present the other signs of the syphilitic chancre. On this account we can never safely tell our patient that he is free from the danger of syphilis, until such a time has elapsed as to make it certain that if the virus had been there, it would have produced its effects.

In general, we can speak decidedly as to the nature of the sores. I have occasionally met with cases in which it was impossible at the first examination to decide, but these are only the exceptions to a general rule; and although in making this distinct diagnosis, we cannot pronounce our patient free from the danger of syphilis, yet it is no unimportant matter to be able to assure him that the disease, so far as it has gone as yet, is nothing but a local ulceration, which requires nothing but suitable local treatment for its cure.

Many experienced surgeons who were questioned upon this subject by the Venereal Committee, while fully recognising the distinction between the two kinds of sores, yet stated their inability to tell one from the other in the early stage. I cannot help thinking that in saying this they meant, that they could not say in the early stage whether syphilis would follow or not (which, as already explained, I fully admit) rather than that they could not say to which species the sores belonged in their early stage, all their characteristic signs being better marked in their early than in their later stage. Under doubtful circumstances we may appeal to *inoculation* to aid our diagnosis; the secretion of the chancroid will produce a similar sore upon any part of the patient's body, whereas we will fail in producing any sore from the serous secretion of the syphilitic chancre; under these circumstances a successful inoculation becomes the means of informing us that the disease is *not* syphilis, the very opposite conclusion to that which a few years since surgeons arrived from the same fact. Practically, however, inoculation

is not of much use; in the first place, the signs of the two species of sores, if all taken into consideration, are usually quite sufficient to make the diagnosis; and again, when the indurated chancre happens to be inflamed, when the diagnosis may be difficult for a time, then the purulent secretion furnished by it, when inoculated on the patient, produces a sore resembling the chancroid, so that for the purpose of diagnosis it will but seldom be advisable to resort to it. Ricord finds no difficulty in distinguishing the two sores. He says*—

“I assert that the signs, by the aid of which these two varieties of the chancre may be distinguished the one from the other, are so decided, so plain, so absolute, that a sure diagnosis may generally be made at the first examination, and that those rare and exceptional cases which might induce an experienced practitioner to suspend his judgment at first, will be cleared of all doubt in a few days.”

The *prognosis* of the chancroid ulcer, in its most important aspect, has been already decided. When we have made our diagnosis, we know that we have to do with a local disease only. As Ricord expresses it—“The simple chancre, with soft base, is an affection merely local, which limits its effects to the region which it attacks; which never exercises a general influence upon the system; which is never accompanied by constitutional affections. In other words, it is a chancre which does not infect the economy—a chancre without syphilis.”

In giving an opinion, however, upon the prognosis of a case of simple sores, we must take the local complications into account to which this disease is liable. In the first place, as already stated, a certain minority of cases are affected with suppurating bubo. 2ndly. Phagedenic ulceration may attack the original sores, rapidly destroying all before it; and if an open bubo exist, it may attack it too, causing fearful, and even fatal, destruction of tissue. 3rdly. Gangrenous inflammation may come on, involving the prepuce, and perhaps the glans, and accompanied by serious constitutional disturbance. And, 4thly, the ulcers, if neglected, may

* Lectures, by Fournier, translated by Maunder, p. 34.

become chronic, resulting in an intractable kind of ulceration, which may torment and reduce the patient for years.

The fact of such complications arising under certain circumstances, (which will be fully examined when these complications are under consideration,) will impress us with the necessity of at once adopting such *treatment* for arresting the action of the irritant poison of the chancroid sore, as experience has shown to be most effective and decisive.

The first proposition which may be laid down to guide our treatment of the simple sore, when uncomplicated, is, that being a local disease, produced by a local irritant, it will require local, not constitutional, treatment; and so at once, in this large class of cases—acknowledged by all to be much more numerous than the other kind of sore—mercury is for ever laid aside, and pronounced not only unnecessary, but prejudicial. This important practical point is now almost universally acknowledged, however the theory may still be objected to. In considering, therefore, the treatment of this sore, when uncomplicated, we have to consider local treatment only. The plan known by the name of the “Destructive Method,” is here evidently indicated. We have a local irritant producing ulceration, and capable of absorption into the neighbouring lymphatic glands. If we completely destroy the tissue where this process is going on, we will destroy the poison, and so its effects. Various caustics have been used for this purpose; in selecting which to employ, we should bear in mind—1st, That it must be sufficiently *powerful* to completely destroy the surface of the sore; and, 2ndly, it should be so *manageable* as not to endanger the destruction of the sound parts. Strong nitric acid appears to me to possess these necessary qualities more than most other caustics. It must, however, be carefully handled. The mode of using it is as follows—Dry the sores with a bit of lint; then dip a stick of hard wood, nicely rounded at the point, into the acid. Before applying it to the ulcers, see that the point is just wet with the acid, a drop slowly forming upon it; then apply it so as to just cover each sore with the acid. If there are many, and the disease has

existed some time, it requires determination and care to touch each part. The pain produced is very sharp, but it passes off very quickly, and we can greatly mitigate it by pouring cold water over the part when the acid has lain on the ulcer a moment or two. In a case where the surface to be touched with the acid is extensive, the process may be completed at a second visit.

The immediate effect produced by nitric acid applied in this manner, is to produce a slough of the surface of the sore, which will separate in two or three days, leaving, if the caustic has been sufficiently well applied, a non-specific, healthy little ulcer, which will quickly heal, if the patient be otherwise in good health.

When the sores are recent, one application of the acid is generally sufficient; but if some weeks have elapsed, we will find it necessary to repeat the application, it may be two, or even three times. The indications that this is necessary are—1st, the ash-coloured surface of one or more of the sores, and their characteristic sharply-cut edge, still remaining; and, 2ndly, the pain, which remains, more or less, as long as the specific character of the sores continues, but ceases when they are converted into simple ulcers.

There are several other kinds of caustics which may be employed in place of nitric acid. Equal parts of chloride of zinc and flour forms a very good caustic, and is employed on the Continent under the name of "Canquoin's Paste." It is best applied spread on a piece of lint cut to the size of the part to be burnt. It is said not to cause much pain. It is a sufficiently powerful and manageable caustic, but it is difficult to keep it ready for use; the chloride of zinc, being a deliquescent salt, requires to be kept in a dry place, and if mixed with too much flour, it forms into a hard mass.

Ricord recommends and adopts a paste formed of sulphuric acid mixed with powdered vegetable charcoal in the proportions necessary to form a half-solid paste. He says—"This paste applied to the chancres, dries quickly, and forms a kind of solid, black crust, which remains adherent to the tissues, combines with them, and is not detached until after the lapse of several days." He acknowledges that it causes severe pain, but says it is less than that

produced by nitric acid, or the actual cautery, and less persistent than that produced by the Vienna paste. This latter caustic is composed of five parts of caustic lime with six of caustic potash. It is, perhaps, rather too powerful a caustic for the purpose, and gives severe and persistent pain. The mixture should be kept dry, in a well-stoppered bottle; and when required for use, a little of it can be made into a paste, on a slab or plate, and applied by means of a narrow spatula, or other suitable instrument.

When the cauterization of a chancroid sore has been thoroughly accomplished, there is usually little more to do. Immediately upon the destruction of the specific character of the sore, a healing process commences; the change which takes place in the appearance of the sore assures us at once that the poison which was producing the spreading edge and sloughy surface, has been destroyed, for now the margin is contracting and the surface granulating. The sooner the thorough cauterization of the sore takes place the better; there is no advantage to be gained by delay, and a single day may add some complication which will make the case very much more serious.

Sometimes, however, although cauterization has been thoroughly accomplished, and the specific character of the sores has quite disappeared, yet still they will not heal. This arises from the patient's general health being disordered. The following will illustrate this:—

A gentleman called upon me about two years ago, who had been placed under the influence of mercury when in the country, for a number of chancroid ulcers round the corona and on the glans. Finding himself getting worse, he came to town. The sores had existed three weeks when I examined them. After one or two applications of the nitric acid, they lost all specific appearance; still they would not heal. The patient was of a nervous, irritable temperament, and the effect of the mercury apparently was to increase this. The sores were not fully healed for five or six weeks.

Another gentleman was under my care about a year ago, who formerly, he stated, had syphilis, but then had chancroid ulcers. He was pale and anxious, his pulse rapid, and his digestion disordered. The

ulcers had existed some weeks when I first saw them. Attention to his digestive organs, and tonics, did some good; but it was not until he went to the country that the sores healed, which they did completely when he had been a few weeks there.

As a lotion to the sore after the application of the acid, a weak solution of chloride of lime will be found useful (ʒi. to ʒiv. of water.) But in cases, such as I have just mentioned, when the process of healing is delayed, nitrate of silver will be applied with benefit; this caustic is quite too weak for destroying the sore, it should be reserved for stimulating a sluggish but natural ulcer.

We may now consider the *treatment of buboes* when they form. When swelling and tenderness of the inguinal glands first appear, as we cannot tell whether this arises from a simple inflammation or the absorption of the poisonous pus, we should endeavour to obtain resolution. In the former case we will probably succeed, in the latter we will not. It is well to explain the object and probable result of the treatment to the patient, who otherwise might blame us for a suppuration which could not be prevented.

Rest in bed is, perhaps, the most powerful means of any we can employ in the early stages of an inflammatory bubo, to ensure resolution; two or three days may often suffice; but if this be neglected, other means will often be found useless. With this essential first step, we may employ such constitutional treatment as the state of the patient demands—generally a saline-aperient, and a diaphoretic with opiate at bed-time, will be of use. Leeches may sometimes be of use, but are objectionable in most cases, for most of the simple buboes occur in strumous or over-grown youths, with whom any abstraction of blood is objectionable; and in the case of the virulent bubo, it can do no good, and the bites are apt, when the pus is discharged, to be converted into chancroid ulcers. Pressure may be employed with advantage as soon as the acute tenderness has subsided. A pad of lint and the spica bandage answers remarkably well, but it will always be well to secure the pad by straps of plaister in its proper place, otherwise it will probably fall out, and the bandage will be useless. “Ricord’s pad

for buboes" is a piece of rounded wood, covered with leather, which is pressed against the tumour by means of straps round the waist and thigh.

Hunter employed blisters in the subacute stage, and dressed the surface with mercurial ointment; others apply a caustic solution of the bichloride of mercury, (20 grains to the ℥i.,) to the blistered surface, which causes very severe pain. Acton prefers repeated applications of the tincture of iodine. The liniment and tincture of iodine may be advantageously combined in equal parts, and this forms a very useful application, which may be applied when the patient is in bed, and the bandage put on when he is allowed to get up.

Sir Henry Thompson recommends the tumour to be painted with a solution made of ℥iii. of nitrate of silver and 20 minims of strong nitric acid to ℥i. of water. Others apply the solid nitrate of silver, and this I have found of use in aiding the dispersion of the swelling which lingers after all acute symptoms have subsided. All these measures, however, are only useful while the glandular swelling is still in its first stage. When it becomes evident that pus is forming, we had better, I believe, abandon any attempt to check the inflammation by such means, and seek rather to hasten suppuration, and relieve the tension and swelling of the parts by warm poultices of linseed-meal, which may be repeated four or five times in the twenty-four hours; and as soon as we are certain that suppuration has taken place, we should lose no time in opening the abscess, for its cavity will enlarge every day, and there will be much more danger of subsequent burrowing when the sac is large and loose. Three different methods of opening are employed. 1st, by caustics; 2nd, by multiple punctures; 3rd, by free incision.

Caustic is, I conceive, very inferior for this purpose to the knife: time is lost, the patient is subjected to great pain, and no advantage is obtained.

Multiple punctures are recommended by Mr. Langston Parker, who injects through one of the punctures a weak solution of sulphate of zinc. Eight or ten punctures are made through the thinnest part of the skin with a grooved needle.

Vidal, on the other hand, recommends multiple small incisions round the margin of the tumour, through which the contents are allowed to drain away, pressure being subsequently applied.

I confess these plans seem to me inferior to that by a free incision, which possesses the advantages of at once giving exit to the virulent contents of the bubo, and also of allowing us to examine and treat its surface, which frequently bear all the characters of the chancroid ulcer. The part having been carefully shaved to facilitate the subsequent dressings, the knife should be introduced at the lowest part of the swelling where fluctuation is perceptible, and carried quickly up to its highest part. If burrowing has taken place in any direction, the sinus should be laid open, so as fully to expose the whole cavity of the bubo. This having been accomplished, and the hemorrhage having ceased, we should next examine the surface. If any glands are lying nearly loose in the cavity, they may be advantageously removed. The whole may then be freely washed out with a solution of chloride of lime, (3ii. to ʒviii. of water,) which will be best done by means of a syringe, which will inject it into every part of the cavity. If there is much heat and swelling of the surrounding parts, a poultice may now be applied. If not, the following mode of dressing may at once be applied:—

The whole cavity of the bubo is to be carefully filled with small pledgets of lint, well soaked in the chloride of lime solution, and then the edges of the wound are to be supported and drawn together by a few broad straps of plaister. The discharge, which is generally very copious, may necessitate the dressing being renewed twice a day; but this will not be the case for more than a very few days. Under such treatment, the surface will, in many cases, begin to put on a healthy aspect, and the cavity to fill up and rapidly close; but not unfrequently we will find one or more parts of the surface refuse to put on a healthy aspect, and obstinately remain discharging a copious purulent secretion. The poison of the chancroid has so deeply affected the part, that a more effectual means must be used for its removal. A caustic

sufficiently powerful to form a slough of the affected tissue is required, and we may choose from any of those already mentioned. I have found, for this purpose, a stick of the potassa-cum-calce answer very well, as it can be readily applied to any point required, and is powerful enough to form an eschar with a few applications. By the judicious but decided employment of an escharotic in such cases, we will save the patient much time and suffering.

The open bubo may, like the inguinal sore, take on a phagedenic action, and spread rapidly, endangering important neighbouring parts. This formidable complication will be considered with the subject of phagedena in the next chapter.

CHAPTER III.

COMPLICATIONS OF THE SIMPLE VENEREAL ULCER, OR
CHANCROID SORE.

THE chancroid sore may be rendered a much more serious disease than it ordinarily is, by the occurrence of certain morbid conditions which arise, not from the poison of the chancroid itself, but from other conditions which influence the patient's system at the time when this poison has taken effect upon it. I have already referred to these complications when speaking of the prognosis of a case of simple sores, for the possibility of their occurrence must not be forgotten in estimating the probable course of the original disease. It must, however, now be clearly understood that there is nothing peculiar in the morbid conditions about to be described which connect them with chancroid sores; they complicate the syphilitic chancre sometimes, and some are at times produced by causes entirely of a non-specific kind. They may, however, be most suitably considered here, inasmuch as they are more frequently associated with chancroid sores than with any other disease; and again, because they are never produced by the presence of the syphilitic poison in the system, and therefore they are more likely to be understood if examined before entering upon the study of syphilis at all.

The conditions to be described may be classed as follows:—

- 1st. Epithelial growths or warts.
- 2nd. Inflammation of the prepuce and penis.
- 3rd. Phagedenic and serpiginous ulceration.

The first demands but a few words of notice.

Warts occur on the generative organs, as they do elsewhere, as the result of some local irritation, which may or may not be of a

venereal kind. The copious secretion of chancroid ulcers, particularly when neglected and allowed to continue unchecked for a length of time, not unfrequently excites them; they present a peculiar, and, to an unaccustomed eye, a rather alarming appearance at first sight, being of a vivid red colour, and sometimes attaining such a size as to distend the prepuce, and when this is drawn back, they stand out round the glans penis.

Sometimes there may be only two or three dry, brown little warts, without either the rapid growth or the vivid colour which characterise the more active variety; one, however, is as much the result of the chancroid sores as the other.

Their surface is rough and fringe-like, and bleeds readily. A microscopic examination shows them to consist almost exclusively of epithelial cells; they appear to be contagious, at least when irritated. Mr. Paget relates the case of a gentleman who had a small, dry wart on his prepuce for several years. He married, and soon afterwards his wife became affected with numerous warts in the vagina.* Sir Astley Cooper relates a similar case.† Evidently well supplied with blood-vessels, these growths are apparently very scantily, if at all, supplied with nerves, as their sensation is very slight, even when freely cauterized. There is no difficulty in their diagnosis; their prognosis is always favourable, if the surgeon understands them to be a purely local disease, having nothing whatever to do with syphilis. The treatment required is sufficiently simple; in the first place, to remove the irritating cause. This, in the slighter cases, will be enough to cause the warts to disappear. When very large and exuberant, however, it will be necessary to remove the warts themselves, and this can be safely and readily effected by the same powerful caustic which we employ for the chancroid ulcers. Nitric or any strong acid will cause their disappearance after one application, and give little or no pain. Mr. Acton recommends a powder composed of the "Pulv. sabinæ and pulv. aeruginis," equal parts, to be sprinkled on the warts daily,

* Holmes' Surgery, page 771.

† Sir A. Cooper's Lectures, p. 536.

very high, we can usually reduce it in a day or two by first placing the patient on his back in bed, to which he must be strictly confined, and keeping a piece of lint constantly wetted with lead lotion round the penis, which it will be well in many cases, where there is much engorgement of the vessels, to keep erect by means of a cylinder of stiff pasteboard, which, resting on the pubes, may readily be kept in position by a bandage attached to each side of the bed. It should be just wide enough to hold the inflamed penis with its wet lint around it, and thus keep it constantly erect, by means of which the distended vessels will be aided very much in unloading themselves of their contents. At the same time, it will be necessary to inject, through the orifice of the prepuce, a weak solution of chloride of lime, or other suitable injection—tepid water will do—three or four times in the twenty-four hours, in order to clean out the discharge which collects beneath the prepuce, the retention of which, favoured by the erect position of the penis, would keep up inflammatory action, and, in the case of the chancroid ulcer, would be spreading the disease. In conjunction with this local treatment, we must employ suitable constitutional measures. This will usually be, at first a saline aperient, and subsequently a diaphoretic and sedative mixture, such as the aqua-ammonia-acetatis, with a few drops of Battley's sedative solution of opium in each dose. With such means, local and general, the milder cases will be quickly relieved, and we will soon be able to retract the prepuce sufficiently to ascertain the nature of the originating disease, and thus to proceed to its treatment; but the more severe and acute cases in which gangrene threatens demand more active measures. Leeches are not suitable, the skin being so much inflamed; nor is circumcision, in so inflamed a state of the parts, likely to turn out well. The best course to be adopted, if the measures I have already described are insufficient to check the inflammation, is at once to perform the old operation of slitting up the prepuce. A director having been introduced beneath it until its point can be felt between the back of the glans and the under surface of the prepuce, a sharp-pointed bistoury

then should be quickly carried along it, and its point brought out through the prepuce, which is then immediately divided along its dorsal aspect in the middle line. This operation is followed by immediate relief to the symptoms, but, if possible, it should be avoided; for, in the first place, if chancroid ulcers are present, the whole cut surface will become inoculated from the sores; and, again, a very inconvenient mass of tissue, formed of the divided prepuce, will remain suspended beneath the glans-penis, a deformity which patients will resent. For these reasons, I would only resort to this operation if gangrene was imminent, when it would save the patient from much greater loss. If, after the acute symptoms have subsided, and the chancroid ulcers, if present, have all disappeared, still an elongated and hypertrophied prepuce exists, with partial or complete phimosis; I would then recommend the operation of circumcision—not merely to remove a present defect, but to avoid a cause of future disease.

When para-phimosis exists, the symptoms are so urgent as to demand our immediate interference. Here patience, with a judicious use of our fingers, will accomplish everything. Having oiled the glans, we should seat the patient opposite to us, and taking the prepuce between the finger and thumb of the left hand, seize the glans with the right, and gently but firmly compress it, while we draw forward with the other hand the tightened prepuce. This will require in a case that has lasted some time, to be kept up and steadily persevered with, for a considerable time; but it will eventually, in all cases, succeed in forcing the glans back, and at the same time drawing the contracted orifice of the prepuce forward. I have had troublesome cases, but have never met with one yet which did not yield to this without any resort to the knife, which, I believe, is seldom if ever required. The para-phimosis having been reduced, we should apply a poultice for a day or so to relieve the resulting irritation of the inflamed parts.

The treatment calculated to prevent gangrene occurring has been detailed when speaking of the proper means for arresting the progress of acute inflammatory phimosis, and this will generally be

successful if the case be treated in time. If, however, when we first see the case, a dark purple spot has appeared on the dorsum of the prepuce, just over the imprisoned glans, gangrene will result, and our measures should be directed to limit its extension. For this purpose poultices of barm are useful. They should be frequently renewed, and each time they are changed the prepuce injected with the chloride of lime, or carbolic acid solution, (1 to 40,) which may afterwards, when the slough has formed and is separating, also be used with advantage. Opium internally will be found highly beneficial, allaying the nervous irritability; and with its aid to the system and the local treatment sedulously carried out, a line of demarcation usually forms very soon, and the patient escapes with the loss of the upper part of his prepuce, nature having by this method performed our operation of slitting up that part.

The third and most serious complication remains for our consideration. *Phagedenic ulceration* consists in a peculiar process of decay, by which the vitality of the part is rapidly lost, and which, once set up, has a tendency to spread. It seems as if the products of the ulceration constantly kept up the process, for as long as the characteristic discharge from the ulcer appears, so long it continues to spread. Unlike gangrene, it has no tendency to spontaneous cure by cutting off the affected part; the tendency of phagedena is to spread on, destroying every tissue indifferently which it encounters in its course.

Supposing a case in which three or four chancroid sores exist, and that these assume phagedenic action, what we observe is as follows:—The surface of the sores assumes a dirty yellowish colour, with a dusky red margin. In twelve or twenty-four hours, all the sores have coalesced together, and formed one sore, the margin of which has not the sharply-cut, defined edge of the chancroid, but is surrounded by a dusky red tinge of inflammation. Its surface is very peculiar and characteristic; it is covered by a substance of a dirty, yellowish-white colour, closely resembling melted tallow. This slough is firmly adherent to the surface of the ulcer. It consists of the destroyed, but not detached, tissue, and

is continually being increased from below, while its surface melts away into a semi-purulent discharge, which is constantly being poured out. The phagedenic ulcer spreads, frequently with frightful rapidity, a few hours sufficing to see the glans-penis destroyed, and in a few days I have known the whole organ reduced to about a sixth of its natural size, consisting, in fact, merely of a little conical prominence, projecting beneath the pubis. This destructive ulceration is accompanied by pain of a very distressing and constant character, and by considerable constitutional disturbance of a low typhoid type, characterized especially by sleeplessness and sweating.

Phagedenic ulceration varies very much in the intensity of its action and the rapidity of its progress. Authors describe two varieties—viz., the acute or sloughing phagedena, and the sub-acute or chronic. These differ from each other in nothing except in rapidity of action; there is no *sloughing* action in the one more than in the other. These names appear, therefore, objectionable, and are unnecessary, if it be understood that phagedenic ulceration may present every variety of activity, the surface of the ulcer being in all cases covered with the characteristic dirty white, tallow-like slough; but the constitutional disturbance varying with the intensity of the local disease.

Very great variety of opinion has existed as to the cause of this kind of ulcer. Carmichael considered that it was produced by a peculiar poison of its own, and was followed by secondary symptoms of a peculiarly obstinate type, and until very lately it has been described by most authors as a kind of chancre.

That it is not a variety of chancre—meaning by this a kind of sore only produced by a similar sore, and thus passing from one patient to another—is proved by the numerous confrontations which have been now made in France and elsewhere, by which it is shown that the phagedenic ulcer may be derived indifferently from either the infecting or non-infecting sore, and may appear during the course of either, coming on spontaneously. When it complicates the infecting sore, it is followed by peculiarly obstinate and severe secondary

symptoms, as observed by Carmichael ; but to explain this it is not necessary to suppose it possessed of any peculiar virus, but simply to admit a peculiar state of the patient's system which would modify the secondary as well as the primary symptoms. That such a state of system does exist, and may be considered the cause of phagedenic ulceration, is proved by clinical observation. The following illustrates this condition :—

T. B. had been a patient in Mercer's Hospital for constitutional syphilis, for which he was placed under the influence of mercury. Finding his symptoms disappearing, although his mouth was still sore, he left the hospital, and commenced at once to drink to excess. For three weeks he continued drinking, and during this time contracted fresh venereal disease, with which, and an inflammatory phimosis, he came under my care. The character of the discharge was such as warned us to lose no time in slitting up the prepuce, when extensive phagedenic ulceration was disclosed. The patient was a young man, not more than twenty-five years of age ; his pulse was very rapid and weak ; his skin was constantly covered with a cold sweat ; his tongue was thickly coated with a brown fur ; he had no appetite, and no sleep.

Here was a man who, under the depressing influence of the syphilitic poison and a mercurial course, recklessly adds to this the debilitating influence of drink and dissipation, and under these circumstances contracts fresh venereal (chancroid) sores, and they assume at once the phagedenic character.

Similar facts constantly observed leave no doubt that an irritable and debilitated condition of the system determines the phagedenic character of what would, in a more healthy system, be simple local sores.

Phagedenic ulceration appears not unfrequently amongst our soldiers in India with great violence ; and sailors whose ships stay long enough at foreign ports to allow them to go on shore, sometimes come back with this disease, which is stated often to run a very rapid course, and sometimes even to end fatally.

Climate does not appear to cause this. Dr. Nelson, R.N., states* that this disease appeared with great virulence amongst a

* Evidence Ven. Co. page 113.

ship's company under his charge at Hong-Kong, who had just come down from the north, and were in excellent health, and that the Chinese women, from whom the disease was taken, were not affected with any severe kind of venereal sores or syphilis. Mr. Stuart, Surgeon-Major, Bombay army, states it was very bad at Poona in the year 1846, the whole penis being sometimes destroyed in forty-eight hours.* It raged both among the Europeans and the natives; so that we may conclude, that while, as in the case I have related, it may be caused by individual condition, it may also be produced by conditions which affect a whole community, being to some extent epidemic, in which case venereal sores of any kind at that time would be likely to take on this destructive character.

It is most important to recognize the character of the constitutional condition which precedes and accompanies this disease. It is not simply debility, it is nervous irritability, such as is produced by the abuse of spirits, characterised by wakefulness and loss of appetite, with a rapid pulse, sometimes very full and bounding, but always compressible. Such a state is likely to be rendered more marked by mercury, and the abuse of this medicine must, I believe, be considered as a cause of the disease, and it certainly cannot act as a remedy.

The *diagnosis* of phagedena will be always made at once, when we observe the peculiar surface of the ulcer, with its tallow-like discharge. When the nature of the disease is concealed by phimosis existing, we will be able to form an opinion by the character of the discharge—it will be a sanious fluid, like the juice of raw meat, mixed with whitish flocculi. In addition to this, the character of the constitutional disturbance will warn us that something more serious than simple phimosis exists, and warrant the slitting up of the prepuce at once to reveal the true state of the case.

The *prognosis* may be hopeful as to recovery, but we cannot tell at first how much loss of substance will take place; much will

* Evidence Ven. Co. page 84.

depend on the constitution of the patient, and much on the vigour and decision of the surgeon.

The *treatment* must be both local and constitutional; both are important, but I place the chief reliance on the former to check the progress of the ulceration. Carmichael's* mode of proceeding was as follows:—

“When a patient presents himself before me with an acute phagedenic ulcer, I, with as little delay as possible, cauterize the entire of its surface with a strong mineral acid. It is immaterial whether we select the nitric or the sulphuric—either will answer. This cauterization I perform by means of lint, rolled round a pencil of wood, dipped into the acid selected for the occasion. As the object is merely to destroy the surface, and as these powerful acids might be more destructive than necessary, I immediately direct an assistant to pour a continued stream of water on the ulcer as soon as any part of it is cauterized.” He adds—“This application is no doubt as painful as it is decisive; but although I have adopted it in a vast number of instances, I cannot call even one to my recollection in which it did not succeed in checking the progress of this destructive ulcer, inducing it to assume a healthy appearance, and soon afterwards to heal.”

The same plan is recommended by Lawrence and Willbank; the latter surgeon recommends the removal of the slough with the scissors and forceps before the application of the acid to the ulcerating surface, and to protect the sound parts by a thick coating of of lard or cerate. From my own experience of the efficacy of Carmichael's plan, I do not hesitate to recommend its adoption in preference to any other, and would add, that no time should be lost in trying inefficient measures, and that in severe cases a very thorough application of the acid must be made, and repeated next day if necessary. Mr. Stuart, who, as already stated, met this disease very severely at Poona, in 1846, says:—

“In phagedenic ulcer, local treatment I look upon as most important, viz., a free application of nitric acid, and a man must have no fear about it, for the disease will take off the whole affair within forty-eight hours. I have seen a little sore in the morning, not bigger than two pins' heads, half across the glands before the next morning.”†

* Lectures, page 130.

† Ven. Co. Evidence, p. 84.

The same surgeon made trial internally of "muddar," the gum of a gigantic creeping plant common in India, and much esteemed amongst the natives as a remedy for syphilis, and considers that it has a beneficial influence in checking the ulcerative action, and improving the character of the sore.

Ricord's favourite is potassio-tartrate of iron, both externally and internally. He calls it the "born-enemy" of phagedena, and says:—"It combats it, almost always moderates it, and most generally arrests its progress."* Rather faint praise this, beside that which may be truly said of the effects of nitric acid freely applied. I have tried the potassio-tartrate, but do not think it can be depended upon in severe cases. It has failed in my hands to arrest the rapidly advancing ulceration, and I have been obliged to resort to nitric acid in place of it. After the application of the acid, some dress the sore at once with stimulating dressings. Acton employs an opium solution. I have generally found a poultice for twenty-four hours, and afterwards dressings of lint, soaked in a solution of chloride of lime, (ʒii to ʒviii of water) answer very well.

The constitutional treatment demands great care. No absolute rule can be laid down for it; each case must be carefully studied and prescribed for according to the age, strength, and actual condition of the patient. Opium will always be found of use, but sometimes must be given with much care, and in small quantities, while in others, very large doses are borne well, and prove of great use. Acton mentions a case where thirty drops of Battley's solution was given every second hour with marked benefit; on the other hand, I have found the tongue dried, and nutrition arrested, while the ulceration continued, under large doses of opium. We must be guided in the administration of this drug by the state of the nervous system rather than by the phagedena itself.

Wine will sometimes be required in large quantities, but there are exceptions when it had better not be given at all; we will be guided by the pulse, and the effects of the stimulant when administered.

Iron, either the potassio-tartrate, or the tincture of the perchloride, which appears to me to answer still better, in free doses, will be of great use in aiding the local treatment. (ʒi of the potassio-tartrate of iron, dissolved in ʒviii of water, forms a mixture of sufficient strength, ʒi being taken every fourth hour, or ℥xxx of the tinct. ferri perchloridi may be given in water every fourth hour also.) The diet should be nutritious soup, with milk and eggs.

When phagedenic ulceration attacks the surface of an open bubo in the groin, we have a most formidable disease to deal with. Sir A. Cooper relates two cases in which death resulted from this—in one, from exhaustion; in the second, from opening of the femoral artery, and consequent hemorrhage. The following case illustrates this serious complication, and details the treatment successfully employed to meet it; and will also convey a warning of the danger of confounding local sores and buboes with syphilis, and treating them with mercury:—

W. C., twenty-eight years of age, came under my care in July, 1867. There was then no sore on the penis, but a small wart on the right side of the glans, where a sore had existed. In the right groin there was a phagedenic ulcer, with purple undermined edges, about three inches long, and two and a half broad, its surface covered with a dirty white tenacious slough, and furnishing a very copious purulent secretion, which could be pressed out from under the overhanging edges. In the left groin a still larger ulcer of the same kind existed, with sinuses extending from it downwards towards the perineum.

His general condition was as follows:—Pulse about 120, and very feeble; tongue thickly coated with a white fur; total loss of appetite; great emaciation; night sweats and constant cough—in fact, he looked so like a patient in advanced phthisis, that his chest was more than once carefully examined for the physical signs of tubercle, and opinions differed as to whether such really existed or not. Sleep was only obtained by large opiates.

His history was, that three months previously he had contracted a sore upon the spot where the wart is now. A fortnight after this, a bubo formed in the right groin, which suppurated. He now placed himself under the care of a druggist in Liverpool, who gave him pills which soon made his mouth very sore. While in this state, a bubo formed in the left groin. He now applied to another practitioner, who opened the

bubo in the left groin, but continued to give him a pill every night and morning. For a time he went on favourably, the right bubo nearly healing; but before it was quite healed a change came over him. His appetite failed; he could not sleep, and the bubo began to spread, becoming larger every day; the left bubo at the same time enlarging also. He then came to his friends in Dublin.

Upon the 1st of August, a few days after he came under my care, the notes taken at the time state that the right bubo was four inches in diameter each way, a large prominent gland projecting in the middle, the whole surface covered with a yellowish-white, tenacious slough. A sinus extends down from the lowest part of the ulcer, from which a quantity of thick pus exudes when pressure is made in its neighbourhood. It is tender and painful to the touch at all parts, besides being the seat of a constant burning pain. The ulcer in the left groin is in much the same state. His general state was the same as already described, although every means had been used to support his strength and rouse the powers of nutrition.

Upon this morning the patient was placed under the influence of chloroform, and the surface of the ulcer having been carefully cleaned, I applied potasa-cum-calce freely to every part of the ulcers. The cavities were then carefully filled with charpie soaked in a solution of chloride of lime. One grain of opium was given four times a day, and he was placed on a liberal allowance of wine, with eggs and beef-tea.

A decided improvement followed this application; but in a few days the surface began again to put on the characteristic phagedenic look, and the ulcers again began to extend their margins on all sides, the right being now the largest. The burning pain which had been constant before the escharotic had been applied, ceased at once after its application; but upon the recommencement of the phagedenic action it began to some extent to be felt again. I now applied nitric acid freely to the margins and to the surface, wherever the phagedenic appearance had been reproduced, with the best effect; but for some days it was doubtful whether the ulceration would cease now or not; when, however, the sloughs separated the extent of the ulceration was terrible, but a healthy surface was shown. His constitutional symptoms began at once to improve. The opium had for some days been omitted as his tongue was dry, and he was placed upon full doses of the tinct. ferri perchl. with chlorate of potash. I thought I found improvement at this stage by dressing the ulcers with a weak solution of the bisulphate of lime. It took about two months for the ulcers to heal so far as to make it

possible for the patient to go out, at the end of which time he had regained his flesh, and was able to go about with the aid of crutches.

I have seen him lately very fat and strong, having never had any symptom of syphilis, and the symptoms of phthisis, which seemed at one time so much to be feared, having altogether disappeared.

That the mercury administered in this case, under the false supposition that the disease was syphilitic, had a very decided influence in inducing the phagedenic ulceration, appears to me to admit of no doubt.

The serpiginous, or creeping sore, is a form of ulceration analogous to the phagedenic, but differing from it chiefly in its remarkably slow and obstinate course. As has already been said, acute phagedenic ulceration may destroy a large portion of the penis in forty-eight hours. The serpiginous ulcer may, on the other hand, go creeping on, healing on one side while it advances on the other, for seven or eight years. It is a form of disease happily but rare. I can only recollect meeting with one or two decided examples of it during the last ten years. Ricord gives an excellent drawing of it in plate vii. of his "Iconographiè." Of the case from which the drawing was taken he gives the following description :—

"A large ulcer existed, covering the entire lower surface of the glans, moulding it like the mouth-piece of a flute. This ulceration has destroyed about half the thickness of the glans forming the balanic portion of the urethra. The bottom of the ulcer was covered by a species of greyish pultaceous or simi-membraneous secretion, irregularly disposed, strongly adherent, and pierced here and there by granulations of an unhealthy nature, and of a red, violet, and hemorrhagic colour. This ulcer was surrounded by a ring of firm œdema, but was deficient in specific induration. The edges clearly cut did not present any tendency to become undermined."*

This ulcer generally occupies the groin inside of the thigh or scrotum. It frequently presents an undermined or overhanging edge on one side, and a sharply cut edge at some other part, and is

* Acton, p. 229.

found to be ulcerating at one part while it is healing at another, thus slowly creeping on, leaving a thin unhealthy cicatrix in its track. The secretion is purulent and sometimes copious, the surface being covered with an adherent exudation or slough.

Various opinions have been held regarding the true character of the serpiginous ulcer, some considering it to be due to the presence of syphilis in the system—in other words, to be a secondary or tertiary syphilitic symptom. Others, again, remarking its strictly local characters, and finding it continue for years unchecked by the treatment which influences syphilitic symptoms, and, moreover, in most cases, unaccompanied by any other symptom of syphilis, have supposed it to depend upon a peculiar chancrous poison of its own. That it cannot be considered a symptom of secondary or tertiary syphilis, is evident from the fact of its occurrence in those who have never had any symptom of syphilis; and to suppose that syphilis could show its presence by this symptom only, would betray a complete ignorance of the invariable course of that disease. There is, on the other hand, no sufficient evidence to warrant our belief in the serpiginous ulcer being propagated by a peculiar poison of its own, for it does not appear to be necessarily produced by, or to produce in its turn, a sore of the same description. Lee found the pus of a serpiginous sore inoculable upon syphilitic patients, which, had it been a syphilitic ulceration, would not be the case. The sore produced by this inoculation resembled the simple or chancroid sore. In a case which I had an opportunity of examining some years ago, the discharge from the serpiginous ulceration, which occupied the space between the scrotum and thigh, had produced several little ulcers, not to be distinguished from chancroid sores, on the scrotum and inside of the thigh.

It seems to me probable that serpiginous ulceration is produced by the long-continued action of the poison of the simple or chancroid sore in the tissues, influenced (as is the case in phagedena) by the condition of the patient's system. This conclusion is supported by the consideration of the class of persons in whom this disease occurs. It is rarely or ever met with amongst the upper

classes; its victims are those upon whom poverty, drink, neglect, and dirt, exercise their combined influence. Phagedena occurs amongst the wealthy, produced by the effects of drink and dissipation upon a poisoned sore: but the serpiginous ulcer seems to require in addition to the effects of drink, those of long-continued want and neglect.

The *diagnosis* of a serpiginous sore sometimes requires considerable care. It may, and probably often has, been mistaken for tertiary syphilitic ulceration; and this latter has, it may be, on the other hand, been confounded with a serpiginous sore. Attention to the peculiar characters of the ulcer, the position it occupies, its essentially chronic character, and the presence or absence of a syphilitic history, will aid our decision, which may be further settled by the effects of inoculating the secretion (taken from the most active part of the ulcer) upon the patient himself. If the ulceration be syphilitic, no effect will be produced; if serpiginous, a specific sore will result.

Our *prognosis* will be influenced by the fact that this has been found by all surgeons to be a peculiarly obstinate and rebellious form of ulceration, sometimes resisting the best-directed and most persevering efforts to heal it. It does not present the same dangers that arise from phagedena, as the ulceration is superficial, slow, and never at one time very extensive. Nor is the constitutional disturbance caused by it to be dreaded, as this is but slight; but as to the expectation of obtaining a sound and permanent cicatrization of the ulcer, we are compelled to speak doubtfully.

The *treatment* which has had the greatest amount of success has been free and full cauterization of the surface and edges of the ulcer. The actual cautery has been used with success; but probably the Vienna paste, or nitric acid, both of which have also succeeded, will answer quite as well, and will not terrify the patient, although perhaps giving quite as much, if not more pain. Acton recommends a saturated solution of chlorate of potash (ʒi. to ʒi. of water) as a wash. The constitutional treatment will be such as the debilitated condition of the patient demands—good food,

cleanliness, rest, a little good wine, and such a tonic as cinchona bark, or the perchloride of iron. Mercury and iodide of potassium are recommended by authors and given by surgeons. I would object to either; in the first place, as likely, if the case be truly a serpiginous ulceration, to injure rather than improve the condition of the patient; and, secondly, because by such treatment the confusion between this local disease and syphilis is constantly kept up.

CHAPTER IV.

SYPHILIS:

ITS NATURAL HISTORY AND PATHOLOGY.

WE now enter upon the study of the third form of venereal disease, viz., Syphilis; and in doing so, we pass from the consideration of local sores and their complications, to that of a disease affecting the whole system, from which no tissue or organ of the body is exempt—a disease produced apparently by a subtle poison, which, gaining admittance into the blood, is by it carried to every part. This virus or poison has been as yet detected by no process, but we infer its presence from its effects, which sometimes continue to be produced when twenty or thirty years have elapsed since it entered the system.

This disease has been known by many names. In 1495, when the great outburst of it occurred at Naples, and when, for the first time, an accurate account of its symptoms were taken, the Italians, attributing its appearance to the presence of the French army in Naples, called the disease *Mal Francese*, which name was adopted in Germany and in England; the French, in return, calling it *Mal de Naples*, and also *Grosse Verole*. The Latin name, *Lues Venerea*, adopted by Fernel, has been employed by Hunter and others. But Fracastor, who, in the commencement of the sixteenth century, wrote an accurate account of the disease as then observed, wrote also a poem in which a shepherd appears, whose name was destined to be handed down as the accepted designation of this terrible disease. He was *Syphilis*. This name was given originally to the constitutional disease, known at the time as *Le Mal Francais*. It has, however, been loosely applied to all forms of venereal disease; it is now again, however, restricted to its original meaning, and should be employed simply to designate the third

form of venereal disease, upon the study of which we are now entering.

In commencing the study of syphilis, which has occupied the attention of surgeons and physicians for more than three centuries and a-half, and is not yet fully understood, I propose, in the first place, considering the laws which govern the natural evolution of the disease, or its *natural history*; then the *pathological effects* which it produces on the tissues; and afterwards to examine its *symptoms* in detail, which will lead us on to the practical result of all we know on the subject, viz., its proper *treatment*.

The study of any disease is materially advanced by a knowledge of its natural course; but this is more particularly true of those diseases which are caused by the entrance of some poison into the system, the elimination of which produces a regular series of phenomena. The want of this knowledge of the natural course of syphilis has been a serious obstruction to its proper understanding, and has been felt to be so by the able men who have studied the subject. Mr. Colles, lamenting the ignorance which prevailed in his day, attributes it, in the first place, to "the imperfect knowledge we possess of the natural course or natural history of the disease." The great difficulty in the way of obtaining this necessary information, was the fact that mercury was invariably given in every case of syphilis. And as this medicine possesses the remarkable property of controlling the symptoms of syphilis to a great extent, while at the same time its excessive and indiscriminate use produces serious effects in its turn, surgeons became confused between the effects of the disease and of the remedy; and the symptoms which one school taught were those of syphilis, another proclaimed to be due to mercury.

When, however, under the teaching of Carmichael and Rose, the non-mercurial plan of treatment began to be adopted, this cause of error was to a great extent removed; the course of the disease when left to itself began to be observed, and thus a very great step in advance was made. Facts have of late years been accumulated, enabling us to arrive at definite conclusions regarding

the natural history and mode of transmission of the disease, which are just what Colles saw were needed for a true advance; and, in fact, they have already thrown a flood of light upon the whole subject. To the French school we are especially indebted in this matter; they have pursued the investigation with characteristic zeal and ingenuity. Diday, of Lyons, conceiving that the majority of cases go on better when left to pursue their natural course of development and decline, than when this is interfered with by treatment, does not treat most of his cases in any way further than by the adoption of means to promote the general health. He consequently has had extensive opportunities of observing the natural course of the disease; the results of his observations he has given us in his "Historie Naturelle de la Syphilis," to which we are indebted for much that we now know of this important part of the subject.

Syphilis used formerly to be considered a disease *sui-generis*—a sort of outcast, acknowledged by no classification, and in its turn submitting to no laws. Latterly, however, it has been recognised as belonging to the zymotic class, which includes typhus-fever, scarlatina, small-pox, &c. Its true position is thus well described by Mr. Hutchinson:—*

"The specific fever known as syphilis differs chiefly from its cogeners in the much more prolonged duration of its several stages. Like small-pox, measles, scarlet-fever, and others in this group, it is communicable from the diseased to the healthy, and can be produced by no other means; like them it has its several stages—of incubation, efflorescence, relapse, decline, and sequelæ; as in them, so in syphilis, the most prominent symptom is an exanthem, or cutaneous rash. The various stages of syphilis tend to pass away of themselves in the course of time, just as certainly as do those of small-pox; and a well-developed attack affords, for a time, immunity from a second. As is the case in the other zymotic diseases, the poison of syphilis is one which possesses the power of breeding in the patient's body, and the smallest possible quantity of virus suffices in due time to inoculate all the solids and fluids of the system. The time required, however, is much longer, and the stages

* A System of Medicine, Reynolds, p. 287.

are much more protracted. Instead of counting the duration of the stages by days, we have to count by weeks or by months."

As has been stated, the chief difference between syphilis and the other diseases of the group is one of time; syphilis not only being very much slower than any of the others in passing through its stages, but subsequently becoming, as it were, incorporated with, and lingering in, the system indefinitely. This is a difference of degree rather than of kind; and Mr. Hutchinson says, with justice—

"What are called the tertiary symptoms of syphilis find their analogies in many cases of small-pox and scarlet-fever, in what are known as the sequelæ of these diseases. It is true that these occur only in a small proportion of cases, but the same holds good of the tertiary syphilitic phenomena. If we observed more carefully, it is probable that the sequelæ of the exanthemata might be recognised much more than they are now, and that many of the diseases classed as 'strumous' inflammation of the eye, the ear, or the skin, with all diseases of nerves and joints, are in reality the tertiary consequences of some specific fever."

Arising out of the chronic character of syphilis spring other differences between it and most of the fever-class. Its symptoms are more *varied* and its course more *irregular*, and both are influenced much more by treatment; and, perhaps, to the slow elimination of the syphilitic poison from the body we owe the fact of its not being communicable by the breath or through the surrounding air, &c.

Its proper position having been assigned to syphilis, we may next examine its natural course of development and decline; a knowledge of this will materially aid us in understanding its varied symptoms. There exists, however, so much diversity in the form and severity of the symptoms, that the following description must be understood as indicating only the broadly-marked characters usually present. Diday lays it down as an axiom that "the evolution, and more especially the intensity, and as a consequence the duration, of syphilis are extremely variable."* There exist, however, certain general events in its progress which are highly

* Historie Naturelle, p. 19.

characteristic, and most important to be understood before entering upon the detailed examination of its phenomena.

The disease, in the great majority of cases, when occurring in a healthy subject, and unchecked by treatment, is found to proceed in the following manner:—

1st Stage.—Contagion or inoculation having taken place, no effect beyond slight irritation is perceived at the spot for two or three weeks; a papule then gradually forms, which the cuticle being usually abraded, forms a sore with an indurated base—syphilitic chancre; the neighbouring lymphatic glands simultaneously become indolently enlarged and hard, without pain.

2nd Stage.—After a period of incubation, which averages about six weeks, a certain degree of fever and general malaise shows itself, and is soon followed by a cutaneous eruption, accompanied by sore throat, enlargement of the posterior cervical glands, followed sometimes by iritis or retinitis. Four or five months elapse before the eruption, or other symptoms characteristic of this stage naturally decline; but in many cases they do partially or entirely disappear. With their decline, the induration of the chancre and glands disappear also.

After the symptoms of the second stage have passed away, in mild cases no further stage is reached—the disease disappears. Generally, however, the presence of the poison is still evidenced by a few lingering blotches on the skin, or perhaps by a continuously recurring ulceration of the mucous membrane of the fauces. The patient may remain for months in apparent health; but after an uncertain interval a return of symptoms takes place, and the

3rd Stage is entered upon. The phenomena which are now produced differ markedly from the symptoms of the second stage; they are characterized by the slow deposit of syphilitic lymph in the skin, mucous membranes, glandular organs, nervous system, muscles, tendons, periosteum, and bones—in fact, in every tissue of the body. The production of these symptoms takes place by successive relapses, intervals of apparent health intervening, and may continue for very many years—not unfrequently for the

remainder of the patient's life. The order and regularity of the symptoms which characterize the earlier stages is now lost; great irregularity and variety occurring both in the character and time of appearance of the later phenomena, so that to arrange these symptoms according to the time of their appearance would be impossible. But a subdivision founded upon the pathological character of the deposit will be found of great practical utility. The syphilitic lymph deposited in the tissues is sometimes (generally in the early period of the third stage) of a firm, non-suppurating, contractile character; whereas, at other times, it is soft, with a tendency to ulceration and suppuration. Hence the long train of symptoms composing this stage may be divided into the *sthenic* and *asthenic*, or the *early* and *later* symptoms. It appears better not to make a fourth stage, inasmuch as no distinct line of demarcation divides the latest symptoms from those which precede them, but rather a gradual decline in the vigour of the disease, and of the vitality of the patient. It will be seen that the arrangement here made corresponds, in a great degree, with Ricord's well-known division of the symptoms into *primary*, *secondary*, *late-secondary*, and *tertiary*; differing from it only in subdividing the third instead of the second stage. Bazin makes four stages—the primary, secondary, tertiary, and quaternary periods, the symptoms of each being arranged in the order in which they are supposed to occur. This cannot be done accurately in the late period, and therefore this division is objectionable; thus Bazin puts visceral lesions in the fourth period, whereas they are very frequently found to exist long before this stage is reached.

Other divisions have, consequently, been made, founded, not upon the period of the appearance of the symptoms, but upon their pathological character. Thus Virchow classes all the lesions produced by syphilis under two heads—1st, Those producing active phenomena, inflammations, &c.; and, 2ndly, Those producing decay, or degeneration of tissue. Barenprung, of Berlin, adopts a similar arrangement. But such a classification, taking no account of the chronological order of the symptoms is more objec-

tionable than that which omits any reference to their pathological character; it is, as Lancereaux remarks, too exclusive. With the view of combining the advantages of the chronological and pathological arrangements, this last-named author makes the following division:—1st, The period of incubation; 2nd, The period of local eruption, or that of the primary accident; 3rd, The period of general eruption, or secondary accidents; 4th, The period of gummy productions, or that of the tertiary and quaternary accidents. This is a practical and excellent arrangement in some respects, the advantages of which I have endeavoured to combine with Ricord's well-known and admitted classification, by making a pathological subdivision of his tertiary stage, and omitting the late-secondary, which is then not required. The classification of the symptoms will then stand as follows:—

1st Stage.—Primary symptoms—viz., the chancre and bubo.

2nd Stage.—Secondary symptoms—the first eruption, with sore throat. The period of eruptive fever.

3rd Stage.—Tertiary symptoms—the period of deposit; subdivided into—

1. The sthenic or lymphy deposits; and
2. The asthenic or gummy deposits.

Hunter taught that all cases of syphilis would, if not checked by mercurial treatment, go on to the production of tertiary symptoms. Modern experience denies this. Diday* relates eighteen cases in none of which any specific treatment whatever was adopted, and in none of which the later symptoms were produced. All these cases were under his own observation, and in all a sufficient interval—varying from three to sixteen years—had elapsed since the last syphilitic symptoms.

In this country we have but seldom any opportunity of observing cases thus left to themselves, as treatment of some sort is usually adopted; but clinical experience proves beyond all doubt that many cases do not go on to the production of symptoms of the third stage, which are treated in precisely the same manner in which

* Hist. Nat., p. 156.

others are, which do go on to develop these symptoms, leading to the conclusion that there are other causes besides the effect of treatment which produce this difference.

A strumous diathesis undoubtedly predisposes the patient to a severe form of syphilis, which will go on to the production of tertiary symptoms, and in such persons these are observed to occur very early—a year or so after infection. This alone, however, will not account for the wide difference in severity which exists between the course of the disease in persons of the same kind of constitution. Not unfrequently the strumous, weakly youth will have a mild, easily-managed disease, while a vigorous, healthy-looking patient will have a severe, obstinate syphilis. A striking example of this occurred to me some years ago :—

Two patients were about the same time under my care, both suffering from syphilis. One was a tall, delicate-looking, very young man, living in lodgings by himself, who, I had reason to fear, drank to excess sometimes. The other was a strong, well-made, athletic fellow, two or three years his senior, who lived at home, and was well taken care of. Both had indurated chancres, followed by the second stage of eruption, &c. A. neglected his own treatment in every way ; in fact, it was impossible to treat him properly, so careless and negligent was he of all advice. I feared the worst consequences ; but he had the disease very mildly, and appears to be now quite free from it. Z., on the other hand, who, just at first, was irregularly treated, most carefully followed advice subsequently, and was well and assiduously taken care of, had a most severe and intractable syphilis, the effects of which he feels still, and will probably suffer from for years to come.

M. Diday concludes, as the result of his extensive experience, that these differences in severity and duration of syphilitic symptoms, cannot be satisfactorily explained by reference to the constitution or habits of the patient alone, nor yet to the effects of treatment altogether ; but that it arises from a difference in the force or intensity of the poison itself. He does not advocate Carmichael's doctrine of the plurality of poisons ; but he believes that the poison of syphilis does, from several causes, become *enfeebled*, and that this feeble virus will produce a mild case of syphilis, whereas the

virus which has not undergone any such enfeebling, will produce a severe case. Hence he divides all cases of syphilis into two classes, the *mild* and the *severe*, (*vérole faible et vérole forte*;) the former if left to themselves will, after the second stage, gradually get well, and leave the constitution quite free, without producing tertiary symptoms; the latter will have more frequent and severe relapses, and will produce tertiary symptoms. These views of Diday, strongly supporting as they do in many respects those advocated by our own Carmichael, are worthy of the most attentive consideration. Before, however, considering the causes assigned for the enfeebling of the virus, it will be necessary, first, in order to the full understanding of the subject, to examine two other points connected with the natural history of the disease. The first of these questions is—Does syphilis, like the other diseases of the same group, protect the system from a second attack? Mr. Colles* was the first to remark, that while infantile syphilis was highly contagious to all who came in contact with the infant, yet that the mother who was more constantly exposed to this source of infection than anyone else, *never* did take the disease, when it had been derived from the parents. This remarkable fact, which was known by the name of "*Colles's law*," was explained by the late Professor Porter† of this city, to arise from the fact that the system of the mother having already been affected with syphilis, she had obtained protection from a fresh infection; and arguing from facts occurring under his own observation, he announced the conclusion that "The infection of syphilis never returns upon itself, or recontaminates the source from which it was derived." The doctrine thus announced, that an attack of syphilis protects from future infection, has since been generally admitted, and was perhaps supposed to be somewhat more rigidly true than it really is, for latterly exceptions have been observed and recorded by Diday, Lee, Hutchinson, and others; so that, while acknowledging the law as true generally, we must admit occasional exceptions. These exceptions,

* Colles on the Venereal Disease, p. 285.

† *Dublin Quarterly Journal*, vol. xviii. p. 95.

however, only prove the *possibility* of second contagion, but do not affect the general rule of the protection afforded by the disease, especially during its early stages. In these exceptional cases of second infection, the disease ran usually a very mild course. Diday remarks upon the absence of induration of the lymphatic glands in the cases observed by him.

The second question is, By what different modes can syphilis be transmitted from one to another?

The older writers considered syphilis could be communicated not only by the matter furnished by ulcers occurring during any stage of the disease, but also by any of the secretions, and even the breath. Hunter, finding he could not inoculate the secretion of secondary sores upon the patient who had them, concluded that the secretion of such sores could not convey the disease; and Ricord repeating the same experiment, with the same result, and finding at the same time the secretion of what was then believed to be the primary syphilitic sore readily inoculable, concluded that syphilis was transmitted only by means of a primary sore. "Ricord's law" gave way, when it was understood that the reasons why his inoculations from secondary sores always failed, was that his experiments were invariably made upon those who already had syphilis, and were therefore protected; and that the reason why, on the other hand, he succeeded with the primary sore, was that the soft sore from which he inoculated was not a syphilitic sore at all, its successful inoculation proving nothing as regards syphilis.

We have good reason now for believing that syphilis may be communicated—1st, By the primary sore, or syphilitic chancre. 2nd, By some secondary sores. 3rd, By the blood. 4th, By some of the secretions. 5th, By hereditary transmission.

Transmission of the disease by means of secondary affections.—M. Ricord, as well as all other authorities, now admit that some at least of the secondary affections may communicate the disease. The proofs upon which this conviction rests, are derived both from clinical experience and direct experiment. Colles had, in 1837, published numerous cases in which infants who had syphilitic

ulcers about the mouth, had communicated the disease to their nurses and other persons, who, by kissing the child, came in contact with the sore, and in this manner whole families became infected. Similar cases are recorded by Diday and other authors. These were at first explained without admitting the contagious character of secondary affections in the adult, by supposing that the disease, when inherited by the infant, was peculiar in this respect; but further observation has proved that it was only more contagious from its furnishing a more free secretion, and that secondary affections in the adult, under favourable circumstances, communicate the disease in a similar manner. The following example is recorded by Rollet :—*

“ Antoine S—— had indurated chancre in April, 1858, followed by a papular eruption, sore throat, and ulcers on the lips. This man was a workman in a glass-foundry, where it is customary for the men who blow the bottles to work by threes. The first blows the glass into a hollow globe, and passes the tube to the second, who modifies the form in some way—and he to the third, who finishes the bottle. S—— was the first of a set who blew in the same tube.

“ John J——, the second of the set, perceived in October, 1858, a hard lump, the size of a cherry-stone, on the anterior and right side of the lower lip, and a short time afterwards the sub-maxillary ganglia, especially on the right side, became engaged. At a later date, which the patient could not state with accuracy, an ulceration, with a greyish floor, appeared on the right tonsil, and on the anterior wall of the palate. The patient was examined December 10, 1858, when a reddish and indurated patch was found at the spot already mentioned upon the lip; there was multiple sub-maxillary adenitis; an ulceration upon the right tonsil; nothing whatever upon the genital organs.

“ Fleury G—— was the third of the set of glass-blowers. He was examined December 10, 1858, and presented several ulcerations, which he said had existed about a month. One was situated upon the mucous membrane of the lower lip, near the median line; its floor was reddish and raw, and partly covered with a blackish scab; its edges irregularly cut; its diameter nearly half an inch. A second ulceration was seated upon the internal surface of the upper lip, its floor greyish and pulta-

* Bumstead on Venereal Disease, p. 477.

ceous, its edges sharply cut, its depth less than the preceding. A third ulcer also occupied the upper lip; it was greyish, of small extent, and would perhaps admit the head of a pin. On examining the mouth, a mucous patch was found between the uvula and the left posterior pillar of the palate; the fauces were generally red, and the patient experienced difficulty in swallowing. The sub-maxillary ganglia were sensibly engaged, and also those to a less degree upon the side of the neck. G—— has no lesions of the genital organs. He is married, and the father of a family. His children are all well, but he states that he has communicated the disease to his wife, who, however, could not be examined."

Clinical observation has latterly added numerous similar cases. The following, occurring under my own notice, I may briefly relate :—

A respectable married woman, of middle age, presented herself amongst the patients attending the Adelaide Hospital Dispensary, in November, 1866. She exhibited unmistakable signs of syphilis in its secondary stage, one of the most prominent symptoms being condylomatous sores at the corners of the mouth, and on the tongue and throat. At this time she had four children, all healthy, the youngest being about two years old. She had received the infection about six months previously from her husband. Placed upon suitable treatment, her symptoms soon got better, and she ceased to attend. About six months afterwards, however, she called upon me, bringing her youngest child, a boy of two and a half years of age, who, she stated, had begun to fall away in flesh and strength very much during the last month. Upon examining the child, I found well-marked condylomata of the lips, falling out of the hair, and other syphilitic symptoms. The mother stated that her own lips had been from time to time during the past six months affected with the ulcers which had been cured at the hospital, and that she feared she had given the disease to the child, either by kissing it, or by his using her spoon. This child improved under mercurial treatment. It was, however, carried out but very imperfectly, and the condylomata of the lips were constantly recurring. In about six months after the disease showed itself in this child, an elder brother, a boy about eight years of age, was brought to me with a well-marked syphilitic sore on the lower lip, and indurated glands under the jaw. The mother at this time showed no signs of the disease; and the younger child was much improved in general health, but had still sores at the mouth. The boy last affected looked pale and sick, and has since suffered from well-marked symptoms

of secondary syphilis. Upon being questioned, the mother stated that all the children used the same mugs and spoons. The father, the author of the infection, I had no opportunity of examining.

The age of the patients in this case precludes the possibility of the disease being acquired either by hereditary transmission, or by their own act.

The proof of the possibility of the transmission of syphilis by secondary lesions has been completed by direct experiment. Wallace of this city was the first who succeeded (in 1835) in inoculating the secretion of condylomata upon healthy individuals. For many years his experiments remained unconfirmed by other observers, the objections to such an experiment being obvious. Within the last ten or fifteen years, however, several Continental surgeons have proved the possibility of such inoculation. A committee was nominated by the Academy of Medicine of Paris, in 1858, to report upon this subject. The experiments were conducted by M. Gibert, who inoculated patients affected with incurable lupus with the secretion of mucous patches, or condylomata. The conclusions arrived at by the committee, and adopted by the Academy, were as follows:—

“1st. Some secondary or constitutional symptoms of syphilis are manifestly contagious. The mucous patches or condylomata holds the first rank in this respect. 2nd. This truth is applicable both to the nurse and nursling, and also to other persons; and there is no reason to suppose that the secretion of secondary symptoms in infants at the breast possess different properties from those which are known to belong to secondary symptoms in adults.”

The possibility of the disease being communicated by secondary symptoms thus proved, has been confirmed by subsequent experience. And from the fact of mucous patches or condylomata being a very common form of secondary affection in women, it becomes extremely probable that syphilis is communicated very frequently in this manner.

3rd. *The blood* of a syphilitic patient may become the means of conveying the disease. This is proved by five or six successful

attempts which have been made to inoculate with syphilitic blood. Also by the fact that syphilis has been communicated by vaccination, when a little blood has been mixed with the vaccine matter taken from a syphilitic child.*

The following is a well-authenticated example of the effects of the inoculation of syphilitic blood :—

“Professor Pelizzari,† in February, 1862, inoculated Drs. Bargioni, Rosi, and Passagli, with the blood of a patient affected with constitutional syphilis, and who had undergone no treatment. The blood was drawn from the cephalic vein with a new lancet. There was no sign whatever of eruption on the skin where the blood was drawn. The symptoms present were chiefly condylomata about the anus, indurated inguinal glands, enlargement of posterior cervical glands, and a confluent syphilitic eruption. As the blood was flowing from the vein, some of it was received on a piece of lint, and this was placed on the upper part of Dr. Bargioni's left arm, where the epidermis had been previously removed, and then transverse incisions made. This point corresponded with the insertion of the deltoid muscle. The same operation was performed upon Drs. Rosi and Passagli, but in their case no effect was produced, the blood being already cold. No immediate effect followed in any ; but on the 3rd of March, (nearly a month from the time of inoculation) Dr. Bargioni announced that in the centre of the inoculated surface he had noticed a trifling elevation, which produced a little itching. Professor Pelizzari examined the arm, and found at the point indicated a small papule of a roundish form, and of a dull red colour. There was then no induration at the base of the papule, nor any enlargement of the corresponding axillary glands. To prevent its being rubbed, it was covered with dry charpie and plaster. It was examined daily. On the eighth day the papule had augmented to the size of a twenty-centime piece. On the eleventh day it was covered with a very thin adherent scale, resembling silver paper, which, upon the two succeeding days, became denser, and commenced to crack. On the fourteenth day the axillary glands became enlarged to the size of nuts, movable and indolent. The papule remained indolent, but its sensibility was increased. On the nineteenth, pressure upon the crust caused a small quantity of sero-purulent fluid to exude from beneath its edges, slight pain being

* Dr. Vennois *Arch. Gen. de Med.* June, 1860.

† “Lectures on Syphilis,” by Dr. Lee, 2nd edition, p. 198.

felt. On the twenty-first, slight induration was for the first time perceptible at the base of the papule, the scale was transformed into a true crust, which was being detached, the part beneath ulcerating. On the twenty-second, the crust was detached, and a funnel-shaped ulcer presented itself, with elastic and irritant borders, forming an annular induration. The edges were swollen, adherent, and obliquely inclined towards the base of the ulcer, which was covered with a very small amount of secretion. On the twenty-sixth, the ulcer had extended itself to the size of a fifty-centime piece, it secreted more, and the surrounding induration was considerably increased. Up to the 4th of April the ulcer remained stationary, it then appeared to be granulating. There appeared at this date trifling nocturnal pains in the head, and the posterior cervical glands became somewhat enlarged. On the 12th of April there appeared on the surface of the body, particularly upon the sides of the chest, spots of irregular form, and rose colour, unattended by any inconvenience to the patient. The glandular swellings of the neck were well-marked. The eruption extended itself, and became more confluent during the succeeding days; it continued increasing for eight days, unaccompanied by any constitutional disturbance. The sore on the arm, or chancre, maintained its specific character, and exhibited no tendency to cicatrization. On the 22nd, the colour of the eruption was decidedly coppery, small lenticular papules were now found to be mixed with the erythema."

"Professor Lindwurm* relates a similar experiment performed by himself, in which the blood of a patient suffering from constitutional syphilis was drawn by means of a cupping-glass from a perfectly healthy portion of the skin, and injected sub-cutaneously at two spots between the scapulæ of a woman affected with a destructive adenoid ulceration of the forehead. Four weeks after this, a little red tubercle showed itself at the seat of one of the punctures. It gradually increased in size, and became covered with a thin yellowish-brown crust; it attained the size of a sixpence, was surrounded by a red areola, had a hard base, and was in fact an indurated chancre. Eight days later, a swollen lymphatic gland in the neighbourhood appeared; somewhat later, the occipital, cervical, and cubital glands were enlarged, and cutaneous eruption followed. The ulcer in the forehead remained unchanged."

Direct experiment has thus shown the possibility of the blood being the vehicle by which the poison of syphilis may be conveyed.

* *Syd. Soc. Year Book*, 1862, p. 233.

This conclusion is corroborated by the facts connected with vaccino-syphilitic inoculation, which are of much practical interest.

Mr. Lee* has collected evidence proving the possibility of syphilis being communicated by means of vaccination, and it is almost universally admitted that such can take place. Some very startling and melancholy cases having occurred, putting the question of possibility quite at rest. The little village of Rivalta, in Piedmont, was the scene of this unintentional proof. On the 24th of May, 1861, a child of eleven months old, Chibrera by name, was vaccinated, then in excellent health. The lymph had been supplied in a tube from another town. On the tenth day forty-six children were vaccinated by the lymph taken from this child; from one of them thus vaccinated, seventeen other children were vaccinated after ten days more. In about twenty days after vaccination, a large number—forty-six in all—of these children became affected with a disease which proved fatal to many of them, which was communicated to their nurses, and from them again to their husbands, which was characterised by eruptions on the body, sores about the anus and mouth, and accompanying cachexia. This outburst of a disease unknown in Rivalta, greatly terrified the inhabitants, and a medical commission was sent to report upon its nature. They unanimously pronounced it to be syphilis, an opinion further strengthened by the symptoms disappearing under mercurial treatment.

Dr. Vennois considered that the disease could not be communicated simply by the vaccine lymph, which, if pure, seemed incapable of producing the disease; but when a little blood was mingled with the lymph, as often happened, then the vaccine vesicle might be produced at its natural time, but subsequently became changed into a syphilitic sore, which then pursued its course. Numerous instances are reported by Dr. Vennois, which are sufficient to show that vaccination may be the means of conveying syphilis, and also that the admixture of blood, if not necessary, is at least an additional means of contamination.

* Lectures, p. 118.

In 1865, M. Depaul* collected an account of all the cases of vaccino-syphilitic inoculation, then published, and founded on them a report which was read before the Academy of Medicine of Paris, in which he argues that the presence of blood is not necessary to the infection, but still urges the precaution of taking care that no blood is present when vaccinating. The possibility of syphilis being conveyed by pure vaccine matter, unmixed with blood, is, however, not as yet proved; and as it is admitted by all that the mixture of blood is a source of danger, we may conclude that in the majority, if not in all cases of vaccino-syphilis, the blood acts the part of the medium by which the poison is transmitted.

The cases, of which several are recorded on good authority, in which the transplanting of a tooth was followed by syphilis, are probably to be explained by the blood contained in the new tooth acting as the means of conveyance.

The blood affords the means of the transmission of syphilis under other circumstances of a very remarkable kind. The best authorities admit that a mother will take the disease from her own unborn child, the fœtus being syphilitic from the father, whose diseased system, it is well known, may contaminate the fœtus directly, without the mother being infected. A fœtus thus diseased will sometimes become the means of infecting the mother. In this transmission, the blood which circulates between the two must be the agent, carrying the virus with it, as it returns to the system of the mother from that of the syphilitic fœtus. The following, related by Diday,† is an illustration of this circuitous mode of transmission:—

Mr. X., of W. G——, was treated by me, in 1852, for secondary syphilis. As he was about soon to marry, he pursued the general treatment as far as I desired, and at the day of his marriage had been for several months exempt from any suspicious symptoms. His wife, a young and innocent woman, became pregnant at the end of two months. Having remained healthy until the end of the third month of her pregnancy, she

* "Braithwait's Retrospect," 1865-6, p. 239.

† "Syphilis of new-born Children," p. 153.

then had a copper-coloured eruption on the abdomen and arms, preceded by cephalalgia. No treatment. Abortion at four months. When I saw her two months afterwards, her face, neck, and arms, were covered with syphilitic papulæ; she had ulcers in the throat, alopecia, chlorosis, swelling of the cervical glands, &c. It is to be observed that the husband, much in the habit of examining himself carefully, had not, up to that time, observed any new symptom."

With regard to the character of the disease thus transmitted, it is found to be usually of a mild type, the poison becomes enfeebled apparently in thus passing through the fœtus. Some women altogether resist the influence thus brought to bear upon them, and remain perfectly healthy, although producing syphilitic children. Hutchinson* maintains that the symptoms when thus produced in the mother, are always of the tertiary class, the secondary stage being altogether omitted; at all events they are frequently obscure and badly marked, and consequently liable to be mistaken, or altogether overlooked.

4th. *Transmission by the secretions.*—Admitting that syphilis is transmitted by the blood, it might be supposed that the secretions formed from the blood would also convey the poison. This, however, as a matter of fact, has been much disputed. Hunter denied its possibility, but then he denied also infection by secondary symptoms, or by the blood. Positive proof is scarcely to be expected, when so many modes of infection are possible; probably evidence, however, exists sufficient to compel us to admit at least the possible occurrence of such a mode of infection. The secretions which have been supposed capable of thus bearing the poison are—the semen, the milk, and the vaginal secretions.

Infection by the semen has been maintained by the late Professor Porter,† who relates cases in which syphilis was communicated by a husband to his wife, the former having no sore whatever, but being the subject of constitutional taint; the latter not having been pregnant. From two such cases observed by himself

* "Reynolds' System of Medicine," p. 297.

† *Dub. Quar. Jour.* May, 1857.

he concludes—"That the semen of a diseased man, deposited in the vagina of a healthy woman, will, by being absorbed, and without the intervention of pregnancy, contaminate that woman with the secondary form of the disease, and that without the presence of a chancre or any open sore, either in the man or in the woman." As no vaginal examination was made in these cases, the latter assertion, that no sore existed in the woman, is unproved, and very doubtful; but that the semen was the means of conveying the disease, seems to be the only explanation of the contamination.

Most authors do not admit the possibility of this; but remembering the serious results, as explained by Mr. Porter, which might follow from a hasty denial of its possibility, we should wait for further evidence before concluding that the disease cannot be propagated in this way. It appears to me to be an open question, to be settled by further observation.

The Milk.—It is difficult to give proof of infection of the suckling through the milk of the nurse, as a sore may have existed on the nipple, if it does not exist when we see the case, and we know that to be a ready and frequent means of contagion. Experience, however, seems to me to support the view that the milk may sometimes convey the disease, as it certainly does the remedy, as when mercury is administered to the nurse, the symptoms of both child and nurse improve together.

Diday leans decidedly to the view that the milk may convey the disease; but concludes his observations upon this point by saying:—"For my own part, I neither admit nor reject anything absolutely concerning the point at issue. If reason induces me to admit the reality of this influence, I must confess that experience has not yet lent sufficient support to its suggestions. I wait, therefore, merely appealing to impartiality in the first place, and afterwards to the zeal of future investigators."*

Mr. Lee † believes that there is reason to think that the secretions of the vagina or uterus of a woman affected with syphilis, but

* "Syphilis in new-born children" p. 49.

† "Lectures," p. 246.

free from any ulceration of these parts, may produce syphilis in men; supporting this opinion by cases published by Dr. Marston in the *Medico-Chirurgical Transactions*, these cases occurring in a military hospital, where they could be accurately watched, are well worthy of attention. The following from Dr. Marston's cases I have epitomised for the sake of space:—

Two men were admitted to hospital within forty-eight hours of each other, both with urethral discharge. They both went with the police to point out the woman who infected them, and were surprised to find it was the same woman. One of these men *had* suffered from syphilis; the other *had not*. The first who had suffered from syphilis formerly, went through the usual course of a gonorrhœa, and was discharged cured; the other suffered from gleet and irritable bladder, and subsequently had sore throat, and a well-marked syphilitic eruption, for which he was treated in the usual manner. He then recovered. Careful examination was made for urethral chancre, but no evidence whatever of such could be found. "The woman had a vaginal discharge, but no primary ulcer. She was, however, suffering from acne of the face, and a cutaneous syphilide."

Several other cases are related in which the first symptom was a urethral discharge, followed in due time by syphilis; in some of them a distinct chancre formed, and in others the characteristic indolent glandular enlargement. Along with similar cases observed by himself, they are adduced by Mr. Lee to prove, that "There is reason to believe that the ordinary secretion of the body, when derived from a part in a state of increased action or inflammation, may produce the same effect (syphilis.)"

Syphilis, whether communicated by the initial chancre, by secondary lesions, by the blood, or by the secretions, always, we have reason to believe, begins its course in the new patient by producing a chancre, after a certain period of incubation, to be followed in due time by secondary lesions, and then by later symptoms. In fact, that the poison derived from later symptoms does not reproduce those symptoms, but produces *syphilis*, beginning *de novo*, and going through its regular and invariable course.

This interesting fact was first brought forward by Langlebert, in 1856, and subsequently has been fully examined by Rollet, of Lyons, who collected all the cases then recorded of secondary contagion, and found that they all supported the views of Langlebert, the first symptoms in all cases being an indurated sore, which formed some six weeks before the eruption and other symptoms appeared.

The fifth mode of transmission differs from all the others, in being an exception to this rule. When the disease is *hereditary*, it has no first stage, the first symptoms which appear belong to one of the later stages. This very frequent and potent means of the extension of syphilis will be fully considered in a future chapter.

The protection afforded by syphilis from a second attack being understood, and the various modes by which the disease is transmitted being now before us, we are in a position to return to the consideration of Diday's views, and ask what explanation does he give of the fact, that some cases of syphilis are *severe*, presenting from the outset of the disease a great activity, and as the case advances exhibiting an extraordinary obstinacy, in which the disease, despite every form of treatment which is adopted, lingers in the system which it has ravaged, and hidden there for a time, breaks forth again, perhaps twenty years after its commencement, to exhibit again its unconquerable virulence. Why some, on the other hand, are *mild*, presenting an eruption on the skin of spots or papules, but unaccompanied by any fever, which disappear of themselves without any treatment, are followed by no tertiary symptoms; and the complete restoration of the patient to health, is proved by his subsequently becoming the parent of healthy children. Such extreme differences existing between different cases of the same disease, is a very striking fact, the true explanation of which we may be certain is necessary to a correct knowledge of syphilis. Since Carmichael's doctrine of the plurality of syphilitic viri, no explanation beyond the influence produced by the constitution and habits of the patient has been attempted to

account for these differences existing between different cases, until Diday explained the phenomenon thus :—

The causes which render the disease feeble are twofold—1st. Those which arise from the greater or less activity of the virus itself. 2nd. Those which arise from the condition of the patient's system, into which the virus is introduced ; or, as he expresses it, the vigour and activity of the *seed*, as well as the condition of the *ground*, are to be considered.

The cause which affects the activity of the poison is *the nature of the lesion from which it is derived*. If taken from the characteristic Hunterian indurated chancre, it will be very active, and produce a *severe* syphilis ; if, on the other hand, the chancre which has been the means of infection belongs to the more superficial variety,* the syphilis produced will be comparatively mild. And again, when derived from a secondary lesion, it is always less severe in its effects than when transmitted by hereditary descent, in which case the disease is usually much more severe. Mucous patches, or condylomata, being highly contagious, and being of very frequent occurrence in women, we may readily admit that contagion will very often occur by their means, and in this Diday sees a constant source of the mild form of the disease. There can be no doubt that in all the cases recorded, in which secondary lesions have been inoculated upon healthy persons, mild syphilis has followed. Secondary lesions appear to be less contagious than primary ones, and at the same time to transmit a less active syphilis.

The frequent propagation of the disease by secondary lesions, which must have taken place during the last three hundred years, may account for the great difference which exists between the severity of the symptoms then described, and those which are seen now in the great majority of cases. Indeed, admitting this, it would appear likely that long before the present time syphilis would almost have ceased to exist ; but Diday maintains that a cause of

* See page 89.

reinforcement is constantly operating, which effectually counteracts this decline—this is hereditary transmission.

Turning now to the second cause, viz., to the condition of the subject infected, all will admit the influence which the constitution, the actual health, and habits of the patient, exercise upon the disease. A feeble system is, no doubt, more damaged by the poison than a more vigorous one, and in such, tertiary symptoms are more certain to be produced. But, in another way, the system of the patient may render the disease mild and not severe; that is, by *previous infection*. The protection afforded by syphilis appears to wear out, to some extent, so as to admit of the disease again being inoculated; but in all the cases recorded by Lee, Diday, and others, the type of the second disease has been very mild.

There is reason to believe, too, that inherited taint protects to some extent. Hutchinson and Lee support this opinion; and the latter author refers* to the well-known observations of Dr. Ferguson, in 1812, upon the mildness of the disease amongst the Portuguese, which, when transmitted to our soldiers, committed frightful ravages amongst them. He attributes the immunity of the Portuguese to the protection afforded by inherited taint, it being well known that the disease had for a length of time been very widely prevalent amongst this people, and adds—"That which Dr. Ferguson observed in his day, may be seen at present. A person who has had hereditary syphilis in his youth, will either not contract the infecting form of syphilis in after-life, or will have it in a modified form."

That these, and it may be other causes, will produce such an effect as to modify the disease throughout an entire country, is certain; but what price that people thus protected have paid for this comparative immunity, in deterioration of their race, both in mind and body, we can hardly tell. When, however, in a future chapter, the blighting effect of the syphilitic poison upon the fœtus, and its damaging influence on the healthy development of the

* "Lectures," page 218.

child is considered, we can estimate to some extent the terrible retribution silently following on the children from the sins of their parents. The practical importance of the distinction thus established by Diday between the "*forte*" and "*faible*" varieties of syphilis, will be fully understood when we come to consider the treatment of the disease.

Properly to understand the natural history of syphilis, we must consider also its pathological tendencies; so, before concluding this chapter, I will briefly describe its general pathology, reserving the special description of the morbid changes produced in each tissue or organ, until the symptoms of each stage of the disease are under consideration.

The pathological effects of the syphilitic poison are found in every tissue and every organ of the body. Modern research has placed this beyond doubt. They are characterised by the deposition of a low form of lymph—a fibro-plastic material—modified to a slight extent by the organ which is affected—being circumscribed in some of the solid organs, diffused in the muscular tissue, or seen as a hard deposit round an ulcer on the surface of the body. This primary law of the pathological effects of syphilis is exemplified in all its symptoms—in the induration of the chancre, in the glandular enlargement, in the papules of the eruption, in the lymph seen on the surface of the inflamed iris; subsequently in nodes and gummy tumours, and especially in the deposits in the liver, spleen, lungs, brain, &c. This lymphic deposit undergoes a modification as the disease advances to its later stages, being more firm and hard at first, subsequently softer, and more disposed to degenerate and slough.

Dr. Wilkes, who has done much to elucidate this subject, thus speaks of the deposit as it takes place into the tissue of a muscle:—*

"The character which the deposit assumes in a muscle, may be taken as that which prevails more or less in all other organs. In the tongue, or in one of the muscles of a limb, a rounded hard lump may be felt

* *Guy's Hospital Reports*, New Series, vol. ix. p. 17.

through the integuments, and this constitutes a tumour. It differs, however, from the ordinary class of tumours, known as new growths; since the latter proceed from a small point or centre, and continually grow on the surface, whereby they become circumscribed, and are constituted wholly of the new material which has been thrown out. This is the case in cancer or tubercle. In the syphilitic tumour, however, the exudation appears to have been in the first place of a soft and albuminous character, and being poured out in large quantity, has infiltrated the tissue; consequently when examined, the lymph and the original structure of the part are found incorporated. At a subsequent period, when this has become hard, if a portion be examined with the microscope, the muscular structure will still be found present in the apparently simple, hard, fibrous mass; and thus it is that if appropriate remedies be given at an early period, the tissue will be left in its integrity after the adventitious material has been absorbed. This is every-day experience as regards the tongue. In consequence, all of the lymph being poured out, or not growing from a centre, the diseased mass is not so circumscribed as a new growth, and the lymph or fibre will be found radiating into the muscular tissue around. Thus it is that the surgeon meets with such difficulty in his attempt to remove these tumours by operation; instead of their turning out as an ordinary new growth would do, these have to be actually cut out. If not absorbed by remedies, they become very hard, and then more circumscribed, and remain inert for many years. In the liver, the same process occurs. In this organ the fibroid nodules are not seen, as a rule, until after some years of their existence. They are then hard, more or less circumscribed, but found shooting out their fibrous rays into the surrounding hepatic tissue. In this case also, owing to the contraction which takes place, there is often left a remarkable cicatrical appearance on the surface. It is this exudation of lymph, or fibroplastic material, and subsequent contraction, which peculiarises the disease: thus, in the pharynx and larynx, not only is there an ulceration, but an induration, at the edges and base of the ulcer, formed by the same material, and in the case of the larynx, there may be sometimes found a simple fibroid deposit without ulceration. In the bones, a similar exudation occurs in the canals, and if accompanied by caries, is followed by a similar cicatrical appearance as in other parts. This is often well exemplified on the os frontis of the cranium."

This deposit does not present any peculiar microscopic characters to distinguish it from other fibrous deposits. In the later

stages of syphilis the matter deposited is softer, and runs on more readily to ulceration and sloughing. The peculiarities and distinctive characters of the pathology of each stage will, however, be fully examined when the symptoms of the several stages are considered. It will be sufficient here to point out the general fact, that syphilis throughout its entire course is characterised by the deposition of a fibro-plastic material, which in the earlier stages is usually hard and diffused through the tissue or organ in which it is poured out, and in the later stage is softer, and at the same time more circumscribed. Attention to this pathological character of syphilis, leads to a true appreciation of the action of the remedy which has been as much defamed by one party as it has been lauded by the other, but whose action is only now beginning to be properly understood. All that we know of the action of mercury in other states of disease, leads us to the conclusion that in syphilis it acts simply on the symptoms, not at all upon the virus in the blood; and just because these symptoms are produced by the deposition of a fibro-plastic material, therefore mercury causes their disappearance, its power in procuring the absorption of such effusions being well known; and further, that just in proportion as this deposit is firm, contractile, and diffused, its action is beneficial, while when it degenerates into a softer substance, resembling the strumous deposit, then mercury ceases to produce its absorption, and by further reducing the already debilitated system, may even increase the tendency to the production of symptoms. Thus the remedy which has been proclaimed as a specific for the poison of syphilis by one party, and consequently employed excessively and injuriously, has been by the other denounced as the cause of all the later, and many of the earlier symptoms also. Admitting that the injudicious use of mercury may, by its debilitating effects upon the system, sometimes predispose to the production of some of the later phenomena of the disease, we may be certain that it can never, under any circumstances, be itself the cause of any symptoms which are characterised by the deposition

of fibro-plastic material, its effect upon the system being directly opposed to such effusions.

Experience fully corroborates the conclusion thus drawn from the consideration of the opposite pathological tendencies of syphilis and mercury

CHAPTER V.

FIRST STAGE OF SYPHILIS—THE INDURATED OR SYPHILITIC CHANCRE.

THE first stage of syphilis consists of the formation of a characteristic sore, or chancre, at the point where the virus has entered, and at the same time an enlargement of the neighbouring lymphatic glands. It is separated from the second stage by a distinct period of time, during which the patient may seem to be free from any disease except the two symptoms now mentioned, and yet during which the poison is breeding or incubating in his system.

The syphilitic sore has been known by various names, chiefly to distinguish it from the chancroid ulcer already described—the True, or Infecting, or Hunterian, or Indurated; the latter, from its most characteristic symptom, being the commonest.

As it is a matter of much practical importance to distinguish this true syphilitic sore from the simple chancroid ulcer, we will examine its peculiar symptoms in detail.

1st. *Its mode of development.*—No *immediate* effect is produced when the poison of syphilis is lodged in a part. If an abrasion has existed, or has been produced, it presents for some time no peculiarities to tell us that the virus has entered there. The exact time that elapses before the chancre is formed has been variously estimated. Ricord says the end of the first week is the usual time, and that it rarely, if ever, is so long as the third week. Diday, from a careful examination of 29 cases, found the average time 14 days; Chebalier, in 90 cases, 16 days. Bumstead and others record cases in which 35 or 33 days elapsed. My friend, Dr. MacDonnell,* has lately recorded a case in which circumstances enabled him to fix with precision the exact time which elapsed between the act by

* *Medical Press and Circular*, March, 1868.

which contagion was effected, and the appearance of the chancre : it was in this case 31 days. Rollet, Gibert, and others, who have inoculated syphilis upon patients who never had the disease before found the time which elapsed before the formation of the chancre to be, in different instances, 18, 24, and 25 days. My own experience, derived from the evidence of patients who stated confidently the time of infection, leads me to believe that 10 days usually elapse before any characteristic chancre forms, and that not unfrequently it takes a fortnight to three weeks, and sometimes four or five weeks, fully to develop itself.

The result of experience, in fact, is, that the time occupied in the development of the chancre varies between the extremes of one and five weeks, the great majority of cases showing a mean time between these two ; so that, as a general answer to this question of time, *three weeks* may be given as the average period which elapses after infection before the syphilitic chancre is fully formed. This slow development contrasts markedly with the almost immediate effect of the contagion of the simple sore.

2nd. *Induration* has been, since John de Vigo (1510) described the callosity which surrounded the ulcer, looked upon as the most certain sign of the true sore. When well marked, as it usually is, it is very characteristic ; but sometimes it is absent, or so slightly marked as to escape detection. We should, therefore, never entirely depend upon this for our diagnosis—especially as the simple sore, in some situations, is often surrounded with an amount of hardness which might be readily mistaken for true induration.

In a well-marked case, the induration of the syphilitic chancre has a very characteristic feel ; it is so defined and sharply-edged, as to suggest the idea of some substance lying beneath the cuticle of the part. Bell compared it to a split pea, and very often this exactly describes it ; in other instances, it is more like a piece of cartilage ; or a layer of parchment, extending under and round the ulcer. In all cases it is well defined, its edge being distinctly to be felt—thus differing from the hardness sometimes produced

round the chancroid, which, being a simple inflammatory effusion, is diffused and undefined.

The amount of induration, both in thickness and extent, varies very much; so that it has been found convenient to describe two distinct kinds of indurated chancre. Both are equally syphilitic, but both are not equally *severe* in the character of the symptoms which succeed them. Their difference is one of degree, not of kind. They are, 1st, *the Hunterian or deep variety*; 2ndly, *the superficial*, which has been designated by various names, every observer being struck with the necessity of distinguishing it from the first. Thus Carmichael describes it under the name of *patchy excoriation*; Wallace, as *superficial primary syphilis*; Ricord, who remarked particularly the thin layer of induration characteristic of it, called it *chancre-parcheminée*; Bassareau names it *l'érosion chancreuse*; Langlebert, *l'érosion superficielle*; and Diday, *érosion chancriforme*. All these names describe the same thing, and point to the same distinguishing features, being not so much the small amount of induration as its superficial character.

The characters of the two may be thus contrasted. The Hunterian is developed more rapidly, taking, perhaps, only a week or ten days to form. When fully developed, it presents a deep, excavated ulcer, with a dirty, sloughy surface, secreting a sero-sanguineous discharge—situated upon an indurated base, which, when grasped, is found to extend deep into the tissue, and is very firm; this indurated edge is often raised like a ring round the ulcerating centre; the ulcer increases in depth and circumference to a certain point, and then stops, limited by the induration, which is very persistent. Induration of the glands in the groin accompanies this. The superficial chancre, on the other hand, takes a longer time to form—from three to five weeks. It appears like a dry, elevated, coppery-coloured papule, generally presenting a spot of superficial ulceration at its most prominent point, but sometimes without any ulceration whatever. The surface of the sore, when as usual there is ulceration, is red, nearly on a level with the surrounding parts, and furnishes but a scanty serous secretion. The

induration which surrounds this little ulcer, when passed between the fingers, feels like a thin layer of cartilage or parchment. The glands in the groin are enlarged, hard, and indolent.

Every degree and gradation between these two extremes are met with, but chancres having nearly, if not all, the characters of the superficial kind, are much the most common. The parchment-like induration, which shows the true syphilitic character of this innocent-looking abrasion, often disappears before cicatrization is complete, so that sometimes "the period in which we can recognise its presence is but very limited."*

The situation of the sore affects the amount of induration very much ; thus, on the corona-glandis it is very well marked, while if occurring on the outside of the prepuce it is frequently very indistinct; and in the vagina it is also badly marked, but on the external labia it is sufficiently distinct. Ricord explains these differences by the distribution of the lymphatic vessels; when these are abundantly supplied, the induration is distinct, and when they are not, it is badly marked ; this explanation is rendered the more probable as the induration of the chancre, and the indolent enlargement of the lymphatic glands in the groin, form and increase simultaneously. Situation is supposed by some to account altogether for difference in amount of induration ; but this cannot be the case, as we observe the deep Hunterian chancre, and the superficial indurated erosion, occupying precisely the same position in different patients.†

The indurated tissue sometimes continues to increase while the central ulcer heals, and thus we often meet with a mass of induration under the thin cuticle, without any ulcer whatever. I believe this may form originally without any sore ; but it is difficult to give proof of this, as an abrasion may have existed, or been overlooked by the patient. Certainly we meet with induration where no ulcer or abrasion has been noticed by the patient ; and sometimes it gains a very large size before it attracts attention,

* " Ricord's Lectures," p. 62.

† Evidence before Ven. Com., Q. 4136.

being accompanied during its increase by no pain or sensation of any kind.

Examined with the microscope, syphilitic induration presents no peculiar features; it has the structure seen when any lymph is examined, being that known as fibro-plastic.

Induration has been supposed to be the seat of the virus, and it has been thought, therefore, that its free removal by the knife or by caustics would save the constitution from the further stages of the disease. This theory has been disproved by this practice completely failing in all cases in which this has been attempted; the induration has returned round the wound thus made, and the second stage, consisting of general syphilitic symptoms, has been produced in its usual course. It must be borne in mind, however, that the excision thus practised never could be complete, for the lymphatic glands were indurated as well as the chancre, and they could not be removed.

3rd. *The surface and secretion* of the syphilitic chancre differs from that of the chancreoid in some particulars; the surface of the superficial variety is smooth, red, and on a level with the surrounding induration, while there is scarcely any secretion, until the chancre is irritated either with caustic or other irritant, when it furnishes for a time a purulent fluid, which, as the irritation subsides, disappears. The surface of the deep or Hunterian ulcer is covered with a greyish slough, its edges uneven, and it furnishes a scanty sero-sanguineous secretion. As already stated, when describing the simple chancreoid ulcer, Mr. Lee has shown that the appearances produced by the microscopic examination of the secretion of each sore are quite distinct; the secretion of the simple chancreoid ulcer is abundant and purulent, that of the syphilitic chancre, of either variety, is scanty, and generally contains no pus globules, but simply epithelial scales in a serous fluid; very often the superficial chancre is quite dry, presenting no secretion.

4th. *The syphilitic chancre is solitary*, not invariably, but generally. Fournier states that of 456 patients treated for indurated chancre in the Hôpital Du Midi while he was there, 341 had

single, and 115 had more than one chancre; of these, 86 had two only; the conclusion being that more than three-fourths of all the cases of indurated chancre are single. The statistics of M. Clerc confirm this, 80 per cent. being, according to him, the proportion of single to multiple chancres.

Diagnosis.—We have thus four well-marked characters of the syphilitic chancre, upon which to form our diagnosis—1st, Its gradual development; 2ndly, Its characteristic induration; 3rdly, Its peculiar surface and secretion, when there is any ulceration; and 4th, The fact that it is generally single. Strange as it may seem to those who as yet have only considered this subject theoretically, these are not in all cases sufficient to establish a certain diagnosis. There remains, however, a fifth character of the syphilitic chancre, which is the most certain indication we possess of the nature of the sore, and one upon which we may, when we find it accompanying those already mentioned, confidently form our opinion; this is the enlargement of the lymphatic glands in the groin, the indolent bubo, which forms at the same time as the sore.

5th. *Indurated bubo* is an almost invariable companion of the indurated chancre. Of 120 cases of chancre which were followed by syphilitic erythema, Bassereau states* 116 had indurated bubo at the same time, 1 suppurated, and 3 were not accompanied by any appreciable glandular affection. As this proportion is fully borne out by all who have noted the cases under their observation, we may conclude that the absence of the indurated bubo is a rare exception where an infecting chancre exists.

The glands which are affected when the chancre is on the penis or vulva, are the inguinal; when the chancre is on a finger, the bubo will be at the bend of the elbow; when at the anus, at the crest of the ilium; when on the lip, the glands under the jaw are affected; in fact, the first glands in the course of the lymphatics from the sore are those affected; very generally both sets of inguinal glands are affected from a chancre on the penis. This

* Bassereau, Op. Cit., p. 147.

enlargement of the glands is quite peculiar ; it occurs in no other disease, nor indeed could ever be mistaken for any other kind of bubo. It consists of an indolent enlargement of a number of the glands, one generally being more enlarged than the others, but there are always several involved ; they can be felt distinct from each other, and very hard, the induration so characteristic of the chancre is in fact reproduced in the glands. There is no symptom of an inflammatory kind accompanying this, neither heat, pain, or redness ; the glands may be handled freely without the patient experiencing any pain ; and so little does the disease annoy him, that it frequently escapes observation altogether until the surgeon discovers it ; occasionally the separate glands become matted together into one indurated mass, which then presents the appearance of a flattened indolent tumour, extending from the pubis nearly to the spine of the ilium, the skin covering it being perfectly natural, and no pain being felt upon pressure. The induration of the glands appears usually at the same time as the chancre, *i.e.* from the end of the first week to the fifth week after the virus has been received ; it continues without much change for months, and gradually disappears at the same time as does the induration of the chancre. It very rarely suppurates ; but this does occasionally occur, but appears when it does so happen to arise from causes which are quite independent of syphilis. Thus, a strumous diathesis may cause the glands to suppurate, the morbid action of syphilis in them acting as an exciting cause, or the patient may subsequently contract a chancroid sore, which may produce a supuration of the glands ; or exposure to wet or cold, the ordinary cause of inflammation, may act here in the usual manner, and provoke suppuration, but it is never apparently the result of the syphilitic poison alone.

Thus the presence of indurated glands confirms the diagnosis of a syphilitic chancre ; and indeed so invariable is this accompanying symptom, that where no such glandular enlargement is to be felt, doubts must arise as to the syphilitic character of the sore, and we must wait until the question is settled by the appearance or non-

appearance of the secondary symptoms. But the presence or absence of indurated glands may not only confirm or throw doubt upon a diagnosis previously made ; the indurated bubo is in some cases the only sign we possess of the true nature of the case. Thus, the chancre may be situated on or near the os uteri, and escape detection, or it may be within the urethra, or it may have disappeared altogether, and the patient himself be quite ignorant of the possibility of infection, as in the following case related by Ricord :—*

“Two or three years ago, one of our most prominent young physicians came to me with a frightened air, when the following conversation ensued:—‘Until now I had faith in your doctrines, but I find them at fault, and in my own person ; it is too bad. What is this?’ (removing his clothes, and showing me his breast and back.) I examine him, and reply—‘A fine syphilitic reseolæ.’ ‘Syphilitic, did you say? Are you sure?’ ‘Perfectly so.’ ‘Very well, you condemn yourself; I have never in my life had any venereal symptoms, but a gonorrhœa, and that was twelve years ago.’ I examine him from head to foot, and say to him—‘My friend, you have recently had a chancre on your right hand, which was situated neither on the thumb nor on the index, but upon one of the remaining fingers.’ ‘You are joking.’ ‘Not at all; you have a bubo at the present moment,’ and I place his finger upon a ganglion still engorged near the elbow-joint. After thinking a moment, he then told me that a few months before, while treating a woman with chancre, an ulcer appeared on the middle finger of his right hand, to which he had paid but little attention, and which had soon healed. ‘This,’ said I, ‘is the source of your reseolæ; act accordingly.’”

This indolent enlargement of the glands is, I believe, the most reliable single symptom we possess of syphilis during its first stage. As a further aid to diagnosis, the following most suggestive fact regarding the indurated chancre may here be mentioned :—

6th. *The syphilitic chancre is not auto-inoculable.*—The chancre is readily inoculated upon the patient who has it, and as we have seen, is constantly multiplied in practice by its secretion lodging round the corona glandis, and elsewhere. The

* “Letters sur la Syphilis,” p. 431.

symphilitic chancre, on the other hand, cannot be inoculated upon the person who has it, unless its surface, being irritated, purulent matter is formed, and this, when inoculated, produces not a true chancre, but an abortive pustule.

The experiments of Fournier, Rollet, Lee, and others on this subject, show that except in a very small minority of cases it is not possible to obtain an indurated chancre from the inoculation of the secretion of this sore upon the patient who has it; but that when inoculated upon another person who has never had the disease, it produces, after the lapse of its usual time, the characteristic chancre. The inference is unavoidable, that, by the time the indurated chancre has formed, the system is already infected, and protected. The practical bearings of this fact are very important, but our diagnosis will seldom or ever require its aid; nor indeed if unable to form a distinct opinion from the symptoms already detailed, would this enable us to do so, for the non-success of an inoculation may result from other causes besides the protection afforded by the presence of syphilis, and on the other hand it is possible that the poison of the two sores may be mixed, in which case a sore would be produced, and syphilis be present also; but if not of much direct aid in proving our diagnosis, the fact here stated completely overturns the old practice of inoculation to discover the character of the sore. It was until lately the practice to inoculate the secretion of a suspicious sore, and to conclude, if a sore was produced in the course of a few days, that the disease was syphilis, and required mercury as a matter of course, the very opposite being the truth. This source of error is now happily abandoned.

Taking the symptoms and characters now detailed into careful consideration, there are but few cases in which we will not be able to form a reliable diagnosis as to whether the sores presented to our examination are syphilitic or not. It is, however, necessary to take *all* the points of difference into account. An opinion formed upon the presence or absence of one or two characters, may often be erroneous; while if we carefully note the several distinctive

symptoms, the formation of our diagnosis may in some cases be slower, but our conclusion, when arrived at, will have the great advantage of being correct; and consequently not requiring to be reversed upon a subsequent examination.

The deep or Hunterian chancre leaves a deep cicatrix, and the superficial chancre a slight superficial cicatrix; so that in after years, the fact of the disease having been there is thus evidenced. Cases not unfrequently occur in which the surgeon is desirous to know whether the system of his patient—then, perhaps, suffering from an ununited fracture, or other form of injury or disease—has at any former time been syphilitic; and he examines the organs of generation with the hope of obtaining evidence there for or against this idea. Under such circumstances, I would not place any reliance upon marks found on the generative organs, as the simple sores may, under certain circumstances, leave indelible marks, as well as the syphilitic chancre; and in the case of the latter, we will have much more certain evidence in the marks left by the constitutional symptoms of the syphilitic poison having been present in the system. I have known the cicatrices of buboes in the groin pointed to as proof of former syphilitic infection. As the syphilitic bubo seldom or never suppurates, as far as they go, these cicatrices make it probable that it was not syphilis from which the patient suffered at the time. They should never be referred to as proofs of syphilis.

The induration of the glands in the groin may, however, be a valuable aid to us in forming our diagnosis, not only of the chancres, but of subsequent symptoms; for it often remains during many months, indolent and unnoticed, but a certain proof of syphilitic infection.

The lymphatic vessels which extend from the chancre to the glands, are, according to Ricord and Bassereau, not unfrequently the seat of induration, and may be felt, like a hard cord, extending, when the chancre is on the penis, along the dorsum of that organ, nearly up to the glands. Bassereau relates a case where the vessel could be traced distinctly from a chancre on the chin to an

indolent bubo under the jaw. The same kind of action takes place in the vessels as in the glands—viz., a deposit of syphilitic lymph, which slowly produces an induration of their sides. It appears to remain in the same indolent state as the bubo, and to decrease and disappear simultaneously with it.

Prognosis.—When the diagnosis has been made of an indurated chancre, we have, as we have just seen, reason to believe that the poison of syphilis has already entered the system, and that constitutional symptoms will appear in their regular course. It is on account of the gravity of this prognosis, that the diagnosis becomes so important. This conclusion, that the indurated chancre is not a local disease, but is the first stage of syphilis, is supported by the experience of surgeons in all parts of the world. Climate may make a difference in the time of the appearance of the eruption and other symptoms, and in their severity and duration, but cannot prevent them. Ricord proclaims with confidence that, in the climate of his own country at least, “six months will not elapse without manifestations coming on of syphilitic intoxication,” no treatment having been employed.

Admitting the necessary sequence of general symptoms, can we form an opinion of the character which these symptoms will assume from the character of the sore? I believe in many cases we may do so. Carmichael traced four different kinds of eruptions to as many different kinds of chancres, and maintained that each was produced by a separate poison. Now, while this theory of the plurality of poisons is abandoned, we should remember that Carmichael's views were founded upon extensive observation of facts, numbers of which he has recorded, showing some connection between the character of the chancre and of the secondary symptoms; indeed, he pronounces the theory of the plurality of poisons—which he adopted in lieu of any better explanation of the difference which he observed between different cases—as of small moment, so as we recognise the “grouping of the symptoms.” Bassereau noted 170 cases of syphilitic erythema, which is the mildest form of eruption, and found that in 146 of them the form

of the chancre had been that of the "erosion-*chancreuse*," which is his name for the superficial chancre, while in the remaining 24 the Hunterian or phagedenic variety had existed, leading to the conclusion, that in the great majority of the milder cases of syphilis, the superficial variety of indurated chancre is the initial lesion, while, at the same time, that no *necessary* connection exists between the primary and secondary symptoms, inasmuch as in a small minority of the cases the severe form of chancre was followed by the milder form of eruption. This conclusion was further strengthened by the result of his observations regarding the chancre which most frequently was associated with the *pustular* form of eruption, which is universally recognised as evidencing a severe syphilis. Of 68 cases of pustular eruption, he found 3 only in which the chancrous-erosion had existed, while 41 were preceded by the deep ulcer with extensive induration, and 20 were phagedenic. From which Bassereau concludes, that after the mild form of indurated chancre we usually will have the milder form of syphilitic eruption, and that the affections of the different tissues will not have any tendency to suppurate ; while after the more severe form of indurated chancre, we will have a severe pustular eruption, ulceration of the skin, suppurating nodes, caries, and necrosis, and thus expresses himself:—"The chancre is, as it were, the touchstone of the constitution. By the action which it exercises upon the tissues, we may judge of the course which the consecutive symptoms, when they show themselves, will pursue, both those that appear late as well as the early. The benignity of the chancre announces that the constitutional symptoms will be of little severity ; its malignity, on the other hand, tells us that the patient will be attacked with consecutive symptoms of great gravity."* He admits that dissipation, starvation, or other debilitating causes may make the consecutive stages of a mild chancre severe and protracted, and on the other hand, that judicious treatment may modify the severity of those of the deep chancre, but contends that such exceptions

* Bassereau, *Op. Cit.*, page 443.

do not interfere with the accuracy of the general conclusion—“which,” he maintains, “may take rank with those pathological laws which are best demonstrated.” These views find another able advocate in Diday, who thus declares his convictions:—“By its form, the primitive lesion denotes the degree of force which the syphilis possesses, the commencement of which it marks, as well as the degree of virulent force of the lesion, from contact with which it proceeds. Or, in terms more precise, the primitive lesion offers in its form the reflection of all those influences which, at the moment when we see it, contributes to make the syphilis in the particular patient who has it either severe or mild.”*

This testimony to the general accuracy of Carmichael’s observations, is all the more important as coming from authors who differ widely from him in the manner in which they explain the facts they have observed—authors, whose high repute and extensive field of observation render their opinions of the greatest value.

It appears to me, that in forming an opinion of the mildness or severity of a case of syphilis from its first stage, we should be guided not so much by the amount of *induration* present, as by the *ulceration*. If the chancre has a deep ulcer with a sloughing surface, or high indurated edge, it is a severe case; but if there is simply an indurated nodule, without any, or scarcely any, ulceration, that is not a bad case, although the induration be very extensive, and the glands in the groin be also extensively indurated.

Bumstead supports this view, remarking—“The degree of *ulcerative* action attending an infecting chancre may be taken as indicative of the general condition of the system, and of the probable character of the general symptoms which are likely to follow.”

The following case was lately under my care:—

J. S—, a young man of a florid, full habit, in February, '67, presented himself with a mass of induration at the frenum, about the size of a walnut, without any external ulceration, but there was a slight discharge from the urethra. There was a large mass of induration in the

* “Histoire Nat. de la Syphilis,” page 86.

left groin, extending nearly the whole length of Poupart's ligament, and composed of the glands glued together by plastic effusion. Accompanying these primary lesions, there was an erythematous eruption over the anterior surface of the abdomen and chest, which ran a mild course, without the slightest constitutional disturbance or complication.

Should phagedenic ulceration attack an indurated chancre, the prognosis of future symptoms will be highly unfavourable.

Babington says—"The secondary symptoms which follow the phagedenic sore, are peculiarly severe and intractable; they commonly consist of rapid sloughing of the throat, ulceration of the nose, severe and obstinate muscular pains, or afterwards inflammation of the periosteum and bones."*

It has been stated, when describing phagedenic ulceration,† that it is found in connection with the simple chancreoid ulcer much more frequently than with the indurated chancre. It does, however, sometimes attack the latter, and then becomes a serious complication, both from its immediate local effects, and from the serious general symptoms which will probably ensue. Still it demands no further notice here; for its cause, appearance, progress, and treatment are the same whichever sore it complicates. It may, however, be well here merely to remark, that the process of destructive ulceration which we see take place in phagedena, is the very opposite of induration, and therefore that mercury, which we know removes induration, is, *a priori*, contra-indicated in phagedena, although it may complicate an indurated chancre; and this inference, from the nature of the process going on in the part, is amply confirmed by experience. Phagedenic ulcer occurring with indurated chancre should be treated precisely as if it had arisen with the other sore.

Treatment.—With regard to the treatment of the indurated chancre and bubo, it is the treatment for syphilis in its earliest stage, when, as we have seen, the virus has already entered the system, and no merely local treatment can avail anything. Caustic and the knife have been employed in vain; no removal of the chancre

* "Ricord and Hunter on Venereal," Second Edition, p. 307.

† Chapter iii.

will influence the disease ; therefore local must give place to general treatment ; beyond keeping the part clean with the chloride of lime solution, nothing should be done. The administration of mercury causes the induration gradually to disappear ; regularly, as this medicine takes effect on the system, the hard indolent glands, and the induration round the chancre, day by day lessen and disappear. No other medicine, as far as we yet know, possesses this power. How far this treatment is of use, the best manner of employing it, &c. will best be considered when, the whole train of the symptoms of syphilis being before us, we will be in a position to judge of the efficacy of treatment, to see what it can and what it cannot do, and to determine what method is most applicable for each of its stages.

CHAPTER VI.

THE SECOND STAGE OF SYPHILIS.

THE second stage of syphilis commences when *general* or *constitutional* symptoms, as they are termed, begin to make their appearance. It is invariably preceded by the first stage, except in cases where the disease has been received by hereditary transmission. When we reflect upon the indolent, painless character of the syphilitic chancre and bubo, and that there is frequently no discharge to attract attention, we cannot be surprised that patients with well-marked secondary symptoms sometimes declare that they have had no primary disease whatever. The chancre may have been supposed to be a mere abrasion, and as it cicatrized shortly, and left no trace of its existence, was soon forgotten; or it may have existed in a situation where it would escape notice, either in the urethra or vagina. Considering these sources of error, patients may themselves believe that they never had any primary disease; but their assertions, however sincere, cannot be taken as establishing the possibility of exception to the general rule, that the first stage invariably precedes the second. This is established not only by the general experience of the profession, but by the careful observations of Fournier and Bassereau, the former of whom examined 826 cases of secondary disease, and found the evidences of pre-existing primary disease in 815 of them, two of the remaining 11 being cases of hereditary taint; in 9, the primary disease could not be proved, but was suspected. Of 198 cases examined for this purpose by Bassereau, 5 declared they had no preceding symptom, while 4 said they had gonorrhœa; so that of 1,291 cases, the secondary stage was proved to have been preceded by a

chancre in all except 18. Remembering, in addition to what has been already said, that patients, from various motives, often desire to conceal the existence of chancres, we must conclude that these few exceptions to the general rule are only such in appearance, and that there is no proof of secondary disease ever existing without the previous existence of the first stage, except when the disease is hereditary.

The second stage is separated from the first by a distinct period of incubation, during which the patient shows no symptom whatever of the presence of the disease in his system, except the induration of the chancre, and the hard, indolent enlargement of the neighbouring glands. The length of this period has been accurately examined; it varies within certain limits, and is considerably influenced by the severity or mildness of the infection, the second stage being slow to make its appearance in mild cases, while in the more severe the symptoms advance rapidly; it is also influenced by the treatment adopted for the first stage, and by the health and habits of the patient.

It is evident that in any cases quoted to prove the length of this period, the time when the chancre became indurated, and the time when the first general symptoms were developed, must be accurately known, and also that no mercurial treatment must have been employed. Diday* relates 52 cases in which these conditions were fulfilled; in them the shortest period of incubation was 25 days, and the longest 105, the mean time being 46 days. Fournier, from an examination of 307 cases of syphilitic erythema, concludes that this eruption, one of the earliest symptoms, appears from the 40th to the 50th day after the development of the chancre. Bassereau,† from a similar examination, found in the majority of cases the eruption appeared either between the 30th or 60th, or from that to the 90th day after the date of infection, which, allowing two weeks for the development of the chancre, would leave about 40 days as the average time. Mr. De Meric‡ states

* "Nouvelles Doctrines sur la Syphilis," p. 265.

† Op. Cit. p. 175.

‡ "Letsonien Lectures," 1858.

six weeks as the mean time according to his observations. Bumstead* relates 4 cases in which he could accurately estimate the length of the incubation, and found it vary from 40 to 64 days.

The conclusion warranted by these and other observations is, that *six weeks* forms the average period which elapses between the full development of the chancre and the appearance of the symptoms of the second stage; but a much longer time than this may elapse, the various circumstances I have already mentioned considerably modifying this period of incubation. With regard, however, to the utmost limit of this period, we may conclude that six months will, under no circumstances, elapse without some symptom of the second stage appearing.

As long as the incubation period lasts, the poison being latent in the system, the patient feels perfectly well; when, however, the symptoms of the second stage are about to be developed, but before they actually appear, certain *premonitory signs* show themselves. The patient's appearance changes. He looks ill, he is languid, and complains of headache, and aching pains in his limbs, which are worse at night. These premonitory symptoms are sometimes but slightly marked, and are then much relieved when the skin eruption appears; in other cases, however, they are very severe and prolonged. This is frequently the case in women, in whom these symptoms assume sometimes a very great severity, and produce a very marked anæmic state, leading the ignorant practitioner entirely to mistake the nature of the case, particularly, when, as is often the case, the patient, being a young married woman, does not suspect the cause of her illness.

The headache and pains in the limbs are the most constant symptom of this premonitory fever; they usually appear about a week before any eruption is noticed, and last for a variable time, often until the treatment begins to influence the symptoms, when they quickly disappear before the eruption has begun to fade.

These premonitory symptoms have been explained in two ways, the most usual being that adopted by Diday, who considers them

* Bumstead, Op. Cit. p. 456.

as neuralgic, and analagous to the pains experienced in the early stage of fever. Others look upon them as periostitic. Bassereau adopts this view, contending that Hunter's law, in which he lays down that syphilis always proceeds from the circumference of the body to the deeper parts, invading the different tissues in this order, is faulty, and that the true way in which it affects the tissues is, that all are at first affected superficially, and afterwards more profoundly. This is certainly true of the skin, and derives support from the fact that the poison is undoubtedly at first free in the blood, and is by it carried to all the tissues; upon all alike, therefore, we would expect it to produce its effects. It appears to me that the intermittent headache and pains in the limbs, which accompany the premonitory fever, and which are generally very transient, are neuralgic, and correspond to the lumbar and cephalic pains which usher in typhus fever; but that the persistent headache, which often lasts for many weeks after the eruption has appeared, is produced by superficial syphilitic inflammation of the pericranium. It will be found that in these cases the pain is increased by pressure over the surface of the skull, and that a superficial periostitis is the true explanation of the persistent rheumatic pain of the second stage. No effusion takes place beneath the periosteum, raising it up into a node, as occurs in the later stages; but upon examining the part complained of, it will be found that there is a circumscribed tender spot, pressure upon which causes acute pain.

A young woman, lately married, applied to me, in November, '67, complaining of a constant headache for the previous two months. She made no other complaint; but upon examination I found her skin exhibited a well-marked syphilitic eruption, and an indurated chancre and inguinal glands were then discovered. Her husband, I found, had been under my care for syphilis previous to his marriage. The headache was constant, and pressure over her skull was complained of; laying her head down on the pillow was even painful. There was no marked anæmia or cachexia in this case, the patient being a stout, healthy young woman. Being placed upon treatment suitable for the second stage, without any special reference to her headache, this quickly disappeared.

A young man called upon me some months ago, complaining of constant headache, which became so much worse at night as to prevent his obtaining any sleep. He had well-marked indurated chancre and bubo, and was covered with a syphilitic eruption, which had appeared over his skin about a fortnight previously. His chief complaint was the pain in his head and in his limbs; pressure on the head increased this pain. Before entering upon the treatment suitable for the removal of the eruption, I prescribed specially for the pains—five grains of iodide of potassium three times a day, and in three days the patient returned to say that he was free from pain, and was able now to sleep soundly.

The premonitory fever of the second stage is very frequently accompanied by an anæmic condition, which is generally most marked in women.* A series of experiments, made under Ricord's suggestion, by M. Grasi, upon the blood at this period, showed a remarkable diminution of the red globules—a de-globulization, amounting ordinarily to a loss of one-seventh of the number usually found in a given quantity, and sometimes extending to nearly a half of the normal amount. This anæmic condition is confined usually to the early part of the stage of the disease now before us; the blood appears to recover its normal composition subsequently in the majority of cases, but sometimes young women never recover this chloro-anæmia; it lends a peculiar character to the future symptoms, and appears to me sometimes to lead to a fatal termination through the production of phthisis; it demands the most careful consideration in practice, for the mercurial treatment, which is suitable for the purely syphilitic symptoms, will not only not remove, but will seriously increase this state of the blood.

The premonitory fever varies greatly in intensity, being in many cases quite unnoticed by the patient, who, however, when his attention is drawn to it, acknowledges to have felt listless and poorly for some days before any symptom appeared. At times, on the other hand, the change in the patient's appearance is so great as to be noticed by his friends, and his sufferings so severe as to demand immediate attention; this may continue nearly a week

* "Leçon's sur le Chancre," p. 146.

before a cutaneous eruption appears, when the general fever is relieved.

The order in which the phenomena of the second stage appear is by no means invariable; frequently the appearance of one symptom leads to the discovery of another, and they appear to have been developed simultaneously. The following are the symptoms which appear during the secondary stage, arranged in the order in which they not unfrequently occur. Sometimes, but rarely, they may all be present at the same time; more usually only some of them are present, the others not appearing at all:—

- 1st. Falling of the hair—syphilitic alopecia.
- 2nd. Enlargement of lymphatic glands.
- 3rd. Cutaneous eruptions—syphilo-dermata.
- 4th. Ulceration of the fauces, and condylomata.
- 5th. Inflammation of the iris and retina.

Of these symptoms the 2nd, 3rd, and 4th are very constantly observed, a cutaneous eruption being the most constant symptom of all; the 1st is not so common, but is frequently seen; while the 5th is comparatively rare.

1st. *Alopecia*.—This is a most uncertain symptom, but one which, when it exists, affords an important aid in diagnosis, as it is so apparent; the hair falls out, not in patches, but chiefly over the top of the head and along the line of division; it sometimes goes so far as to produce almost complete baldness, and occasionally extends to the eyebrows and lashes, and to the hair of the beard. Diday contends that it is produced not by the direct effect of the syphilitic poison, but by the anæmic condition already described, which so affects the nutrition of the bulbs of the hair, as to cause their fall; and remarks, that although it is observed amongst the symptoms of the second stage, yet that its cause is anterior to them, and that it should be classed amongst the premonitory symptoms. We do not, however, find alopecia more frequent or extensive when the anæmia is most marked, and consequently the connection between the two cannot be maintained. Other authors attribute the alopecia to the pustular eruption which is very fre-

quently found on the scalp, and which I have found to be present in every case in which I have noticed the hair to be falling. The duration of this alopecia has to be counted by months. Diday says—"In three of my patients, when this accident had come on with particular severity, I noted the lapse of time which took place before the hair was again growing well; in the first it was from November, 1855, to April, 1856; in the second, from February, 1856, to November, 1856; and in the third it was an entire year, from October, 1855, to October, 1856."* No matter how extensive the depilation may be, we may, however, cheer our patients with the assurance that it will not be permanent, the hair always grows again. It is probably a sign of the severity of the case when there is an extensive and obstinate alopecia; but we have much more certain characters by which to judge of the mildness or severity of the disease.

2nd. *Enlargement of lymphatic ganglia.*—This is an important and very constant symptom of the second stage. It consists in a swelling or engorgement, not an induration, of the lymphatic glands in different parts of the body, those most generally found affected being the posterior cervical glands, which lie along the posterior border of the sterno-mastoid muscle. The glands in this region, when in a healthy state, can with difficulty be detected by the touch. When syphilitically enlarged, they can be felt very plainly, about the size of an haricot-bean, movable, forming sometimes a chain; occasionally only one or two on each side are enlarged; in some instances they are so swollen as to be quite visible, and to attract the attention of the patient's friends. Other glands besides the posterior cervical are at times similarly affected. Sigmund, of Vienna, has especially drawn attention to a gland situated just above the inner condyle of the humerus, which he thinks is very frequently enlarged. The glands in the axilla and the sub-maxillary have also been noted in cases where there was disease affecting the skin in their neighbourhood. Bassereau has noticed the ganglionic engorgements at all ages from infancy to

* "Histoire Naturelle," p. 107.

extreme old age, in which latter, Ricord thinks them rare. It ends almost invariably by resolution. The cause of this almost invariable symptom, and the reason of its specially affecting the posterior cervical glands, has attracted the attention of observers, and received different explanations; the most probable being that it depends upon a double cause—a general and a local one. The syphilitic poisoning of the system produces a general tendency to glandular enlargement, while the local cause of its most frequent seat is the presence on the scalp of some pustules; for it is a fact, that whatever may be the form of eruption present on the body, the scalp is most frequently affected by a scattered pustular eruption. A simple impetigo of the scalp produces enlargement of the of the posterior cervical glands, and so the specific eruption produces a similar effect. Ricord states that the glandular engorgement may exist without any eruption whatever on the scalp; but certainly, in the great majority of cases, the two are found together.*

The importance of this symptom consists in its diagnostic value. We have here an evidence of the existence of the disease of which the patient knows nothing: which requires no questioning for its discovery; which may be recognised by a touch; and which, taken with other symptoms, is most characteristic; one, too, which is invariably present in the stage of the disease we are now considering.

3rd. *Eruptions on the skin, or syphilo-dermata.*—A cutaneous rash is characteristic of all kinds of fevers. The syphilitic eruption is as invariably present as is that of any other of the group; but it differs from those in this respect, that while they always observe the same character, it appears under various forms in different cases, and even in the same patient we may find several kinds of eruption existing at the same time. This tendency to polymorphism is highly characteristic of syphilitic eruptions.

Considerable confusion exists about syphilitic eruptions, their character not being sufficiently recognised, and consequently too

* See Diday "Hist. Nat." p. 126; Bassereau, p. 70; Bumstead, p. 458.

much stress being laid upon slight differences in form ; and also from the fact, very frequently overlooked, to which Ricord has drawn special attention, that one set of eruptions appear at an early stage, and another set at a later stage of the disease. The broadly distinctive features of each eruption are readily recognised, and are characteristic both of the stage at which the disease has arrived, and of the mildness or severity of the type.

The following appears to me to be the most practical classification to make of syphilitic eruptions. First to divide them into two distinct classes. The 1st class, consisting of those which appear in the early, *i.e.* in the second stage of the disease ; the 2nd class, consisting of those which appear in the subsequent period, or the third stage of the disease.

With the former only we have now to do ; the consideration of the latter will naturally follow, when the period of the disease in which they occur is before us.

The eruptions which appear in the early, or second stage, may be described under the three following leading forms :—

- 1st. The erythematous, or roseolar.
- 2nd. The papular.
- 3rd. The vesicular, bullous, and pustular.

All of these may appear while the indurated chancre and bubo of the first stage still remain ; they immediately succeed to the premonitory fever, and are accompanied by the enlargement of the glands already described, as well as by sore throat, and other symptoms yet to be considered.

1st. *Syphilitic erythema* is the earliest and mildest of all the syphilo-dermata. It appears very insidiously ; so little indeed does it annoy the patient, that he is frequently unaware of its presence, and may escape detection by the surgeon if he be not fully aware of its character. It consists of spots, irregular in size, at first of a very red colour, but subsequently becoming somewhat darker, very slightly, if at all, raised above the surrounding skin ; the spot disappears upon pressure being applied, and immediately returns when it is removed.

Bassereau* describes two varieties—the maculated and papular. The former “is characterised by spots, which are not prominent, of a rose-colour, or pale-red, disappearing completely under the pressure of the finger.” The latter, or papular variety, “is formed of spots, frequently of a vivid-red, sometimes of a dark coppery-red colour, forming manifest prominences, upon which we can distinguish inequalities formed by diseased follicles. We can make the papular erythema pale, but cannot cause it to disappear by the pressure of the finger; the spots present a yellowish tint, as if one part of the fluid with which they are injected had become combined with the superficial layers of the skin.”

Syphilitic erythema is generally best marked upon the anterior surface of the chest and abdomen, upon the axilla, upper-arms, and thighs. It seldom appears upon the face, but not unfrequently spots of a papular appearance form just at the line of junction of the forehead with the scalp, and generally there are scattered spots through the hair; but this, as I have already remarked, is nearly always pustular. Of 153 cases of erythema, Bassereau found the scalp affected with a pustular eruption in 106 cases, 28 had none at all, and in the remainder it was papular, &c. The hands are not usually affected, the back very seldom, and the external surface of the limbs never. The natural course of the eruption is, to become gradually darker, assuming a faint coppery hue, and to disappear at the end of about six weeks; but its duration may extend to many months, and is much influenced by treatment. Diday says on this point:—“It disappears of itself after a period which varies from eight days to six weeks, but the regions where the eruption has been continues to present traces of it whenever a sudden change of temperature is experienced—for example, upon the patient quitting his bed, or coming out of a bath.”† There is not the slightest itching during any period of the course of the eruption. We find other syphilitic symptoms frequently associated with erythema: condylomata, or, as they are called, mucous patches, are very common with this eruption, also superficial ulceration of the fauces and back of the

* Op. Cit. p. 49.

† “Hist. Nat.” p 120.

pharynx ; these, with the enlargement of the lymphatic glands of the neck and falling out of the hair, generally form the rôle of symptoms accompanying this eruption.

2nd. *Papular eruption* consists of small rounded elevations of the skin, of at first a pink colour, but subsequently becoming darker, and frequently assuming a chocolate-brown hue. The finger passed over the skin readily feels the elevation of the papules. After existing some time, the cuticle over each papule gives way and desquamates, and then the eruption presents a scaly look ; this is its stage of decline. While, however, this is taking place in one part, fresh papules are appearing in another ; the decline of the papules in one part being quite consistent with a continuance, or even an increase, of the eruption. The papules generally disappear leaving no mark, but occasionally a dark, coppery stain remains in two or three places, when all other symptoms have disappeared.

The shape and size of the papules vary : they are sometimes broad and flattened, *lenticular* ; sometimes more raised and pointed, *conical* ; and sometimes very small, with occasionally an effusion of serum at their apices, *miliary*. They come out over the chest, abdomen, back, forehead, and face, and upon both surfaces of the extremities, but in the scaly stage are usually confined to the inner surfaces, the fine skin of the fore-arm being an almost invariable position in which some will be found ; the palms of the hands frequently present papules of a deep coppery colour. Carmichael was the first writer who described the papular as distinct from pustular or tubercular eruptions ; writers before his time having confounded them together.

The papular seem to be formed by the effusion of syphilitic lymph in the superficial layers of the skin, and chiefly in the hair-follicles, for, in the early stage of the eruption, the papules may usually be seen to have a hair passing through them, which soon falls out.

The frequency of the papular, in comparison to the other forms of eruption, seems to vary in different countries, and, probably, in the same country at different times, according to the mildness or severity of the prevailing syphilis.

During the six years in which Bassereau was collecting his cases he met with but 50 examples of papular, while he records 200 cases of erythematous eruption. In this country, my own experience (the same, I believe, as that of other surgeons) leads to the inference that the papular is certainly not less frequent than the erythematous. Its development is sometimes very rapid, but its course is always very slow. When uninfluenced by treatment it will last for about four or five months, new crops of papules appearing on different parts of the skin, while they are desquamating and disappearing in the parts first involved. The colour of the spots varies with their age; the coppery colour being characteristic of the latter stages, the spots which appear at a late period of the eruption assuming this tint more quickly than the first ones. I have a coloured drawing, taken some years ago from a patient, in which the whole of the front and back of the body, arms and face, were thickly covered with a papular eruption, of so dark-brown a colour as to look almost black.

Syphilitic erythema, and sometimes a pustular eruption, may appear at the same time with the papular; all three occasionally existing together. The most frequent concomitant symptoms are—condylomata, sore throat, engorgement of the cervical glands, and iritis.

3rd. *The vesicular, bullous, and pustular eruptions.*—I have classed these forms of eruption together under one head, for they differ from one another but in degree, while they all are separated from those we have just been considering by a broad pathological distinction, the recognition of which is of much importance. This is, the fact of a fluid effusion, either of a serous or purulent character, being substituted for that of lymph; and this change we find is characteristic of the course and complications of each of these eruptions: it corresponds to the difference already insisted upon between primary chancres, according as they were the seat simply of induration, or of induration accompanied by *ulceration*.

A syphilitic vesicular eruption is rare, but it does sometimes exist, not very unfrequently appearing in the midst of an eruption of

erythema or papules. Bassereau has observed 12 cases in which this form of eruption was well marked. The seat of the vesicles is the same as that of the papules, viz., the hair-follicles; a hair will be found traversing their centre. It appears more particularly on the back, the forearms, and legs, but may also invade the face. Three varieties are described—1st. That resembling *varicella*, in which the vesicles are large and scattered, filled with a serous fluid which soon becomes purulent, the base of each vesicle being surrounded by a characteristic copper-colour areola. 2nd. That resembling *eczema*, in which the vesicles are either scattered or united in groups, smaller than the former; their contained serosity is absorbed, and then the vesicle dries up, or it becomes purulent, and forms a scab. This variety affects particularly the fine skin of the face or scrotum, and may be found in these regions when the rest of the body is covered with a papular eruption. 3rd. That resembling *herpes* presents itself, like this skin disease, either as large vesicles grouped together on an inflamed base, or as small rounded vesicles of an ephemeral character, which quickly disappear, leaving a desquamation on an inflamed and coppery-coloured skin.

In whichever of these forms the vesicles first appear, they quickly pass through the vesicular stage, and leave behind them either a papular or scaly eruption, which then remains a length of time, with, perhaps, occasional vesicular eruptions on the scrotum. This eruption is always the first: it never appears as a relapse after some other syphilide has disappeared.

Syphilitic bullæ are characterised by an elevation of the cuticle: more extended, but not so much raised as those caused by the vesicles. Under the name of syphilitic pimphigus, it has been described by M. Dubois in new-born children, to whom it is almost exclusively confined; one case occurring in an adult, a young woman, has been figured by Ricord in his *Iconographie* (Pl. xxv.) When hereditary, it appears upon the palms of the hands and soles of the feet of the infant immediately after birth, or more frequently it exists at the time of birth. The bullæ are scattered and irregular,

sometimes filled with a sero-purulent, sometimes with a sero-sanguineous fluid, surrounded by a deep-red areola. The death of the infected infants soon follows their birth.

The eruption known as *rupia* is described by some authors as commencing in the formation of bullæ, while others state it is pustular in its origin. From a careful examination of the cases detailed by the most reliable authorities, I have no doubt the peculiar ulcer, with adherent crust, called by this name, is preceded in some cases by a bulla, in others by a pustule. The uncertainty of its origin, in many cases, is not surprising, when we remember that the bullæ or pustules last only a few days, while the characteristic ulcers and scabs last often for months. Whether preceded by a bulla or pustule, a rupial eruption presents the same characteristic features—it consists of an ulcer, covered by a crust or scab, which is adherent to the edge of the ulcer beneath it, and is continually enlarged by the products of the ulceration. When this ceases, the scab becomes dry and hard; at first of a yellowish or greenish colour, it gradually becomes brown, or nearly black, and very thick, sometimes being conical, compared by Carmichael to a limpit shell. It finally falls, displaying the ulcer, which may have partially or altogether healed beneath it. A dark coppery-red stain remains, and frequently an indelible cicatrix.

There are two distinct forms of *rupia*—the superficial and the deep. The former appears in the early or second stage of syphilis which we are now considering; the latter in the subsequent stage. They differ not only in the depth and extent of the ulceration, and consequent cicatrices, but in the fact, that the superficial or early *rupia* is scattered over the body, appearing on the face and limbs as well as on the anterior surface of the chest and abdomen; while the deep, or later variety, is scattered here and there irregularly, three or four perhaps constituting the entire eruption. Carmichael* gives a drawing of a case, with characteristic conical rupial scabs on the face, in which this eruption was the first syphilitic symptom, appearing about six weeks after the formation of the chancre,

* "Observations on the Venereal Diseases," p. 88.

accompanied by severe sore throat, and in which death resulted; illustrating at once the possibility of the early occurrence of this eruption, and its very grave prognosis.

Bassereau, under the head of syphilitic ecthyma, describes the same form of eruption, restricting the name of rupia to the ulcers preceded by bullæ; there is, however, no real difference between the two. The following case, given by him, under the head of "early syphilitic ecthyma," will illustrate the superficial, or early syphilitic rupia:—*

"A young man, twenty-four years of age, admitted to the Hôpital du Midi, January, 1842, had contracted a chancre three months before his admission. An eruption of syphilitic ecthyma, which covered the skin, had declared itself six or seven weeks after infection. The chancre was phagedenic, not sensibly indurated; the inguinal glands were swollen. The pustules are disseminated over the entire skin; they were confluent upon some parts, where the larger pustules were surrounded by smaller ones. The pustules commenced by a papule of a deep-red colour, which attained the size of a lentil before the epidermis became raised by a little yellow pus; the pustules thus formed did not become conical, but burst, and left rather a deep ulceration, of which the base was hard, and of a deep-red colour. The pustules were very soon followed by brownish scabs, under which the ulceration continued to extend as far as the coppery areola. After the fall of the crusts, the ulceration cicatrised in a few days; the cicatrices were depressed, and of a dark red colour, their edges remaining for some time hard. This eruption came out on the scalp and face, and extended to the trunk and limbs; it was not developed all at once, but the pustules appeared in succession, some appearing while others were cicatrising."

Besides this *syphilitic ecthyma*, or pustular rupia, two other forms of pustular eruption occasionally appear—*syphilitic acne*, and *syphilitic impetigo*. The former is very rarely met with presenting anything of a well defined character. As its name implies, it resembles simple acne, being formed of small pustules, situated on an inflamed base, with pointed tops, containing a drop of purulent fluid, which, drying up, is converted into little crusts of a

* Op. Cit. p. 436.

yellowish or brownish colour. Syphilitic acne is not confined to the upper part of the trunk or face, as is the simple disease; it is disseminated over the surface of the skin, frequently, however, occupying the face. The eruption appears sometimes slowly, at other times more rapidly; in either case the pustules remain stationary for a considerable time before they break and form crusts. Bassereau has seen them remain fifteen days to three weeks without breaking; when the little scabs fall off, papules remain of the characteristic coppery-colour, which subsequently become scaly, as the ordinary papule does.

Syphilitic impetigo is characterised by larger pustules than the acne, of a yellow colour, and a greyish-yellow scab, resembling that of simple impetigo. This eruption is perhaps most marked when it appears on the face, as it frequently does, round the *alæ nasi*, or on the lips. "The integument beneath is superficially ulcerated, and generally vegetates above the surrounding surface, while the summits of the granulations are covered with small yellowish scabs, and the patches tend to arrange themselves in circles, or parts of circles, which are surrounded by a copper-coloured border or areola."* Syphilitic impetigo is found scattered over the entire skin, sometimes mixed with numerous papules; rarely is it entirely free from some of this eruption. It comes out in successive crops, and pursues a very chronic course.

Mr. Erasmus Wilson does not admit any pustular syphilitic eruption except *rupia*, considering that "other forms of pustules must be considered as instances of suppurating papules or tubercles,"† and contends that syphilitic impetigo should be called "pustular lichen," which may be an accurate name for the eruption; but the practical point is, to mark by the names the comparative degrees and extent of suppuration, for upon this our opinion of the case depends, and this, it seems to me, is better marked by the names already in use.

The *diagnosis* of syphilitic eruptions is sometimes difficult; it is

* Bumstead, Op. Cit. p. 565.

† "On Syphilitic Eruptions," p. 103.

at all times important for us to be able definitely to establish it, without any reference to the history of the case. The following points being kept in view, we can scarcely ever fail to form a correct opinion.

1st. *The characters of the eruption itself*, of which there are three which may be depended upon; the peculiar colour, the varied forms, and the absence of itching.

The peculiar dark-brown or coppery-colour of syphilitic eruptions when declining is most characteristic, and as one part is usually declining while others are advancing, we have generally an opportunity of observing this in every case; but we must carefully look for it over the whole body. The erythematous eruption does not present this character; and I have seen stains from simple eruptions which at first sight resembled the coppery stain of syphilis, so we must not depend altogether upon this one character, but take into account also the varied forms of the eruption. As already stated, we find erythema and papules—the latter and pustules constantly mixed together—and all the different varieties of each side by side; this is not seen in any other cutaneous eruption. The third character, that of the absence of itching, is the most characteristic of any, although there are exceptions to this too; but the general rule is fully established, and gives certainty to our diagnosis when the other symptoms are present, and awakens suspicion of itself if these have not been noticed; patients who desire to conceal the nature of their rash, when asked is it itchy, often condemn themselves, exclaiming with confidence, not at all.

2nd. *Co-existing syphilitic symptoms* will materially aid us; of these, the indurated chancre and bubo are certainly not the most to be depended upon, as they may have been badly marked, or have totally disappeared before the time of examination; they should, however, when possible, be looked for, as if present they are conclusive. The engorgement of the posterior cervical glands is present in about three-fourths of the cases of syphilitic eruption, and is very characteristic; it may, however, be produced by a

simple eruption on the scalp, but taken with other symptoms it is a valuable aid to diagnosis, particularly as we can readily examine for it, without awakening the patient's suspicions in the least.

The falling of the hair, the state of the throat, and the presence of mucous patches at the anus or corners of the mouth, are the other symptoms most usually to be found with the eruptions of the second stage.

Prognosis.—The various eruptions we have been considering merge into one another; we have papular erythema, and pustular and vesicular papules, showing that we cannot attribute each eruption to the action of a separate poison, but pointing to a common cause, the symptoms of which vary according to the constitution of the patient, and the original intensity of the disease.

The early eruptions—those now before us—afford the most reliable symptoms upon which to found an opinion of the future character of the disease, whether it will prove mild, readily yielding to treatment, and unlikely to develop the later symptoms, or the contrary. “When we would judge of the gravity of a syphilitic case, and estimate the symptoms which may yet be produced, *the first eruption (la premier syphilide)* is the sign to which we may attach the greatest value.”*

Erythema is characteristic of a mild form of the disease; it may relapse, but, unless under very exceptionable circumstances, does not produce the later symptoms; under favourable circumstances it totally disappears in the course of the year after infection.

Papular eruption, when well marked, and extensively developed over the skin, is characteristic of severe syphilis, which will certainly relapse, and may produce the later (tertiary) symptoms. Under the most favourable circumstances it poisons the patient's system for several years, as shown by the production of syphilitic children, after all outward symptoms have disappeared. Yet the papular eruption yields readily to treatment, and all the symptoms which accompany or follow it do so also, thus making it possible very much to mitigate the severity, and to curtail the duration of the late symptoms.

* Diday, “Hist. Nat.” p. 119.

Pustular eruptions, on the contrary, characterise a form of the disease which does not yield readily to treatment, all the symptoms of which are much less under our control, and which rapidly run on to the production of asthenic deposits. The pathological distinction between the papule and the pustule, viz., the production of lymph or pus, is highly characteristic of the difference observed between the two cases of syphilis which present these eruptions, the formation of pus being the sure sign of a lower vitality, a want of power in the system, which is evidenced to a less extent by the production of the vesicle, both convey information regarding the patient's constitution, and the future symptoms we may expect, of a most practical kind. That a case which would, under ordinary circumstances, have presented an erythematous or papular eruption, may, from special debilitating causes, produce pustules, admits of no doubt. Mr. Wilson relates the following :—*

“A young man, aged twenty, of delicate constitution, was in the month of January accidentally thrown into the water, and nearly drowned. His health was much weakened by the accident, and in the December following he became affected with syphilis. He had a small chancre beneath the prepuce, and bubo; the former healed without any trouble, but the latter suppurated, and kept him confined to his bed for nine weeks. Six weeks after the commencement of the chancre, an eruption of red tubercles made its appearance on his face and head. The tubercles were round, and as large as a split-pea, and after increasing in size for a few days, became filled in the summit with a bright yellow pus. Two or three days later the centre of the pustule had become brown, and was beginning to dessicate into a yellowish-brown scab.”

In other cases, the injudicious use of mercury, or great mental anxiety, are the debilitating causes; or without any of them, an originally strumous constitution predisposes to a suppurating rather than to an adhesive eruption. The appearance, therefore, of an eruption, characterised by vesicles, bullæ, or pustules, will carry with it a grave prognosis, and suggest to the surgeon the necessity for much caution in his treatment, and, as an essential part of it, the supporting and husbanding the vital powers of the patient by every means.

* “Syphilitic Eruptions,” p. 105.

The fourth set of symptoms which appear during the second stage of syphilis consist of *sore throat* and *condylomata*, which I class together, because they are both lesions of mucous membranes, or of the thin skin at the orifices of the mucous tracts. Both of them appear at an early stage of the disease; they are both very common, particularly some form of sore throat, which is almost an invariable accompaniment of the second stage.

Much the most frequent form of sore throat met with in the earlier stages of syphilis, is that known as the *snail-track*, or *aphthous* ulceration, which is characteristic, and often aids the formation of a right diagnosis. It consists in a superficial abrasion of the epithelium of the mucous membrane of the fauces, tonsils, palate, tongue, or sides of the mouth, commencing by a congestion of the mucous membrane of the part; a slight effusion of serum takes place beneath the epidermis, which, becoming detached, presents a smooth red surface, which presently becomes covered with a thin greyish exudation towards its centre; sometimes the stage of congestion does not go on to effusion and the formation of the aphthous ulceration, but usually it does so. It gives the patient little or no annoyance, so that frequently we are told there is nothing wrong with the throat; upon examination, however, the ulceration will be seen well-marked. There is another form of ulceration of the throat of a much deeper kind, occasionally seen in the early stage, but as it is much more frequently met with at a later period, it will be better described with the symptoms which usually accompany it.

The lesion known here commonly by the name of *condylomata*, is described on the Continent under the names of mucous-patch, (*plaque-muquense*) or moist-papule, (*papule-humide*) or mucous-tubercles or pustules; the latter two are objectionable, as there is nothing either tubercular or pustular about them. The most frequent seat of condylomata is round the margin of the anus, also in the vulva and on the penis; very frequently also in the mouth, on the tonsils, also on the lips, at the corners of the mouth; they are more rarely seen on the scrotum, perineum, and nates, and

occasionally, particularly in infants, upon other parts of the skin. The appearance presented by condylomata is most characteristic; it varies somewhat as they are developed upon mucous membrane, or on the thin skin of their usual site; in the latter case they appear as patches or papules, raised about a line above the surrounding integument, about the size of a sixpence, flattened on the surface, and covered with a slimy exudation, which has a strong and disgusting odour; this secretion accounts for their being more contagious than any other lesion of the second stage. Their mode of production seems to be as follows:—An exudation takes place under the fine cuticle of the part, which, being rubbed off, leaves a raw surface, upon which a pellicle of false membrane or exudation forms, and so elevates the surface, forming continually new layers below, and degenerating into the slimy discharge upon the surface. They are seldom solitary, not unfrequently they are confluent; the situation in which they are affects their appearance, so that we must not expect condylomata always to present the characters we are accustomed to see at the anus or vulva; thus at the corners of the mouth they are not so large or prominent as in these situations; when seen on the skin of the fingers they are fissured.

An indurated chancre is sometimes transformed into a mucous patch. This curious and practical fact was first noticed by Ricord, and was subsequently specially studied by MM. Deville and Devasse, who thus describe the change which takes place:—“The change extends from the circumference to the centre of the chancre, the edges of which first become red and prominent, and quickly covered with a thin epidermis, whilst the centre of the ulcer is still grey and moist. It is at the time when the red swelling arrives at the centre, and the cicatrisation of the whole seems about to be accomplished, that we see the white plastic secretion characteristic of the moist papule make its appearance. Sometimes the swelling advances so rapidly, that the cicatrisation has not commenced at the circumference before the plastic secretion is produced over the whole surface, then the moist papule is clearly distinguished as it

were grafted on an ulceration." This transformation in situ of a chancre is important, for it fully explains the statements of authors, that condylomata are sometimes primary symptoms—in fact, that the law that syphilis always begins by a chancre has an exception. Not being aware of the possibility of this transformation, and observing the mucous patch in the position of the original sore, they naturally came to this conclusion; and the statement of patients, that they never had any sore but the one then observed, is easily understood. Bassereau has pointed out that this transformation may take place after the chancre is fully cicatrised—in fact, on the old site of a chancre.

When developed on a mucous surface, as in the mouth or throat, condylomata present a remarkable appearance. The epithelial covering being broken, a white plastic secretion is produced over a small well-defined patch—"opaline-patch"—which is but slightly raised above the surface; if this is brushed off, as is frequently the case in the tonsils, a red, raw surface is left, which bleeds readily. When the opaline-patch occurs on the tongue, it is frequently fissured; it varies in size on the tongue, being sometimes very small, like a little bit of thin white paper stuck on its side or tip.

Condylomata are said to be much more frequent in women than men, but they are a very common symptom in the latter also; they accompany the erythematous and papular eruptions most frequently. They are seldom found as the only symptom; when they are so, the case is a mild one. Their natural course and duration is essentially chronic. If not removed by treatment, they may remain six months, or even a year; and when removed, they have a constant tendency to recur in the same place again, continually reappearing, without any relapse of other symptoms. They are frequently accompanied by great irritation and soreness, and always distress and annoy the patient by their secretion and smell. Patients usually consider them when appearing about the anus, to be piles, and mention them under this name to us; an examination being made, the true state of the case becomes at

once apparent. They are happily very readily relieved by local treatment.*

The remaining symptoms which appear during the second stage, viz., *iritis and retinitis*, are rather occasional complications, than usual or regular phenomena of the disease. The surgeon, however, fully alive to the possibility of the occurrence of inflammation of the deep tissues of the eye, will be on the watch for the earliest symptoms, as vision may be lost by delay. As pointed out by Carmichael, iritis most frequently occurs during the course of the papular eruption; the same pathological tendency in both, viz., the free effusion of syphilitic lymph, explains their connection; the state of constitution and the severity of the disease which produces a full papular eruption, will tend to produce also adhesive inflammation of the eye; prophylactic measures should therefore be adopted in all such cases to guard against the exciting causes of iritis. It comes on during the earlier and most acute stages of the eruption—in fact, during the first outburst of the symptoms, and consists in an acute inflammation of the deep structures of the eye; the effects of this upon the iris being readily recognised, it is called iritis, but probably the inflammatory action is never confined to this part alone.

The first symptom is usually the sensation the patient feels of weight and pain about the orbit; upon examination, a pink zone of vessels will be observed round the cornea, and if the lid be raised, a number of vessels running over the sclerotic to the cornea will be seen, enlarged and congested. At this time there may be no other symptom, but very soon the first characteristic sign will present itself, viz., a change of colour of the iris—the blue iris will appear green, and the brown, yellowish; but before this is apparent, a loss of the natural brilliancy of the surface of the iris will inform us of the commencing inflammatory action. The two eyes should be at once compared, when the change will be apparent. This change of colour is said to depend upon the presence of yellow albumen in the aqueous humour, and in some cases when

* See chap. ix.

the disease had become chronic, this has been shown to be the fact, by drawing off the aqueous humour, when the iris would immediately present its natural colour again. Coinciding with the change of colour, there is an equally remarkable loss of the function of the iris; it is very sluggish, if not immovable, under the stimulus of light, but there is little or no intolerance of light, thus differing from rheumatic iritis. The cornea sometimes remains quite clear; in other cases it is marked in its lower half by numerous little dots, giving it a cloudy appearance. In twenty-four hours after the first change of colour is observed, lymph is deposited in the iris, and round the margin of the pupil, and will be seen with a magnifying glass standing out like small reddish beads, or sometimes forming a thin film over the pupillary margin; if unchecked by treatment, this effusion rapidly increases, and may entirely block up the pupil, and form adhesions to the anterior surface of the capsule of the lens, thus permanently obstructing or seriously interfering with vision. The character of the lymph is peculiar; it is of a tawny or reddish-yellow colour: if not entirely confined to syphilitic iritis, this is certainly characteristic of it. Iritis not unfrequently attacks both eyes, passing to the second when the disease is declining in the first. It may appear in a later stage of the disease, when it is of a more chronic character, and is frequently a relapse from a former attack.

The diagnosis of iritis is always easy. The surgeon in every case, when the first outburst of syphilitic symptoms is severe, should carefully examine daily for its earliest symptoms. Its occurrence must be always esteemed a most unfortunate one, as it not only threatens the patient with loss of vision, but even when this is preserved intact, he suffers severely; for this acute inflammation, from its seat, demands very rapid and decisive treatment, which, far from aiding the removal of the other symptoms, seriously interferes with the comparatively slow process by which they are removed, and debilitating the patient, leaves him more open to the attack of later symptoms.

That the retina is often involved in the inflammation, becomes

evident, from the fact that we find the loss of vision much greater than the damage done to the iris will account for, and the ophthalmoscope has demonstrated the truth of this suspicion, when after all acute symptoms have disappeared, it becomes possible to use this instrument; the vitreous humour has been found cloudy; filaments and shreds are seen floating freely in every direction; the entrance of the optic nerve appears enlarged, irregular in its outline, and of a homogeneous white colour; large irregular white patches are seen scattered over the retina; in fact, lymph in various forms is seen to have been shed on the surface of the retina and round the optic nerve. We may conclude that syphilitic iritis means very generally syphilitic inflammation of the deep structure of the eye-ball.*

All the symptoms now described may have appeared and disappeared, and yet the second stage of the disease continues still. Relapses continue to recur during several months, particularly of the eruption, sore throat, and condylomata. If the first eruption has been erythematous, the second will be papular; and when the first has been papular, the second is papular also as a general rule. Condylomata will totally disappear under treatment, and within a few weeks appear again, so will the sore throat; iritis, too, relapses during this period, or even may appear for the first time with a second papular eruption. This recurrence of secondary symptoms may continue for several months, before any symptom indicative that the disease has entered on its third stage has made its appearance.

All the symptoms of the second stage are such as the other exanthemata might produce during their course, and point to a poison freely circulating throughout the system in the blood. When this stage is drawing to a close this changes; syphilis begins to show itself in producing disease of special tissues and individual organs; and thus while it becomes more local in its effects, becomes at the same time more deeply incorporated into the system.

* For Treatment, see chap. ix.

CHAPTER VII.

THE THIRD STAGE OF SYPHILIS, OR STAGE OF DEPOSIT.

THE symptoms described in the last chapter last a variable time, depending partly upon the mildness or severity of the case, and partly upon the treatment adopted. After the lapse of a period varying from a few weeks to five or six months, the vigour of the disease seems exhausted, and the symptoms cease to be reproduced. A complete absence of all signs of the existence of the poison may then be obtained for a time, but more generally some lingering symptoms remain to mark its continued residence in the system, such as a continually recurring ulceration of the throat or of the edge of the tongue, where, perhaps, a sharp tooth touches it, or the return of condylomata about the anus, or a few persistent dark blotches on the skin. These, often ignored by the patient, remind us that "a truce only, not a lasting peace, has been obtained." The length of this truce, unlike the period of incubation which separates the primary from the secondary symptoms, cannot be stated with any approach to accuracy, for it varies within such limits as to make it indefinite. In the majority of cases, however, a year from the time of infection will not pass without some new symptom showing itself, which will mark the commencement of the last, or third stage. These symptoms are not produced in all cases, even when the disease is allowed to run its own course, uninfluenced by treatment, mild cases often terminating with the second stage; and when produced, they vary very much in intensity and character in different cases. They offer, however, at all times a marked contrast in many important points to those of the second stage, which,

before classifying the symptoms of the tertiary period into separate groups, it is well carefully to note—1st. The secondary symptoms form a distinct stage; they appear at a certain interval after the primary sore, and they disappear after the lapse of a certain time. The tertiary, on the other hand, appear at an uncertain time after the secondary symptoms, sometimes closely following them, sometimes not appearing for years after; and again, they show no period of decline—particular symptoms disappear, but the stage is never passed, for other, perhaps more formidable, ones take their place. 2nd. Secondary symptoms are symmetrical: whatever form the eruption may take, it appears all over the skin—pointing to a free blood-poison. The tertiary, on the other hand, are not symmetrical; they occupy this or that region only—pointing to the combination of the vitiated blood with the tissues. 3rd. Secondary symptoms, when they disappear, leave no mark behind them: the tertiary invariably do; the great pathological character of this stage-being, the deposit in the tissues of a syphilitic lymph, the presence of which is subsequently marked by a cicatrix more or less distinct. 4th. The spontaneous cure of syphilis when still in the second stage may be looked for; but, arrived at the tertiary period, such a tendency is by no means so evident, the presumption being, that the symptoms which mark the earlier period of this stage will be replaced by others, which will continue indefinitely.

Such are the broad distinctive marks between the earlier and later constitutional symptoms; the special character of the later being, the deposit of syphilitic lymph which takes place into the substance of the affected tissue or organ, no part of the body being free from such invasion. As already stated, a subdivision of the long array of these symptoms, founded upon the time when they appear, is impossible, inasmuch as they observe no constant order, or approach to order; but a pathological distinction exists in the character of the deposit, which may suitably form the basis of a subdivision, especially as this difference is found to mark a corresponding change in the general state of the patient, and will be found to indicate the necessity of a different line of treatment.

Hence the symptoms of the third stage will now be considered under the two following classes:—

1st. Those characterized by the deposit of hard contractile lymph, which are usually the earliest to appear, and may, in contradistinction to the second, be called sthenic.

2nd. Those characterized by the deposit of a soft, gummy material, which usually are later in their appearance, and may be termed asthenic.

The symptoms included under the first of these divisions may be classed as follow:—

1st. Deposits in the skin, forming cutaneous eruptions.

2nd. Deposits in the mucous membranes, giving rise to ulceration and contraction of the pharynx, larynx, bronchia, intestinal tract, &c.

3rd. Deposits in glands and other viscera, such as the testicles, liver, spleen, lungs, &c.

4th. Deposits in the nervous system, *i. e.* brain, spinal cord, and nerves.

These will now be considered in the order given, which is not unfrequently that in which they appear.

1st. A *cutaneous eruption* is generally the earliest symptom which marks the third stage; it not unfrequently consists of a papular eruption, such as is common in the second stage, but which, when it appears as a tertiary symptom, is more local and patchy in its appearance than the copious secondary papular already described. Two kinds of eruption, however, are characteristic of this stage, as they do not appear during the earlier period: they are—1st, the tubercular; 2nd, the scaly.

Tubercular cutaneous eruption.—When a patient presents himself with a tubercular eruption, we may conclude that the syphilitic poison has been in his system at least six months; two years is not uncommon; it may be many years have elapsed since infection. Sometimes the tubercular eruption appears after some accident or some debilitating cause, which seems to rouse the dormant disease. The eruption is not general over the body; it is confined to one or

two regions, differing markedly in this respect from the early eruptions. Beginning in one region, it slowly advances to others, and thus in time occupies sometimes a great part of the skin, but it never appears simultaneously in all parts; the face and the shoulders and sides of the trunk are its most frequent seats. Bassereau found the eruption on the face or trunk in 48 cases out of 70 which he observed; in more than half of them it occupied only one region. The outside of one arm or leg is not unfrequently affected.

The eruption consists of a number of little solid tumours in the skin, differing from papules only in their size and prominence—of a dusky-red colour, and with a deep firm base; the cuticle covering them is dry, coppery-coloured, and usually desquamates; they appear to be developed in the hair-follicles, into which the morbid effusion which forms the tubercle seems to be poured; they vary in size from that of a grain of shot to a fourpenny-piece, and are generally arranged in circles, which gradually enlarge, leaving the skin in the centre of a dark coppery-colour, generally desquamating; the tubercles at the inner edge of the circle are declining while others are forming on the outside; thus the circle increases in size. Frequently scattered, isolated tubercles will be seen which do not belong to any group, and groups also will occasionally be noticed which do not present the circular arrangement, the whole patch of skin being occupied by the tubercles. This description applies to one kind only of tubercles, viz., *the dry variety*, named so in contradistinction to the other variety—*the ulcerating*. This latter may succeed to the former, which, after remaining stationary for a length of time, may suddenly commence to ulcerate, but is more frequently found commencing without any previous eruption of dry tubercles, the tubercles showing at once a tendency to ulcerate; the skin becomes adherent over them first, and then ulceration takes place. The ulcerating tubercles do not usually appear so early as the dry; their appearance marks a further stage, either in the age of the disease or the diminished vitality of the patient; but not unfrequently the two forms exist at the same time, some spots of ulcerating

tubercles appearing while the eruption of dry tubercles still continues.

The ulcerating like the dry tubercles are developed in scattered groups, which are usually circular; they spread over the affected region—it may be the face or the shoulders—the ulcers becoming confluent, and then extending to a considerable size. The appearance presented by ulcerating syphilitic tubercles varies very much: sometimes the ulceration is but superficial, sometimes it is deep—part of it covered with a scab, part open, and secreting a dark-coloured pus. It is, as has been stated, frequently disposed in circles, and this gives the patch its most characteristic feature—the centre occupied by a thin, coppery cicatrix, the edge thick and irregular, surrounded with ulcers varying in size and depth, with an advancing edge on the outside, covered with thick crusts, or, when these have fallen, showing a thick, dark edge, and a sloughy surface. It is this which has been described by different authors under the names of syphilitic ulcers, syphilitic lupus, and *syphilide-crustacea* of Alibert; this latter name having been given to the patch of ulceration when altogether covered with thick scabs.

Both the dry and ulcerating kinds of syphilitic tubercles are always slow in their advance, and remain a very long time. Sometimes, when commencing in the ulcerated form, the eruption is accompanied with considerable heat, pain, and swelling, particularly when coming out on the face; I have seen it also on the leg, causing constant pain of a burning character.

Whether the career of syphilitic tubercles is arrested by treatment or at length terminates of itself, both varieties leave behind them indelible marks of their existence. The dry tubercles when disappearing leave a depression of the skin, marking where the tubercle has been; this is at first of a dark coppery colour, but after a time gradually becomes white, resembling finally a small depressed cicatrix.

When ulceration has taken place, the cicatrization is more remarkable, but varies greatly in degree—from the thin, shining cicatrix, which succeeds the superficial ulceration, to the deep,

thick, white, depressed cicatrices which remain after deep tubercles. These latter are sufficiently characteristic to suggest at once their true origin; but the more extended, or superficial kind, may be mistaken for that produced by other forms of ulceration. If, however, we examine them attentively, we will find in the syphilitic cicatrix a number of small, white, depressed lines, extending into the general cicatrix, and recognised by their greater whiteness and depression. These are produced by the several scattered tubercles of which the white patch was composed, and form a characteristic feature of the cicatrix.

Prognosis.—The appearance of either form of tubercular eruption tells of a severe and inveterate syphilis—the ulcerated form is more serious than the dry, not only on account of the hideous cicatrices which will remain, but that it is accompanied by a more cachectic state, and is more certainly followed by syphilitic sequelæ.

Diagnosis.—Ulcerating syphilitic tubercles are likely to be confounded with several other species of ulceration.

When situated on the upper part of the thigh or groin, or on the abdomen, they have been mistaken for serpiginous chancre—a form of disease purely local, and yielding only to energetic local treatment, quite out of place in the syphilitic ulceration. A careful examination will reveal the true state of the case. The serpiginous chancre has a copious purulent secretion, and little, if any, crust is found upon the ulceration; it spreads by one edge, healing at the other, but not in the form of a circle; it is inoculable upon the patient himself; and, finally, there are no concomitant syphilitic symptoms.

Lupoid ulceration is the form of disease with which ulcerating tubercles are most frequently confounded. The form, colour, and progress of the lupoid ulcer is different; it leaves a cicatrix thin and violet-coloured, and the age of the patient is usually different: when an adult or elderly person presents a patch of ulceration resembling lupus upon the shoulders or extremities, its syphilitic origin may be suspected, and a careful examination made for other pre-existing or present symptoms of the poison.

Rodent ulceration of the face, or cancerous ulceration, may be mistaken for ulcerating tubercles; or more frequently ulcerating syphilitic tubercles are supposed to be either of these diseases; the distinctive character of each form of ulcer being kept in view, a careful examination will, in almost all cases, enable us to decide upon the true nature of the case.

The dry tubercles may be mistaken for *acne-indurata*: the circular form, coppery-colour, and the absence of any pustules amongst the syphilitic tubercles, will decide this.

A scaly eruption.—It is very common to see erythema, papules, and even pustules, ending in desquamation of the cuticle, and so appearing scaly; but this is only the natural decline of these eruptions. When the eruption is scaly from its commencement, it appears as a late symptom, like the tubercular. It then always assumes the form known as *psoriasis*, characterized by white, shining, dry scales, resting on a dark coppery-coloured skin—sometimes arranged in small rounded patches, sometimes in circles or in large irregular patches. Limited to those cases which are primarily scaly, this is a rare form of eruption. It may appear upon any part of the skin, but is most frequently noticed upon the palms of the hands and soles of the feet; but we will upon examination often find, that here it succeeds to papules which have existed previously.

The circles or patches of syphilitic *psoriasis* are said to differ from those of the ordinary skin disease of that name by the following characters:—

1st. The scales rest upon a coppery-red base.

2nd. The patches or circles have their edges more raised than the centre.

3rd. After the disappearance of the scales there remains superficial cicatrices.

4th. Other syphilitic eruptions often accompany the syphilitic *psoriasis*.

Of these, the points most depended upon in making our diagnosis will be, the elevation of the edges above the centre, which is the opposite of what occurs in the non-syphilitic disease; and the

cicatrix which remains—which, although superficial, is sufficiently distinct, and is not found in simple psoriasis.

Accompanying either of these eruptions, a relapse of iritis or retinitis may occur, if the eye has been engaged in the previous stage. The disease runs now a less acute course than the first attack; but it is not the less destructive on that account, as it is not so amenable to treatment; the active means which are suitable for the acute form, being now quite out of place.

2nd. *Deposits in mucous membranes.*—We may begin with the mouth and throat, which are affected more frequently than any other part of the mucous tract. The *tongue* we find affected in three different ways.

1st. There is the *white patch*, or “*milky stain*,”* which consists of a white spot about the size usually of a fourpenny or sixpenny-piece, situated upon the tip or side of the organ; it is quite smooth and free from any ulceration; it results apparently from an opacity of the epithelium of the part, beneath which a layer of syphilitic lymph has been deposited; the epithelium after a time peels off, and the opacity with it, leaving a smooth shining spot in its place. When well marked, it looks not unlike a little bit of white paper stuck upon the tongue. It is very characteristic, not only of syphilitic infection of the system, but of the particular period we are now considering, being only seen, as far as I am aware, in the early period of the third stage.

2nd. We meet with *ulcers* which usually occupy the edge and base of the tongue; frequently they are surrounded with an inflamed areola, have a sharply-defined edge, and a sloughy surface, and are then accompanied with considerable annoyance, every movement of the organ being painful. At other times they are more superficial and less inflamed, but still give the patient distress when the tongue is protruded or moved about in the mouth. Grasped between the fingers, this ulcer is found to be situated on an induration, resembling the ulcerating tubercle of the skin, and like it seems to mark a somewhat more advanced disease than the dry deposit.

* Erasmus Wilson “On Syphilis,” p. 136.

3rd. We meet with *an indurated condition* of the tongue, which is characteristic of a still later period, but may be properly described here, inasmuch as its pathology seems to be the deposit of syphilitic lymph in the substance of the tongue, and consequent contraction of the organ. The appearance of the tongue is very remarkable; the dorsum is puckered and fissured, both longitudinally and transversely, and to the finger feels hard and rugged; there is no ulceration, but the naturally soft and pliable state of the organ is lost, and it can with difficulty be protruded more than half an inch or so from the mouth; the tip is generally free, the greatest amount of induration and contraction being near the root of the tongue. This condition is very slowly produced, without any ulceration, or the discharge of any slough, seemingly from the slow contraction of the syphilitic lymph which had been laid down between the fibres of the muscular structure of the organ.

The *pharynx, tonsils, and palate*, are very constantly the seat of syphilitic inflammation during the early part of the third stage. The different forms of ulceration in this region, which have been described by Babington and other authors, may be all classed under two heads:—

1st. The excavated or Hunterian ulcer of the tonsils, which frequently accompanies a tubercular eruption of the skin. At its commencement this sore throat causes but little pain; the attention of the patient is not attracted to it until a very distinct ulceration has taken place, which occupies one or both tonsils. The edges of the ulcer are abrupt; its surface is covered with a greyish exudation; it seems to penetrate deeply into the substance of the tonsils. There is not much swelling of the surrounding parts, nor does it produce much suffering or constitutional disturbance; it is very slow in its progress, and when it does heal, leaves behind it an indelible cicatrix.

2nd. The sloughing or phagedenic sore throat, which is found in company with rupia, or ulcerating tubercles, and with great general cachexia. This commences by a small but sloughy-looking ulceration, which rapidly extends across the back of the pharynx,

the arches of the palate, and tonsils; the entire of which surface presents upon examination an appearance very much like that of a phagedenic sore; the mucous membrane around is swollen and inflamed; deglutition becomes greatly impeded, sometimes almost impossible; fluids regurgitate through the nose, and the patient's condition is wretched indeed. The presence of this slough provokes a constant cough, and a copious flow of saliva from the mouth, with an abundant expectoration. The patient's countenance expresses distress and debility; and a rapid emaciation, accompanied with loss of sleep, and night perspirations reduce him in appearance to one in advanced phthisis. The pathology of this formidable complication shows it to belong to the second or asthenic division of the tertiary symptoms, but it is more conveniently introduced here when considering the other forms of sore throat. It seems to be produced by the sloughing of a lowly organised lymph, laid down in the sub-mucous tissue. The uvula and arches of the palate are sometimes destroyed, and a perforation is sometimes made in the soft palate, by which the cavities of the nose and mouth are thrown into one, and exfoliation of portions of the turbinated bones of the nose may be expected; adhesions may subsequently form between the velum and sides or back of the pharynx. A man, lately under my care in the Adelaide Hospital, presented a remarkable condition of the throat, resulting from such adhesions. A tent-like fold extended from the palate backwards across the upper part of the pharynx, completely intercepting the passage of the posterior nares; in the centre of this a hole, just large enough to admit the top of the finger, existed; this was the only communication between the mouth and nose. All parts of the mucous membrane which have been affected present subsequently a white shining cicatrix, which adheres to the parts beneath; the mucous-follicles seem in a great degree destroyed, as the throat is always dry, the natural mucous lining being replaced by a dry, rigid, cicatriciel tissue.

The mucous membrane of the *larynx* and *trachea* is sometimes the seat of syphilitic deposit, which produces great thickening, and

sometimes considerable contraction of the tube, besides resulting in loss of voice, from the vocal chords being rendered rigid, or subsequently ulcerated by the extension of the morbid process to them. The mucous membrane lining the larynx seems to be affected sometimes in the secondary stage in a more superficial and transient manner. Diday relates instances of public singers who were unable to raise the higher notes in singing, but there was no other sign of any disease existing in the larynx; there was no cough, and the ordinary conversational tone was perfectly clear, but the compass of the voice, as seen in public speaking or singing, was greatly curtailed. The pathology of the more serious or tertiary disease is illustrated by the following:—

“A patient, forty-six years of age, was admitted for bronchitis and disease of the liver. The difficulty of breathing was very great, indicative of more than usual mischief in the larger air-passages. Post-mortem examination.—The trachea was found most extensively diseased. The whole of the tube, from just below its commencement, was ulcerated; the interior presented a raised, flocculent, rugged surface, and the same condition extended into the larger divisions of the bronchia. On removing the tube, it was seen that its whole thickness was involved, and infiltrated with adventitious matter. On the anterior surface, between it and the aorta, there was a tough, fibrinous exudation closely adherent to the rings; amongst this was some softer, yellow material, which was the same substance undergoing degeneration. It appeared thus as if chronic inflammatory disease had involved all the walls of the trachea, resulting in the deposition of this tough, adventitious material on the external surface, and ending by ulceration within. A very careful examination failed to discover any products resembling cancer or tubercle. In the middle lobe of the right lung there was a mass of consolidated hepatized tissue; liver, cirrhotic and nodular.”*

Laryngeal symptoms not unfrequently come on during the existence of a tubercular eruption on the skin, and Cusco† has described an eruption on the mucous membrane of the glottis closely resembling that of the skin, to which he gives the name of

* “Guy’s Hospital Reports,” vol. ix. p. 30.

† Lancereaux, Op. Cit., p. 406.

“papulo-tuberculeuse.” It consists of prominent greyish tubercles, about the size of a hemp-seed, occupying the surface of the true vocal chords, and accompanied by swelling of the false or upper chords, and vascularity of the mucous membrane of the glottis. Turck has described an ulceration which occurs at this same period, consisting of numerous small ulcers around the base of the epiglottis, which have a tendency to increase in depth, and even perforate the epiglottis; the mucous membrane around is swollen and inflamed-looking.

The mucous membrane of the *œsophagus* may suffer subsequently to or at the same time with that of the pharynx, and from the consequent contraction which follows, a syphilitic stricture of the *œsophagus* may be produced. Wilks* gives a drawing of a preparation in the Museum of Guy’s Hospital, where a stricture formed in this manner existed at the upper end of the *œsophagus* where the pharynx joins it. Virchow relates a similar case; and West,† of Birmingham, gives the following description of the post-mortem appearance in the case of a patient who had syphilis for some years, and whose throat was extensively ulcerated:—

“The upper portion of the *œsophagus*, for about four inches, was much dilated; its mucous membrane thickened, and marked by spots having the appearance of recent cicatrices. At this distance from the upper end it was suddenly constricted, and terminated in a narrow canal, which would barely admit a No. 4 catheter. This constricted portion, which was about two inches and a half in length, was formed by thickening of the mucous membrane, and by fibrous deposits in the form of bands and bridles, having very much the appearance of an old stricture of the urethra. Below this track, the *œsophagus* continued perfectly healthy to its termination in the stomach.”

As the other organs in this case showed undoubted signs of syphilis, there can be no doubt that the stricture of the *œsophagus* was due to syphilis also, and the possibility of such an occurrence may be considered proved.

* “Guy’s Hospital Reports,” vol. ix, p. 41.

† *Dublin Quarterly Journal*, February, 1860.

The *stomach* seems rarely if ever the seat of syphilitic disease ; the cases which have been reported as examples of syphilitic thickening and ulceration are open to suspicion of being non-specific disease, occurring in a patient whose antecedents were syphilitic, for they were not of a sufficiently decided character to suggest a syphilitic origin of themselves.

The mucous membrane of the intestinal tract is undoubtedly sometimes the seat of syphilitic ulceration and subsequent contraction. Several years ago, M. Cullerier called attention to the subject of syphilitic enteritis, which he considered was produced by deposits in the sub-mucous tissue, which did not go on to ulceration, but produced obstinate diarrhœa. He had observed it most frequently in children, but sometimes in adults also. More recently, Mr. Paget* has described a syphilitic ulceration of the large intestine, and recounted the post-mortem appearances found in a case of long-continued syphilis, which had died under his observation. He says :—

“ On the mucous membrane of all parts of the colon there are ulcers of regular, round, or oval shape, from one-sixth to about two-thirds of an inch in diameter, with clear, sharp-cut, scarcely-thickened edges, surrounded by healthy or only too vascular mucous membrane. Their bases are for the most part level, flat, or with low granulations, resting on sub-mucous tissue, nowhere penetrating to the muscular coat, with no marked subjacent thickening or hardening. On some of them are ramifying blood-vessels ; on some few there is, at the centre of the base, a small island of mucous membrane, giving to the ulcer an evident likeness to the annular syphilitic ulcers of the skin.”

These ulcers, he explains, differ very distinctly from tuberculous ulceration. In the first place, they decrease in size and number from the rectum upwards, and are limited to the large intestine. And again : there is not a trace of tubercular deposit anywhere, either in a Peyer's patch, or on the base or edge of the ulcer ; and finally, their shape is different from that of any tuberculous ulceration ; they are regular, with sharp, even, well-defined edges, with

* “ Biennial Retrospect, Syd. Soc.” 1865-66.

level bases; they are not excavating, nor are their edges ever eroded or undermined. Mr. Paget considers that "there is no other form of intestinal ulcer to which they bear even a remote resemblance." In the same case, an obstinate *stricture of the rectum* existed, accompanied with growths about the anus, compared by Mr. Paget to cock'scombs. Dr. Wilks and M. Gosselin* record similar cases. The former says:—"The only cases I can positively connect with syphilis are those instances of ulceration of the rectum where the disease has extended inwards from the external parts. These cases have more especially occurred in women, where an extensive ulceration of the genital organs has occurred, so as to involve the surrounding parts, and finally the rectum." M. Gosselin relates twelve cases, in nearly all of which hypertrophied and prominent folds of skin surrounded the anus, and a stricture of the rectum existed about two inches from the orifice. He describes it as formed of an indurated and inextensible adventitious deposit in the substance of the mucous membrane and in the sub-mucous tissue; above this, extensive ulceration, such as described by Paget, existed: from this a very copious purulent secretion was constantly discharged; habitual diarrhoea, and this continual discharge of pus, being the prominent symptoms during life, constipation or difficult defecation being rarely present. A few similar cases are recorded by Nelaton, Holmes Coote, and other authors. On the whole, it seems probable that syphilitic stricture of the rectum is rather a complication than a direct symptom of the disease, being produced either by an extension inwards of long-continued ulceration about the anus, or by pressure on the rectum, produced by inflammatory exudation into the surrounding cellular tissue; the connective tissue being the seat of the disease, the lymph deposited in which unites, and presses upon all the pelvic organs. This view is supported by Gosselin, Bärensprung, and Lancereaux.

Syphilitic deposit in glandular organs.—The *testicle* may first claim our attention, as, on account of the external position of this

* "Archives Gen. de Med.," Dec. 1854.

gland, the changes which it undergoes from syphilitic disease have long been recognised and described; the study of the morbid changes here presented will serve also as a guide to the right understanding of those which take place in internal organs, which, during life, are not so easily recognised.

Two forms of disease occur in the testicle—1st. *Interstitial orchitis*, characterized by the effusion of lymph throughout the organ. 2nd. *Circumscribed or gummy orchitis*, characterized by the deposit of isolated masses of a softer material both in the epididymis and body of the gland. Thus syphilitic orchitis comes under both subdivisions of the tertiary stage; and it is a matter of much practical importance to recognise to which division any particular case which we are called upon to treat belongs.

1st. *The early or interstitial form.*—The deposit which is laid down in the testicle in these cases consists, as proved by Sir B. Brodie,* Virchow, and others, of a fibrinous material, differing in no respect to the unaided sight from ordinary inflammatory lymph, which it resembles also in its contractile tendency, and its becoming so hard after the lapse of some time as to be cut with difficulty. Examined by the microscope, it is found to consist of fine nucleated fibres, with fat globules interspersed, as if the tissue was undergoing a fatty degeneration; which tendency appears to be much greater in some cases than in others. This fibrinous material is laid down in the fine areolar tissue which connects the tubules of the gland to the firm fibrous septa which divide it into divisions, and which pass from the tunica-albuginea to the central fibrous mediastinum. It thus surrounds the tubules, which must be pressed upon by its subsequent contraction; and thus the atrophy of the gland, which not unfrequently follows, may be accounted for.

This deposit begins and advances insidiously, the patient's attention being attracted neither by pain or heat; a sense of weight is the first symptom he feels, when the testicle will be found considerably enlarged and hard. The enlargement is confined to the body of the organ, which sometimes is nodulated, apparently from the

* *Medical Gazette*, vol. xiii. p. 379.

irregular deposit of lymph ; at other times it is quite smooth ; it is always heavy and firm—not very tender ; it may attain the dimensions of a good-sized pear before its growth ceases. Sometimes it is accompanied by effusion into the tunica-vaginalis, which will, of course, obscure the symptoms. Both glands are very frequently attacked simultaneously, or one may follow the other.

The natural course of the disease, if unchecked by treatment, is to produce atrophy of the gland structure, for the fibrinous material which is shed round the tubules must, when it has become organized, contract, and will then compress and cause the obliteration, and finally the absorption, of this, the secreting portion of the organ.

The diagnosis of this, from other forms of disease of the testicle, is most important, for a mistaken view of the nature of the enlargement may lead to removal of the gland by operation, which is entirely and always unnecessary.

Gonorrhœal orchitis, when acute, can scarcely be mistaken for it, but, when sub-acute or chronic, might. The difference between the part of the testicle which is chiefly engaged in each will aid the diagnosis ; the epididymis being the part originally and principally affected in gonorrhœal inflammation.

Malignant disease of the testicle is of the soft or encephaloid kind ; its softness, its rapid growth, its size, and the pain that accompanies it, is sufficient to distinguish it from the dull, heavy, hard, smooth, painless swelling of syphilitic orchitis.

Simple chronic inflammation of the testes is probably, as stated by Nelaton, a very rare disease, although Mr. Curling, with most English authors, considers it common. I know of no means of diagnosis from syphilitic orchitis, except the presence or absence of other symptoms of the syphilitic poison. However, as the treatment recommended by those who believe in its frequent occurrence differs in no respect from that which is the best calculated to remove the syphilitic disease, the differential diagnosis is of little importance.

2nd. *The circumscribed, or gummy orchitis*, was described, by

Mr. Hamilton of this city, many years ago, as tubercular syphilitic sarcocele, and its existence is now fully recognized. It consists in a deposit both in the epididymis and body of the testicle, of isolated rounded masses of a substance of a rather firm consistence, of a greyish-yellow colour, which are surrounded at first with a vascular zone, and afterwards are found contained in a sort of fibrous capsule. When cut into, they are found to be soft in the centre, but not fluid, very little liquid escaping even by firm pressure. Examined under the microscope, this substance is found to differ in appearance from ordinary lymph, in much of the fibrous structure being replaced by cells and fat globules, amongst which crystals of margarine are to be seen.* This second or later form of orchitis differs from the first, not only in the character of the deposit itself, and its circumscribed form, but also in its progress and tendency. The tendency of the first is to contraction, and consequent atrophy; that of the second to sloughing, and consequent lipoma. This does not always take place, for very generally the deposit is absorbed under the influence of remedies either partially or altogether; but its natural termination, if unchecked, appears to be this. And lipoma certainly does occur, as a result of this disease, but very unfrequently.

The symptom by which the second form of syphilitic orchitis may be distinguished from the first is, the peculiar feel given to the hand, upon careful examination, which is that of an uneven, nodulated mass; sometimes appearing, as it were, scattered over with little inequalities, which feel elastic, but not fluid. This, taken into account with the peculiarly slow and insidious origin of the later kind, with its absence of pain, or even of uneasiness, will be sufficient to guide us to a correct opinion, which, on account of the treatment most suitable for each variety being different, is very important. Tubercular or strumous disease of the testicle might be mistaken for the circumscribed syphilitic form, which, indeed, in some respects, it closely resembles; but the real tubercular disease is softer than the syphilitic, with a much greater tendency to inflame

* "Lancereaux," p. 271.

and suppurate. This, with the absence or presence of other syphilitic symptoms, will lead us to a correct conclusion.

The fact, that internal glandular organs were, equally with the testicle, affected with syphilitic deposits, was, until a recent period, rather suspected than proved. The progress of pathological anatomy has, however, now fully demonstrated not only the possibility but the frequency of such disease. And, from the character of the morbid changes which take place, there is every reason to believe that deposit in the internal organs are not late sequelæ, which occasionally complicate syphilis, as they have been supposed by some to be, but occur usually during the earlier part of the tertiary stage, although their presence may not have been discovered until a very much later period. It cannot, indeed, be matter for surprise, that these pathological changes have not hitherto been recognised, except as occasional complications, for it is but seldom that death occurs until a very late period, and it has been only by post-mortem examination that their existence has been, until recently, recognised at all.

The *liver* is, perhaps more frequently than any other internal organ, the seat of syphilitic disease. Two centuries ago, jaundice was noticed as occurring in connection with syphilis, but it is only within the last few years that we possess accurate information as to the pathological character of syphilitic disease of the liver. Syphilitic lymph is found deposited in the liver in two ways—1st. *diffused*, that is, shed upon the surface and through the areolar tissue, forming the capsule of Glisson. This is the *interstitial syphilitic hepatitis*, or *syphilitic cirrhosis*, of different authors; it is comparatively rare, but no doubt of its syphilitic origin, in many cases, can be entertained. The appearances presented by a liver thus affected are as follow:—The surface is furrowed by depressions or grooves, caused by the contraction of the fibro-plastic material which has been effused; these furrows, extending in different directions, give a puckered look to the surface, which, between the furrows, is forced out into rounded lobules; not unfrequently adhesions exist between the diaphragm and upper surface of the organ. When a section is made, we see the fibrous bands extending from the furrows on the surface into the

substance of the organ, enclosing between them islands of healthy gland tissue, thus giving a lobulated appearance to the liver. This form of syphilitic disease of the liver has many features in common with alcoholic cirrhosis, from which it differs, however, in appearance very much; for in cirrhosis from whiskey the whole gland is small, hard, and contracted, the surface presenting the characteristic hob-nailed appearance, being formed of numerous small prominences of equal size, the contracting lymph being apparently shed equally through the capsule of the organ. In syphilitic cirrhosis there is irregular contraction, and consequently large lobules projecting between deep furrows. The following is given by Lancereaux* as an example of this form of the disease:—

“The patient, a widow, forty-seven years of age, died of pneumonia in La Pitié, in April, 1861. The liver adhered to the diaphragm throughout the greater part of its extent; it was difficult to detach it, the adhesions being so strong and old. Drawn down into the abdomen, the hepatic gland is seen to present a remarkably irregular surface; being traversed by numerous deep furrows, which divided it into a great number of lobules, and gave it the appearance which the kidneys of young animals present. The furrows, which were from one to two centimetres in depth, occupied both surfaces of the right lobe, being specially marked on the concave surface; the left lobe was diminished in volume, and deeply marked by furrows; the form of the whole organ was greatly changed, so as to render it difficult to distinguish its different parts. The edges, as well as the faces, presented very deep fissures, which were filled with fibrous tissue. The vessels of the liver were free. A section of the organ showed fibrous bands of considerable thickness, which, surrounding several of the lobules, had caused their atrophy, by their contraction, giving a very peculiar aspect to the liver. Some of the hepatic cells were atrophied and granular, while others presented their natural appearance; some, again, appeared swollen and filled with fat globules. The connective tissue, which accompanies the vena porta, did not appear to be altered; and this circumstance appears to explain the absence of any fluid effusion into the peritoneum.”

In the second form the deposit appears as a circumscribed tumour, or fibrous mass, and has been called *gummy tumour of the liver*, or *circumscribed syphiloma*, and *encysted knotty tumour of*

* “Traite de la Syphilis,” p. 332.

the liver.* The term gummy is objectionable, for it is the name given to the softer deposit laid down in the later period; whereas this circumscribed tumour of the liver is usually hard and fibrous, very rarely showing any tendency to soften in the centre, and is found to exist long before the latest stage is reached. The circumscribed appears frequently to be a more advanced stage of the diffused form of deposit, which, as time advances, becomes contracted into more distinct masses than would be found if examined earlier. The circumscribed is much more frequently met with than the diffused, which, supposing it to be the advanced condition of the later, would be the case, for death in these cases does not usually take place for many years after the disease in the liver has existed. The characters of the circumscribed syphiloma of the liver will be best understood by a few examples. The following are given by Dr. Wilks :—†

“Alfred H——, thirty-nine years of age, had had syphilis, and had taken mercury; had extensive disease of the cranial bones; had been in the hospital upon several occasions. Upon his final admission was in an extremely cachectic condition. Died of pleuro-pneumonia. Upon *post-mortem examination* the bones of the head were found extensively diseased. The *liver* presented upon its surface an indentation like a cicatrix, and upon cutting through this, the structure for a short distance beneath was seen to be contracted and indurated, from the presence of a dense fibrous tissue infiltrating the parenchyma. Although this puckered part as a whole was not accurately defined, yet below, it had a distinct rounded margin, and the new material appeared to have been originally deposited as rounded nodules. Such nodules were seen scattered about in the neighbourhood, and amounted to about fifty in number; they consisted of round, hard, white masses, the size of peas, and at first sight might have been mistaken for cancerous tubercles; unlike these, however, they were not situated for the most part on the surface of the organ, but in the interior, being found within Glisson’s capsule, and thus everywhere in close contact with the portal vessels. These nodules were of a pearly-white colour, very firm, hard, and dry; they cut sharply as cartilage, and did not tear as fibrous tumours, and they emitted no juice on pres-

* Budd, “Diseases of the Liver,” p. 416.

† “Guy’s Hospital Reports,” vol. ix. p. 22.

sure. The microscope showed them to consist of an amorphous, albuminous, translucent material, which, by the addition of re-agents, was seen to have somewhat of a fibrous arrangement, and interspersed with nuclei and fatty granules; in fact, a very low organizable deposit. The testes were much wasted; a section showed them to be very hard, dense, and fibrous; the true glandular structure appeared to be replaced by a tough fibre-tissue. There were also distinct nodules resembling those on the liver."

"Maryanne C—— was admitted in a wretchedly cachectic condition; she died shortly of peritonitis. The kidneys and spleen were found affected by the lardaceous disease to an extreme degree. The liver was fissured on its surface, and had throughout its substance a number of white, hard, fibrous masses. These were situated mostly towards the exterior, but some were in the midst of the organ. They were circumscribed, so that they could be turned out of their position, but not wholly so, for a circumference of fibrous tissue still remained, which passed insensibly into the hepatic structure; they were composed of ill-formed fibre. The gland tissue was elsewhere healthy."

And in another case:—

"The liver, on its upper surface, between the right and left lobes, showed the capsule puckered, and of a white colour. On cutting through this, there was found a hard mass of fibrous tissue, about the size of a billiard-ball. It was tolerably circumscribed, although it penetrated the tissue around, and when cut through appeared to be made up of a conglomeration of a number of smaller nodules."

Dr. Wilks seems to me fully warranted in the remark which he makes in connection with these cases, "that these fibroid deposits do not belong to the latest stage of syphilis, when the patient has passed into a state of cachexia."

Cancerous tubercles of the liver is the only disease likely to be mistaken for syphilitic tumours; besides being much softer, the cancerous tumours are situated more on the surface than the syphilitic.

These tumours rarely if ever soften and suppurate; although a case in which pus is said to have been found in the centre of a voluminous tumour of the kind, is reported by Dettrich. They appear to be not unfrequently absorbed, leaving behind them

depressed cicatrices ; and they have been found frequently undergoing a fatty degeneration.

The progress and course of syphilitic disease of the liver are essentially chronic ; insidious in its advance, it may escape observation for a length of time, producing finally great general cachexia, but frequently, when discovered in a tolerably early state, yielding to treatment. The signs upon which we may rely in seeking to diagnose this affection during life, are derived partly from a physical examination, and also from a reference to the deranged functions of the organ, and to the presence of other syphilitic symptoms. A careful examination with the hand of the right hypochondrium will generally detect an enlargement of the liver, and at the same time a rough, knotty feel of its surface, resembling that produced by cancerous tubercles, when the disease has advanced so as to produce a cirrlosed condition, we may find the liver smaller than natural, but enlargement is more common.

Pain in the right side is very often complained of, sometimes acute, but more frequently a dull, constant ache. Jaundice is very seldom produced ; but a dusky-yellow hue of the skin, and conjunctivæ is usually present. Ascites results from both forms of the disease, but not necessarily ; when it appears, it comes on very gradually, and is said to be associated with a chronic peritonitis, particularly of the part of the membrane lining the right hypochondrium ; the error of supposing the disease to be tubercular peritonitis, will be avoided by a reference to the other symptoms. Albuminuria is frequently present, and is referred to by Lance-reaux as an important aid in diagnosis. The roughness felt upon examination of the surface of the organ, with functional derangements of the liver, and the presence of a tubercular or scaly eruption, disease of the testicle, or other syphilitic symptoms, will form a group of signs upon which, when found in company with a progressive cachexia, we may confidently found our diagnosis.

The *spleen* has been not unfrequently found studded with small rounded masses of fibrous deposit, in cases where the other morbid

changes in the body left little doubt that they were syphilitic; and Virchow describes a general splenitis, with effusion of lymph throughout the organ, precisely similar to the interstitial hepatitis already described.

Accompanying syphilitic disease of the liver and spleen, a similar morbid alteration is found to have taken place in the *lymphatic glands* of the abdomen, those generally affected being the lumbar, iliac, and femoral, not the mesenteric, which appear to be rarely if ever engaged. The glands are found swollen and rounded, sometimes very firm to the touch; at other times they are soft and cheesy; when cut into they are seen to be injected, or to present a reddish or greyish-yellow colour. This lymphatic enlargement seems connected with syphilitic disease of the viscera, in the same way that the superficial glands are involved in the secondary stage in connection with eruptions on the skin; in both cases suppuration is a very rare occurrence, thus differing from tubercular disease of the glands.

The *kidneys* do not appear to be so frequently the seat of syphilitic disease as the liver. Albuminuria has very frequently been observed in the syphilitic, but how far this was produced by syphilitic disease of the kidney, or by the occurrence of ordinary Bright's disease, was in most of the cases very doubtful. There can be no doubt, however, that the kidneys are occasionally the seat of syphilitic inflammation and deposit, besides frequently presenting the lardaceous degeneration, which may be considered rather as one of the sequelæ. Two forms, the *diffuse*, or interstitial, and the *circumscribed*, are met with. In the former, syphilitic lymph is shed through the gland and over its surface, so as to produce a cirrhosis, resembling that produced by whiskey; the surface of the kidney in the early stage looks whitish and smooth, and streaked with white lines, but subsequently becomes very unequal, presenting numerous fissures and prominences; the organ feels harder and firmer than natural, and sometimes is much contracted in size. The cortical and tubular portions of the kidney are alike pressed

upon by the effused lymph, and both the corpuscles and pyramids of Malpighi become atrophied. This disease must be admitted as a syphilitic form of Bright's disease, which it is important to distinguish, especially from the cirrhosis produced by alcohol, which it resembles; in the latter the atrophy is more general than in the former, the syphilitic disease producing also depression and cicatrices on the surface of the kidney. During life, the presence of any of the symptoms of the third stage will render it probable that the albuminuria may be due to syphilitic disease of the kidney, and suggest the proper treatment, which, in cases recorded by Lancereaux and others, has succeeded in removing all symptoms of the renal disease.

The circumscribed syphilitic tumour is but rarely met with in the kidney, but there can be no doubt that it does occur. In several instances recorded by different observers, in which syphilitic deposits were found in other organs, small rounded masses, about the size of peas, of a yellowish colour, were found scattered through the cortical substance of the kidney, which corresponded in appearance, and, upon microscopic examination, with syphilitic tumours elsewhere.

That syphilitic deposition takes place in the *lungs*, is a fact of peculiar interest, inasmuch as it leads to the inference that many cases of phthisis may owe their origin to this deposit, and might therefore, if discovered in an early stage, be curable. That an exudation, corresponding in all respects to these found in the liver and other organs, where it is acknowledged to be syphilitic, is also found in the lungs, must be admitted; and also that many patients whose constitutions have been broken down by syphilis, die of phthisis, is well known. Further observation, however, is necessary to connect these together, to show how many of such cases are due to the deposition of syphilitic lymph in the lung, and how many are true tubercular phthisis, simply induced by the debilitating effect of syphilis. The following, recorded by Dr. Wilks, exhibits a state which may well be named syphilitic phthisis:—

“A sailor, twenty-nine years of age, admitted with advanced syphilitic laryngeal disease, died soon after. The larynx was found extensively diseased; the liver presented from fifteen to twenty nodules, varying in size from that of a marble to a walnut. The right lung contained a mass of deposit, resembling that in the liver. The left lung contained in its upper lobe a similar mass in process of softening, and below this were a few smaller deposits of the same material. The larger deposits were in size about that of a marble, and when cut through were seen to be totally unlike any ordinary inflammation or scrofulous deposit, but consisted of circumscribed nodules of a firm, yellowish, dry substance, corresponding in all particulars to that in the liver, excepting in being less firm. At the side of one of them was another one—softening, breaking up, and in process of forming a cavity. This was peculiar, inasmuch as the circumscribed space or cavity formed by this adventitious material also contained within it a part of the softened contents, in the form of distinct layers. The microscope showed them to consist of fibres, exactly resembling those found in the hepatic tubera, and thus widely differing in composition from any ordinary pneumonic or tuberculous deposit, which are formed only of cells and nuclei of various shapes.”

Sometimes a form of hepatization is produced by numerous small depositions of lymph through the lung-tissue; this is described by Lancereaux under the name of *interstitial syphilitic pneumonia*. In a case recorded by Vidal-de-Cassis, it is stated that the lower lobes of both lungs presented an induration of a bluish-grey colour, most marked on the left side, which seemed to have displaced the pulmonary structure, the bronchial tubes being separated from one another by it. The indurated tissue was very firm and resisting to the touch; there was not a trace of tubercle in either lung.

Dr. Moxon* relates the case of a woman who had numerous well-marked syphilitic symptoms, in whom a post-mortem examination showed, with many other syphilitic changes, that “the left lung was generally healthy, but considerably tougher than the average; no œdema; the section rather dry. The right upper lobe was very much indurated; granular in section, yet the granules would not be scraped off; it was darkish, iron-grey in colour,

* “Guy’s Hospital Reports,” vol. xiii. p. 339.

firm, and tough. At the apex of the lower lobe, the tissue broke down much more easily, and the state approached more nearly to common hepatization, yet the toughness even then was considerable; below this the tissue was pneumonic in a low degree." That this syphilitic pneumonia may be associated with ordinary tubercular disease, and lead on to gangrene of the lung, is shown by two other cases related by the same author. In the first case, which was under Dr. Wilks' care in Guy's Hospital, "both lungs were much indurated at the upper part; numerous miliary tubercles were present about the indurated part, and below it." And in the second, which was under Dr. Habershon's care in the same hospital, "the right pleura was adherent over the upper lobe of the lung. There was on the anterior median and lower part a large cavity of two great recesses, the walls of which were sulphur-coloured, and of the same consistency as the tissue round them, no special consolidation being present. The lower division of this great cavity had in it a large sequestrum of pulmonary substance partially attached, the process of separation not yet being complete. The rest of the upper lobe might be said to be in a state of hard, white hepatization, the state not quite uniform, some portions being of such description, while others were rather redder, but yet dry, pale, and firm, even when the condition was in its earliest stage, so that portions fairly corresponding to ordinary red hepatization existed; none of the matter was sharply defined enough to deserve the name of tubercle. The whole upper lobe would instance an attack of circumscribed gangrene on the hard hepatized lung of chronic pneumonia."

These syphilitic changes in the lungs do not produce any very marked symptoms in the early stages; and coming on insidiously, and advancing slowly, they frequently are altogether overlooked, until considerable destruction of lung tissue has taken place. The physical signs will, of course, vary according to the amount of disease, and its condition of hardness or softness. The fact of this being confined to a very small area, and occurring in the middle or lower lobes of either lung, will be in favour of the syphilitic origin

of the disease ; if, in addition to this, we find the apices of the lung free, while there is evidence of disease of the liver, the presumption in favour of syphilis and against tubercle will be increased. Our diagnosis will, however, mainly depend upon the existence of other syphilitic symptoms, or the marks of their former existence, such as the cicatrices of a tubercular eruption, or the indelible marks of syphilitic disease of the tongue or throat. The importance of every physician being fully alive to the possibility of the occurrence of syphilitic pulmonary lesions, is rendered only more evident by the difficulties which their diagnosis presents, and the consequent necessity for careful inquiry and examination. The prognosis is generally very grave, inasmuch as the lung disease is frequently far advanced before it is discovered, and is accompanied by such an extreme cachexia as to render the possibility of recovery doubtful. Numerous cases, however, are now on record in which undoubted signs of pulmonary disease existed in patients otherwise exhibiting syphilitic symptoms, in whom complete recovery followed the employment of specific treatment ; so that the discovery of the syphilitic origin of pulmonary disease opens a prospect of relief by treatment in cases which must otherwise be hopeless.

The Nervous system.—Some of the older writers, especially Astruc, described epilepsy, paralysis, and other symptoms of disease of the nervous system, as due to syphilis. But Hunter denied that the poison of syphilis ever affected the brain or cord, and consequently it is only within a very recent period that these important complications of the disease have been investigated. The numerous* interesting observations which have, within the last few years, been made on this subject, leave no doubt that the

* Dr. Todd, clinical lecture in 1851 ; Dr. Reade, of Belfast, in *Dublin Quarterly Journal*, 1852, &c. ; Dr. M'Dowell, *Dublin Hospital Gazette*, 1854, Aug. 5 ; Mr. B. W. Richardson, *Dublin Hospital Gazette*, 1856 ; Bumstead, Philadelphia, 1856 ; Dr. Chapin, *American Journal of Insanity*, 1859 ; Mr. Hutchinson and Dr. Jackson, *Medical Times and Gazette*, 1861 ; M. Zambaco, Paris, 1862 ; Dr. Duncan, *Dublin Quarterly*

brain and its membranes, the spinal cord, and the trunks of the nerves, are each and all subject to syphilitic disease.

The most constant morbid appearances found inside the cranium, in cases where symptoms of syphilitic disease of the *brain* have existed during life, are—1st. Thickening and adhesions of the dura-mater to the base sometimes, and more frequently to the surface of the brain, the two surfaces of the arachnoid being firmly glued together at the part affected. 2nd. The effusion of nodules or rounded masses of lymph, varying in size from that of a bead to that of a walnut or small egg, more or less defined: sometimes presenting a distinct edge; at others being undefined, and matting the trunks of the nerves, the surface of the brain, and the dura-mater all firmly together. Sometimes these nodules are found in the brain substance, or round the roots of the cerebral nerves, without the dura-mater being involved; but more commonly this membrane shows more or less distinct traces of thickening, and very generally the effusion which presses upon and softens the brain substance has taken place between the dura-mater and the surface of the brain, apparently originating in syphilitic inflammation of the membrane. The exact position of such an effusion, as well as its extent, will account for the production of various symptoms, according as a particular part of the brain or particular cerebral nerve may be involved. The part most frequently selected by this effusion is the base and anterior lobes, and consequently the most usual symptoms are such as point to disease involving the structures situated there, but there is no part within the cranium that may not be the seat of this deposit. The following examples, taken from cases recorded by different observers, will illustrate the pathological appearances referred to, and explain their varying characters and extent better than any further description:—

Journal, 1863; Dr. Wilks, "Guy's Hospital Reports," 1863; Prof. Jaksch, Schmid's Jahrb, 1865, &c.; Lancereaux, "Trait. de la Syphilis;" Lagneau, "Maladies Syph. du Sys. Nerveux;" also J. W. Goodwin, *Lancet*, July, 1862; Gjör, Robert, Albers, &c. &c.

“ A woman, aged thirty-one, died in Guy’s Hospital ; undoubted syphilitic disease of liver was found. The calvaria was adherent to the front part of the dura-mater, and had to be forcibly detached. On examining the interior of the bone, it was slightly roughened where adhesions had existed, but there was no independent disease or trace of previous injury. At the anterior fissure, the dura-mater was united to the bone by a firm yellow lymph ; here also the bone was slightly roughened, but was not carious. The dura-mater on the inner side was firmly and inextricably united to the anterior lobes of the brain, especially on the right side, and corresponding to the anterior fossa of the skull ; on attempting to separate them, a quantity of hard, yellow material was seen uniting them together. This filled up the sulci, and involved the cineritious substance ; on the right side it had penetrated to the medullary matter, and here the adventitious substance formed a tumour tolerably circumscribed on its deep side, the size of a walnut. There was thus a much greater quantity of this material between the dura-mater and the brain, than between this membrane and the skull, but there was an abundance of it on the petrous bone, and in the cavernous sinus. The nerves, therefore, taking their exit from the skull were surrounded by it, including the orbital, as well as the optic and fifth on the right side. These nerves were matted together by this hardened yellow lymph.”*

“ A woman, aged forty, who had suffered from syphilis, came into hospital for epilepsy ; she took erysipelas of the leg, and died. The examination of the head showed the dura-mater solidly united to the base of the cranium on the left side ; when raised, a layer of exudation, of a yellowish-white colour, was seen lying between the bone and this membrane, to which it was attached. The internal surface of the cranium was spongy ; the left frontal bone was thickened and rough. Upon the external face of the right parietal bone, a depression, the size of a five-franc piece, existed, badly defined ; round its edges were bony growths. The dura-mater was adherent to the pia-mater ; in some places by a fine cellular membrane, in others by a firm exudation ; in three separate places by solid masses, elastic, dry, and yellow, forcing themselves down into the brain convolutions, of which they formed an inseparable part. The cerebral substance, which corresponded to these masses, was injected and incompletely softened.”†

* Dr. Wilks, “ Guy’s Hospital Reports,” vol. ix. p. 49 ; prep. in Guy’s Hospital Museum, prep. 150,720.

† Lancereaux, p. 448.

“G. H., aged thirty-four, some years before admission to hospital, was seized with a fit while at work. After the lapse of more than a year, had a second, and subsequently a third, which was followed by hemiplegia on the left side. He became fatuous, and died comatose. The dura-mater was found thickened and roughened over the left cerebral hemisphere; the bone also in this position was rough, congested, and slightly softer than natural. The surface of the brain was firmly adherent to this, over a surface of eight square inches, by fibroid tissue, in which, and in the adjoining brain substance, were two or three fibrinous masses. In the left corpus striatum was found a cyst, (apoplectic) and the right was congested and much softened. The left internal carotid and its branches were plugged.”*

These cases are selected as well-marked examples of what is usually found. It will be observed, that the dura-mater and arachnoid are always more or less affected, although deposits unconnected with them are sometimes found in the substance of the cerebrum, cerebellum, or medulla oblongata; yet the preference shown by the diseased action for the membranes is remarkable. They illustrate also the fact, that disease of the bone may accompany, and probably precede and cause, the disease in the contents of the skull; but that this connection is by no means necessary, or even at all usual, is amply proved. It is important particularly to note the character of the exudation found gluing the membranes together, or deposited as separate masses in the brain substance. It is always described as firm, solid, hard, or elastic, generally of yellowish-white, or greenish colour—sometimes soft in the centre, sometimes hard throughout, but seldom or ever do we meet with any mention of general softening, or anything like sloughing or suppuration; in fact, as a general rule, it differs in no respect from the hard, contractile syphilitic lymph characteristic of the first division of the tertiary stage. No doubt here, as in the other viscera, the deposit may sometimes be of a softer and more lowly-organized material, but commonly it has all the characters of the firm, lymphy deposit.

The *symptoms* produced by syphilitic disease of the brain and its

* Dr. Jackson, *Medical Times and Gazette*, July 20, 1861.

membranes vary, according to the exact position of the deposit; special symptoms arising from the roots or trunks of special nerves being implicated, or from the pressure being exerted upon a particular part of the brain. But besides these, one or more of the following more general symptoms mark the existence of the cerebral disease: pain—epileptic convulsions—paralysis—and mental derangement—sometimes all four may exist together, more frequently the two former are found in some cases, and the two latter in others. *Pain* is a very constant symptom, and frequently precedes the others, and is, therefore, of much practical importance in a suspected case. It is fixed to one region, usually the temple, side or back of the head; it is not necessarily worse at night, but is relieved by rest and aggravated by exertion; it is very constant, showing no well-marked intermissions, and only such remission as might be produced by rest or the effect of treatment; its intensity and constancy in many cases produce total loss of sleep, which greatly distresses the patient, and increases the debility and suffering produced by the disease. In all cases where this headache has been a marked symptom, the membranes have been found to be principally involved in the disease; so that, when we meet with this symptom, we may conclude that the exudation has as yet chiefly, if not exclusively, attacked the membranes; it is not unfrequently accompanied by vertigo, and by nausea and vomiting.

Epileptic convulsions very generally succeed to headache. The late Dr. Todd, who was the first to draw attention to the significance of this striking symptom, stated it as his opinion, that when epileptic fits appeared, we might infer that the disease was extending from the membrane to the brain itself; and observers since his time have confirmed this view; but it is not necessary to conclude, from the occurrence of epileptic fits, that the brain itself is softened or materially diseased, but rather that it is pressed upon and irritated by the pressure of the deposit which is attached to the dura-mater. There is no ground for supposing that the epileptic fits are ever reflex—they always point to a centric cause. Syphilitic epilepsy differs in some of the characters of the fit from the usual

type of the malady; thus it wants usually, but not invariably, the aura, also the piercing cry, and the foaming at the mouth; nor is the stage of insensibility so profound or long-continued as it sometimes is in *le grand mal*. In the intervals between the fits, which may be of considerable duration, the premonitory symptoms of pain, vertigo, nausea, &c., will continue. If unchecked by treatment, the fits increase in frequency and severity, and are followed shortly by paralysis of the orbital muscles, or loss of sight or hearing; then by more general paralysis, accompanied by mental derangement, &c. But, happily, treatment can usually step in to prevent this downward progress.

With regard to the time when epilepsy may appear, we find it occurring, like the other symptoms of the third stage, at very various intervals after the lapse of the first year. Its occurrence before that time must be considered very unusual; but that it may do so, is proved by an interesting case related by Bumstead,* in which a gentleman, who had been very actively treated for secondary symptoms, complained, about seven months after the time of his contracting the disease, of headache. A few days after he assisted in extinguishing a fire, and upon the following day, while in his office, he was seized with a fit of epilepsy, which was followed by five others before night. The subsequent course of the case left no doubt of the syphilitic origin of these fits.

Very often, as in this case, the first syphilitic seizure is sudden, surprising the patient during his ordinary avocations.† Sometimes only one limb or one set of muscles are convulsed during the attack.

Paralysis is a sign of deeper-seated disease than epilepsy alone, which it very generally follows. Great variety, as to the extent and degree of paralysis, exists. Sometimes one nerve alone is affected, sometimes two or three; at times a single group of muscles is paralyzed, or the upper extremity, or sometimes both upper and lower on one side. This *limited* paralysis is highly characteristic of syphilitic brain disease, and is fully accounted for by the

* Bumstead on Ven. Dis. p. 648.

† Dr. Read's Case, *Dub. Quart. Jour.* 1852.

pathology, as already explained; the syphilitic deposit being so circumscribed as often to involve only one nerve, or, it may be, two or three. The nerves which are selected most frequently in syphilitic paralysis are, beyond all doubt, those which supply the orbit; and of these, the second, or optic, and the third, are those which most frequently show they are involved, by failure of their functions. Thus, the first symptom succeeding to pain in the head, giddiness, &c., may be a gradual loss of sight in one or both eyes, accompanied by dilated and fixed pupil, followed by ptosis of one eyelid, and divergent strabismus of the same eye—indicating pressure on the optic and third nerve; the fourth and sixth are involved, when, as is sometimes the case, we find the eyeball protruding, and incapable of being turned outwards, as well as upwards, inwards, or downwards. Numbness of the face shows that the trunk of the fifth is pressed upon; but this nerve does not proclaim its complication in syphilitic disease by the acute pain so commonly produced in it by reflex irritation. Deafness often proclaims the trunk of the seventh to be engaged, while there may be but little evidence of the portia-dura being affected, the muscles of the face remaining active; and, on the other hand, the portia-dura may be involved, producing paralysis of the face, while the hearing is unimpaired. This probably arises from inflammation and thickening of the sheath of the nerve as it passes through its canal in the bone.* The tongue is sometimes paralyzed on one side, showing the ninth nerve to be implicated. Hemiplegia sometimes comes on immediately after an epileptic fit, but more frequently it is gradually produced; it is generally partial. The following cases illustrate the special characters of syphilitic paralysis:—

1st. *Paralysis of second and third nerves—partial hemiplegia—mental derangement.*

“A gentleman about thirty-five years of age consulted me during the early part of the present year for the following serious group of symptoms:—He was nearly blind, he was losing the power of his left arm and

* See two cases by Professor Hassing, translated by Dr. W. Moore, in *Dublin Hospital Gazette* for Feb. 1st, 1860.

leg, and his memory was fast failing. Upon examination, the right eye was seen to be staring, with dilated pupil, insensible to strong light; the left eye was concealed from view by complete ptosis of the lid; when this was raised, the eyeball was seen to be turned outwards; the pupil was here also dilated and insensible. No numbness of the face existed, nor were any of the muscles of the face paralyzed, but hearing on the left side was very dull; the paralysis, as far as concerned the cerebral nerves, was almost confined to the two optics, and to the third upon the left side. The left arm and leg were weak; he staggered when he stood up, but afterwards walked pretty well; his manner was excited, and his memory very deficient; his tongue presented the characteristic indurated and puckered appearance of tertiary syphilitic disease; a perforation existed in the hard palate leading into the nose. His history was briefly as follows:—He had, many years before, contracted syphilis, which had produced, about five or six years ago, the disease of the palate and tongue. After this he seemed to get quite well; he married, and became the father of two children, both of whom are alive and well. His present symptoms commenced about three months before the time I saw him with gradual loss of vision, his friends remarking a peculiar staring look of the eyes; drooping of the left eyelid and unsteadiness of gait were noticed soon afterwards.*

Paralysis of fifth and third nerves—pain in the head—defective memory.†

Pat Connor, aged twenty-two, a shoemaker, admitted into the Whitworth Hospital, April 12, 1854. Patient is pale, emaciated, and languid-looking; his manner is stupid and listless, his memory is defective, and he suffers from severe pain in the right parietal and frontal regions. The right side of the face and the right eyeball have lost their sensibility; needles can be introduced into the side of the face, and the eyeball can be touched without exciting uneasiness. The right side of the tongue has lost all gustatory power—sugar and salt, for example, cannot be discriminated; but, worse than this in his own estimation, the patient says he cannot get the taste of the oil when he is smoking his pipe in the right side of his mouth. Sensation in the lips is not so completely annulled as in the other parts supplied by the fifth pair, as the patient, when he

* For further progress of the case and treatment, see page 256.

† Dr. M'Dowel, Clinical Lecture on Partial Paralysis, *Dub. Hos. Gaz.* vol. 1855, p. 323.

drinks, can recognise the contact of the vessel on the right side, and hence the latter does not seem to him to have part of the rim broken, as is observed when the sensibility of half the lips is entirely lost; mastication is performed equally well on both sides; the right nostril is drier than the left.

In addition to these symptoms, referable to the fifth nerve, there existed a second group, pointing to the implication of the third. The right eyeball was directed very much outwards, and could neither be turned upwards, downwards, or inwards; the upper eyelid could not be elevated so freely as on the left side, whilst the pupil was widely dilated, and was not urged to contraction even by the strongest light; double vision was excited whenever the patient looked upwards or downwards with the left eye. The history was as follows:—Syphilis was contracted by this patient four years previously. Two years since, when bathing, he jumped from a considerable height into the sea, and very soon afterwards was attacked with severe pain in the head, which lasted at intervals for several days, when he remarked that objects appeared double; then ptosis of the right upper eyelid occurred, and for a week vision was interrupted from this cause, but he was not aware of the existence of anæsthesia until it was demonstrated to him in the hospital. The patient improved steadily but gradually under treatment by iodide of potassium.

*Paralysis of second, fifth, and sixth nerves.**

Mrs. P——, a healthy-looking woman, of dark complexion, aged twenty-nine, was admitted an out-patient, under the care of Mr. Hutchinson, in January, 1861. She had been married ten years, but had only one child, five years ago, which died at the age of four months. Two months after marriage she took syphilis from her husband; she had suffered from ulcerated throat and tongue, and also from pain in the head. When admitted, there was convergence of the left eye, and the diameter of the pupil on this side was only two-thirds that of the other. The convergence varied, and was at times very considerable. She was, she said, obliged to wear a shade over the left eye in the street, “or she would be run over.” She stated that at one time, two months before, she could not see at all with the left eye; she lost the sight gradually during a period of several weeks; she could, when admitted, see indistinctly with the left eye, but not to make out the largest letters; the double vision was marked, the diplopia being homogeneous. There was no drawing of the face, but the left cheek was decidedly anæsthetic.

* *Medical Times and Gazette*, vol. ii. 1861, p. 135.

These cases illustrate a characteristic group of symptoms, which syphilitic cerebral disease very frequently produces. Paralysis of cerebral nerves, either single, or grouped together as is generally the case, cannot fail to attract attention when present, and will materially aid our forming a correct diagnosis. The divisions of the eighth pair are probably sometimes affected as well as the other cerebral nerves, but the functions of the pneumogastric and glosso-pharyngeal prevent their implication being so readily detected, and as yet we have no certain observations on this point. It would be well to bear in mind the possibility of these nerves being engaged when examining such a case, and make inquiries regarding them: obscure symptoms might thus be explained.

Mental derangement, to a certain extent, as seen in some of the cases already related, occasionally accompanies partial paralysis, and is invariably present when the disease has advanced so far as to produce hemiplegia. But there are other cases in which the mental derangement, in place of being of secondary importance, assumes the first place, being the most prominent symptom; in fact, the patient is maniacal, and requires all the care necessary for such cases, sometimes exhibiting no sign—except, perhaps, epileptic convulsions—to tell of the syphilitic origin of his symptoms. The following is related by Dr. Duncan:—*

“A. B., the younger son of a gentleman of property, contracted syphilis twelve years before, and was treated by the late Sir P. Crampton in this city. Meeting with adverse circumstances, the young man went to Australia, where he served in the police, and was consequently exposed to much hardship. He now, for the first time, had an epileptic fit, of, however, a very slight and passing kind; two years elapsed before he had a second, much more severe; a third, soon afterwards, was succeeded by insensibility, which lasted three weeks. He returned home, and had several severe epileptic fits during the voyage. He presented a miserable appearance upon his arrival: he was pale, emaciated, and greatly depressed, with necrosis of the olecranon of one elbow, and nodes upon the cranium. During the following months epileptic fits occurred frequently; and upon one occasion, when coming from Liverpool, an epileptic seizure was fol-

* *Dublin Quarterly Journal*, February, 1863.

lowed by violent mania, during which he had to be forcibly restrained from injuring himself or others. Up to this he had showed no mental derangement beyond profound depression and weakness of purpose. He was now conveyed to an asylum, where he was admitted in a state of profound insensibility. Consciousness slowly returned, but the next night he had another attack, which threatened to be immediately fatal; he recovered from this, however, and during the succeeding six weeks the attacks of acute mania returned at short intervals, with varying intensity, each attack being succeeded not only by lassitude and exhaustion, but by more or less marked delirium. In the intervals between the fits he was rational, but desponding; his system being apparently worn out by disease and fatigue. There was unmistakable evidence of periosteal inflammation on both sides of the head. Led by these signs to believe that the mania had a syphilitic origin, Dr. Duncan, in consultation with the late Mr. Smyly, placed this patient upon a cautious use of mercurials, which had the happy effect of so far restoring the functions of the brain that the attacks of mania entirely ceased, and the patient left the asylum, and became engaged in active employments."

Dr. Duncan relates two other cases, but is unable to point out any common character in the mental derangement which would mark its syphilitic origin.

Jacksh* has collected records of 45 cases of mental disorder resulting from syphilis, the symptoms in which were either simply loss of memory and imagination, or melancholy, passing on into idiocy and general paralysis, or mania, ending in the same way. Some had delusions, others were idiotic and paralysed from the first. Of the 45 cases 26 recovered, 3 were improved, 2 remained unimproved, and 14 died. In the favourable cases, the mental disease had not lasted more than a few weeks or months before specific treatment was adopted. The autopsies made in the fatal cases showed in all both the membranes and the substance of the brain affected, the latter being found softened both at the central and periphery; but the same symptoms were not found always associated with the same lesions. The mental disorder was almost constantly preceded immediately by severe headache, which lasted weeks and months, and was specially intolerable at night, the two

* Syd. Soc. Year-Book, 1864, p. 65; Schmidt's Jahrb. vol. 122, p. 298.

often existing together ; in 21 cases it was followed by hemiplegia, which almost always came on gradually, and was either complete or incomplete.

Jacksh* considers diabetes is occasionally produced by syphilis : the deposit taking place, so as to injure the floor of the fourth ventricle ; the disease being produced in the same way as in C. Bernard's well-known experiments on animals.

The *diagnosis* of syphilitic disease of the brain is sometimes difficult in spite of the striking group of symptoms just described, for one only of these symptoms may exist, or, at least, be complained of, and the others will only be discovered by careful examination and inquiry. Each of the symptoms, taken separately, are produced by other forms of intercranial disease, but the combination of two or more will point to a syphilitic origin. A persistent headache fixed to one region, accompanied occasionally by vertigo and nausea, and producing sleeplessness, will be sufficient to arouse suspicion ; on the other hand, if there be but little pain, there will be great drowsiness, the patient sleeping heavily through the day as well as at night ; this, too, should make us direct our inquiries as to the former or present existence of syphilitic symptoms. When epilepsy comes on suddenly as the first symptom, our diagnosis will depend very much upon the existence of other symptoms, but will be confirmed by the character of the fit—if it is partial—unaccompanied by an aura—without any, or with only transient unconsciousness, the syphilitic character will be indicated. The paralytic group of symptoms form the most characteristic signs ; but we must not depend alone upon them, as intercranial tumours of any sort pressing upon the affected nerves will produce the same effects. We must examine carefully concomitant symptoms, and make a minute search into the state of every part of the system, before we can arrive at a satisfactory conclusion. The necessity of this cautious and careful examination is still more requisite when mental derangement forms the chief sign, for there is nothing peculiar in the various kinds of mental aberration which have been found to arise from syphilis.

* Syd. Soc. Year-Book, 1865-66, p. 77.

The diagnosis must chiefly rest upon the presence of some recognised syphilitic symptom, which will generally be present—the peculiar pain in the head will aid us; and the effects of specific treatment will often be necessary before we can be certain of the nature of the case.

Prognosis.—Every case of syphilitic disease of the contents of the cranium is a serious case; not only is there danger of the loss of the functions of certain nerves, but there is the risk of the loss of mind and of life; and further, if present symptoms are relieved and even removed by treatment, there is still the danger of a recurrence of the same symptoms again. Of 147 cases collected by Lagneau,* death resulted in 47, that is two-fifths of the whole, while the remainder recovered more or less completely. Of 30 cases related by Gjør,† 5 only were cured, 12 obtained some improvement, 6 remained without any change, while 7 died. These statistics confirm the opinion, that, taken all together, these cases are amongst the most serious effects of syphilis; the gravity of the prognosis will, however, vary greatly with the nature of the symptoms. If the disease be recognised when as yet no more serious symptoms than headache, vertigo, and sleeplessness have appeared, we may expect recovery as the result of treatment. When epilepsy has occurred, the risk of paralysis and mania is greater, and the effects of treatment more doubtful, but still complete recovery may be looked for. When partial paralysis has appeared, we know that the syphilitic deposit has been effused at the base of the brain, and the hope of the absorption of this will be influenced considerably by the length of time the paralysis has existed; for if the deposit is recent, we may expect its removal by treatment; but if of long standing, it will only partially yield, if it does so at all; so that the duration as well as the extent of the paralysis will influence the prospect of restoration. The occurrence of hemiplegia renders the prospect of recovery more doubtful, pointing, as it does, to more extensive effusion; but if it be recent, it will probably disappear completely under treatment. When mental derangement forms

* "Traité des Maladies Syphil du Systeme Nerveaux," p. 164.

† "Arch. Gen. des Med.," Mai. 1859.

the most prominent symptom, the prospect of recovery or improvement depends greatly upon the duration of the symptoms. Jacksh states that in the cases collected by him the prognosis was very much better when the symptoms were but recent, no matter how serious in themselves; and this is readily understood by considering that a mass of syphilitic deposit pressing on the brain, and causing disturbance of function, may subsequently produce changes in the cerebral substance itself, which will remain, although the offending substance be removed, and thus render recovery impossible; besides, the older the deposit itself is, the more difficulty there is in gaining its complete absorption. The importance of an early recognition of all cases of syphilitic cerebral disease cannot be over-estimated; the true character of the case being discovered before the brain itself has undergone change of structure, gives us an opportunity, by appropriate treatment, of restoring the epileptic, the paralysed, and the maniacal to health, when under any other circumstances their condition would be hopeless.

The spinal cord is less frequently the seat of syphilitic disease than the brain, but when it is so affected, it is in exactly the same manner. The dura-mater of the cord being the seat of inflammatory thickening, and syphilitic lymph being deposited between it, and the cord pressing upon the latter, sometimes entirely surrounding it by a plastic effusion.* The following is related by Wilks:—

“A woman, aged fifty-three, was taken into hospital on account of a numbness and loss of sensation over the right hip, especially along the crest of the ilium. She had no outward sign of syphilis, but her constant complaint was that her body was ruined by syphilis which had been given to her by her husband. The feeling of numbness continued, until the leg on that side began to get weak, and subsequently the other leg became affected. Soon afterwards a complete paralysis ensued, with all the usual consequences of retention of urine, &c., and from which she died. *Post-mortem examination.*—Spinal cord: In the lumbar region on the right side there was a hard deposit, three quarters of an inch in length. This involved the posterior roots of the nerves to which it was

* Zambaco, “Des Affections Nerveuses Syphilitiques,” p. 251.

closely adherent, as well as to the spinal cord. It formed a lengthened irregular mass, and in bulk was altogether about the size of a nut; when cut through, it was found to be composed of an opaque, yellow, amorphous substance, like dead or degenerate lymph, and resembling the similar material in the liver. The liver and lungs both contained similar hard yellow masses."

The following description of a tumour of the spinal cord was given by Dr. M'Dowell before the Pathological Society of this city, in April, 1861.* The syphilitic nature of the tumour was proved both by the presence of other syphilitic symptoms, by a clear history of syphilis, and by the nature of the deposit itself:—

"The patient was admitted into the Whitworth Hospital complaining of a sense of constriction round his waist, of difficulty in standing upright, and of general debility. A week afterwards he began to experience difficulty in passing water, and the urine became alkaline and offensive. Soon after this he had a rigor, and walked with a staggering gait; and in another week paraplegia was fully established, and the sensibility of the lower limbs was somewhat impaired. He lingered for two months, and died emaciated from the effects of enormous bed-sores. Sixteen hours after death the spinal cord was carefully removed; its membranes were healthy, and on the surface of the cord itself nothing unusual was observed; to the touch, its dorsal portion was perceptibly diminished in consistence. In the centre of its dorsal portion, but extending considerably to the right of the median line, a tumour, of firm consistence and yellow colour, was exposed, when a vertical section of the cord was made. It was of the size of a large pea, of a globular form, and smooth on its surface and section; the cord above and below it was softened, and in parts abnormally vascular. In the centre of an area of vascularity a small yellowish spot was observed. There was no trace of tubercles either in the brain, lungs, or liver."

Cases exhibiting a similar deposit in or round the cord in syphilitic patients are given by other authors.†

The *symptoms* vary according to the exact part of the cord which is interfered with by the deposit, and by the supervention of inflammatory action in the cord; before this latter occurs, the symp-

* Proceedings of Pathological Society of Dublin, vol. i. p. 173.

† Wagner, Jaccoud, Zambaco, Gjör.

toms most usually present are pain, numbness, and paraplegia. In some cases a sense of constriction round the body, as if a cord was tied tightly round the abdomen, is complained of; sometimes pain is referred to the extremity of some particular nerve; and again, a general sense of pain and uneasiness through both limbs may be the only sensation complained of; some loss of sensibility generally exists; in Dr. Wilks' cases, already referred to, in which the lower part of the cord was found compressed by syphilitic deposit, the only symptom the patient complained of when first seen was numbness, and loss of sensation along the crest of the ilium on the right side; more or less loss of tactile sensibility in the lower extremity has been noticed in most cases. Paraplegia is, however, the most constant and marked symptom, having been present in all cases where a post-mortem examination has proved the existence of syphilitic deposit in the cord, and also in many when, under treatment, recovery took place. The loss of power comes on slowly in both lower extremities, at first shown by want of precision and vigour in walking, sometimes appearing to get better for a time, and then again getting worse. Paralysis of the bladder and rectum follows that of the limbs; one or both upper extremities are sometimes paralysed,* as well as both lower; but in these cases it may be doubted whether deposit in the brain did not also exist.

Diagnosis.—The symptoms of syphilitic deposit effused around or on the cord may all be produced by other diseased conditions of that organ, either by chronic inflammation of the membranes, or by fibrous, cancerous, or other tumours, which may be developed in the vertebral canal, and press on the cord. Signs of former or existing syphilitic symptoms should be carefully looked for in such cases, and if discovered the syphilitic origin of the symptoms will be rendered more certain by their gradual production, by the presence of pain along the track of the nerves, and by the cachectic and worn look of the patient, which is more marked in syphilitic than any other disease producing the same symptoms. The para-

* Drs. Hutchinson and Jackson, *Med. Times and Gazette*, vol. 1861, p. 466.

plegia, preceded and accompanied as it is by pains along the nerves, may be mistaken for progressive locomotor-ataxy; but the evidence of absolute loss of power, not merely of co-ordination, will be evident by examination here as in other forms of paraplegia.

Prognosis.—The prospect of restoration, in any case of syphilitic disease of the cord, will depend, as in the case of the brain, upon the nature of the disease being recognised at a sufficiently early period, before, in fact, the cord itself has undergone softening from the presence of the deposit upon it; this will occur earlier in some cases than in others, but not before paralysis has shown itself in any. Paraplegia and loss of power over both bladder and rectum may be recovered from, but generally only partially so, some irretrievable damage being usually sustained by the cord in such cases, which, had the treatment been adopted when pain or numbness alone existed, would not have been the case, and complete restoration to health might be expected. We may in all cases hold out a promise of improvement from the careful and persevering employment of proper treatment; and in many cases of apparently hopeless paralysis we will obtain results in a high degree gratifying both to the patient and to ourselves.

The *nerves*, as well as the brain and spinal cord, are at times the seat of the deposit of syphilitic lymph. Generally, as we have seen, paralysis of the cerebral nerves is referable rather to their trunks being involved in the intra-cranial deposit, than to special disease in themselves; but they have been found to be themselves also sometimes the seat of syphilitic disease. Thus, the third pair have been found three times their natural size at the point where their trunk leaves the cranium, the membranes being transformed into a homogeneous lardaceous mass, formed of a finely granular substance;* and a similar change has been noticed in the optic and other cerebral nerves, generally associated with a more extensive disease of the same kind at the base of the brain. Thus, in one of Dr. Wilks' cases, in which great pain in the head had existed

* Esmark and Jessan, Virchow and Lancereaux, Op. Cit., p. 494.

for a length of time, followed by anæsthesia of the face, loss of smell, ptosis, and ulceration of the cornea, death occurred suddenly; and "on the post-mortem examination, several small tumours were found at the base of the brain, enveloping the nerves, and some deposit also between the arachnoid and dura-mater. There was one compressing the fifth nerve, another was growing from the third nerve, and thus accounting for the several symptoms observed during life. The tumours were grey and hard."

Whether neuromata, affecting the trunks of the spinal nerves, are ever or frequently syphilitic, is yet somewhat doubtful, inasmuch as the syphilitic origin of such tumours has not been satisfactorily proved; but there can be little doubt that all the spinal nerves are subject to syphilitic inflammation and deposit round their roots as they leave the spinal canal; in this way we may account for cases where the paralysis is confined to one nerve, or where pain is continually referred to one region, and which are relieved only by specific treatment. The sciatic and intercostal nerves are said to be most frequently affected in this way. The following is related by Dr. Jackson:—*

"J. J., aged thirty-five, admitted for partial paralysis of right arm. He could move it, but in the effort to grasp, he could do little more than close his hand; he had also pains in the limb, which he said ran down into the fingers. He had also severe pain in the head, with tenderness on pressure, but mostly in the neck, from which point he described the pain in his arm as originating. The sensation of the limb appeared to be normal. He had had syphilis, accompanied with iritis, three or four years before. He rapidly improved under specific treatment."

The *diagnosis* of the syphilitic origin of a localised pain or paralysis, must depend upon the other evidences of the existence of syphilis in the system, which we should carefully look for in all cases where a gradually increasing loss of power in any particular group of muscles is complained of, particularly if accompanied by a slowly progressing cachexia; our inquiries in all cases should turn chiefly towards the present or former

* *Medical Times and Gazette*, 1861, p. 456.

existence of undoubted symptoms of syphilis, and take very little account of the history, which often is deceptive, as much on one side as upon the other. This rule may be advantageously adopted in seeking, as we must, in many of the diseased conditions produced during the third stage, for reliable evidence of the existence of syphilis; physical signs, such as cicatrices of a former tubercular eruption, or ulcerated pharynx or tongue, &c., cannot be mistaken; but the patient's own account will always be more or less open to suspicion, not so much from intention to deceive, as from ignorance.

CHAPTER VIII.

THE THIRD STAGE CONTINUED—LATER SYMPTOMS.

IT has been already stated, when commencing the description of the lesions of the third stage, that the long array of symptoms produced by the deposition of syphilitic lymph in the various tissues and organs of the body, presented, as the disease advanced, a gradual decline in vigour, which was especially marked by the altered character of the deposit, which became changed from a firm, contractile, fibro-plastic material, to a soft, less organizable deposit, and one consequently more disposed to sloughing. Hence a division was made of all the tertiary symptoms into those characterised by lymph, or sthenic deposits, and those exhibiting gummy, or asthenic deposits. This division will be found, I believe, a practically useful one, and is more accurate than any distinction founded altogether upon the time when the symptoms are supposed to appear; but it is necessary to explain, that all the symptoms of the tertiary stage may present this character—the gummy, instead of the lymph, deposit being found in the skin, testicles, liver, brain, &c., as well as appearing in the lesions now to be described. But in the case of those we have already examined, this is not the ordinary, but the exceptional kind of deposit; while in the symptoms about to be described, it is the rule, and the fibro-plastic deposit the exception. In the testicle, for example, as already explained, the ordinary characters of syphilitic sarcocele are, as its name implies, those of a hard, fleshy tumour, whose natural progress is to go on to contraction, and consequent atrophy of the gland; occasionally, however, a tubercular form of the disease is met with, which goes on to suppuration and the formation of a slough. All will admit that this latter is the exception, the firmer kind of deposit being the rule. On the other

hand, we find the cellular node, or gummatous tumour of the cellular tissue, as a rule, always produces a slough—a hard, fibrous tumour, which does not slough, being here very rarely met with; so that, while admitting that all the deposits which take place during the tertiary stage may, under the varying influences of individual health and habits, present either kind of deposit, we may safely conclude, at the same time, that in lesions of certain tissues we have, as a rule, the fibro-plastic deposit, while in those of others, in the great majority of cases, we will find the gummy matter laid down. That syphilitic affections of the viscera belong, in the majority of cases, to the former division, is proved by the records of numerous post-mortem examinations of such cases, which have been made by competent observers. Of the other symptoms described in the last chapter there can be no difference of opinion. Between this group, then, and that of the symptoms yet remaining there is no marked line of demarcation, nor does any necessary period of time elapse before these later phenomena appear. They are produced, in some cases, very soon after the secondary period—not for many years in others—and not at all very often; but whenever they do appear, they mark a decline in the vigour of the morbid processes, arising not so much from the length of time during which the poison has been in the system, as from a failure of the vigour or vitality of the system itself; thus, in many cases, a tubercular eruption, sarcocele, or visceral disease, comes on when ten or more years have passed since infection; these symptoms still presenting the same characteristic hard, fibro-plastic deposit which they show at an earlier period; and, on the other hand, the lesions characterised by the gummy deposit may appear within a year or two after infection, and present then, as if developed later, the same want of vigour, and accompanied by the same want of vitality in the system. Hence patients of a strumous diathesis quickly produce these latter symptoms; and, indeed, it is in such that we meet with the most terrible examples of their destructive character. These symptoms have been called *sequelæ*, in reference to the analogy they bear to the lesions known under this name, which come on after scarlatina and other fevers.

In employing this name, we must guard against the idea, which might be suggested by it, that they have in any degree lost their syphilitic character : although their production is influenced by the constitution of the patient, yet they are as truly characteristic of syphilis as are any of the lesions already described. They may be classed as follow :—

- 1st. Deposits in the cellular and submucous tissue ;
- 2nd. Deposits in muscles, tendons, and fasciæ ;
- 3rd. Deposits in bone and periosteum.

The *cellular node*, or gummy tumour of the subcutaneous cellular tissue, is not as frequent a symptom as the periosteal node, but it may be advantageously considered first, as it is highly characteristic of the stage of the disease, at the description of which we have now arrived, and because the pathological characters of the deposit found to exist in this lesion will illustrate those which take place in muscles, periosteum, and bone.

The subcutaneous gummy tumour is formed by the circumscribed effusion of syphilitic matter in the subcutaneous areolar tissue ; (a diffuse form is described by Vidal-de-Cassis, but is very rarely if ever met with.) The microscopic character of this effusion has been studied by Virchow, Lebert, C. Robin, and others. It is described as consisting, when in an early stage, of a finely granular substance, with round, nucleated corpuscles scattered through it, and a quantity of fibrous material, closely resembling the areolar tissue in which it is found ; at a later stage, the whole is found undergoing a fatty degeneration. When cut into during life, or examined with the naked eye after death, these tumours are found sometimes firm and solid, more generally they are soft in the centre, from which a gelatinous fluid escapes ; sometimes they are throughout like thick gum ; they are surrounded by a firm, whitish, fibrous cyst. They vary in size from that of a pea to that of a hen's-egg ; sometimes grouped together, they are more generally solitary. They have been observed in almost every part of the surface, but are most frequently met with in the lower extremities, and about the shoulders and chest ; sometimes several

are found at the same time in different parts of the body, but very often only one exists. The development of the subcutaneous syphilitic tumour is remarkably slow; provoking neither pain nor inconvenience at first, it often altogether escapes the notice of the patient, until it attains a considerable size. When noticed first, it is usually the colour of the skin, of a globular form, quite movable under the skin and upon the fascia beneath it; it feels rather hard at its circumference, and elastic in the centre. No pain is produced by handling it, unless a nerve happens to lie immediately beneath it. As it gradually augments in size, the skin becomes adherent to it over its most prominent part, where also it becomes of a dull-red or purple colour. Fluctuation becomes perceptible in this spot; then the thin skin ulcerates, and exposes a slough, of a dirty-white colour; very little if any purulent matter is formed or discharged when the skin breaks. The ulcerated opening enlarges until the slough, lying in a kind of cavity below, is fully exposed. It is very sluggish in separating; and if means be not used to expedite its expulsion, considerable ulceration of the surrounding parts, and a corresponding discharge of grumous pus is produced. The slough consists of the syphilitic deposit and some of the surrounding areolar tissue involved with it. It differs in appearance from the slough discharged from an ordinary boil or anthrax, in being more circumscribed, and in its more compact form, coming out in one semi-solid lump, instead of shreddy masses, as in the anthrax. When the slough is expelled, a cavity is left, with a dark-purplish overhanging edge; this soon heals, leaving a depressed cicatrix, at first of a violet colour, but afterwards becoming dull-white. The gummy tumour does not always slough; it may be absorbed, and probably would as readily yield to treatment as the same deposit effused elsewhere does, if treated before softening and adhesion to the skin had begun; but its natural course appears to be, to pass through the several stages of—development—death—and discharge. It occurs more frequently in women than in men, and in those of strumous diathesis more readily than in others of a more vigorous constitution.

The *diagnosis* of the cellular node is not always readily made. Not unfrequently only one is developed, and this situated, as it often is, about the knee or thigh of a person otherwise apparently in good health, and presenting no other sign of syphilis, may be supposed to be *strumous*; a name which, from its indefinite character, has afforded a ready refuge in which to place any obscure morbid process, and the loose employment of which, in many other cases besides the present, has prevented the recognition of syphilis:

“ A groom, at present attending as an out-patient at the hospital, presents, under the angle of the jaw on the right side of the neck, a swelling, the size of a hen’s-egg. Unlike the ordinary strumous glandular enlargement in this region, it cannot be isolated from the adjoining parts. It was, when first seen, of a dark-red colour, and adherent to the skin. Poulticing for a few days made it soft at its most prominent part. An opening was made at this spot, and about a teaspoonful of serous fluid was discharged—no pus. After a few days a little pus was discharged each day; but at the bottom of the wound can now be seen a yellowish-white substance, which, when pressed in the fingers, breaks up. It is soft, something like the contents of an encysted tumour of the scalp; the diagnosis of this being a gummous tumour was fully confirmed by careful inquiry into the antecedents of the patient, who, however, does not present any other syphilitic symptom just at present.”

A close attention to the appearance and other characters of the cellular node in its different stages will enable us to recognise it, and consequently to detect the syphilitic poison without asking any questions; but it will be well to examine carefully for the traces of former ulceration of the throat, tongue, or skin, to fortify our opinion. Ricord* has given a drawing of a gummy tumour developed in the loose areolar tissue of the scrotum, where it might readily be mistaken for lipoma testis.

In its early stage a small gummous tumour may be mistaken for a fibrous growth, or, if it happened to be close to a nerve trunk, for a neuroma. Such growths should awaken suspicion; and if upon examination marks of other syphilitic lesions be found, it will

* “Iconographie,” pl. xxxviii.

be well to place the patient upon the treatment suitable for gummata in their early stage, the effect of which will be to cause the disappearance of the tumours if syphilitic, while it cannot possibly do any harm if they are not. The progress of the case will, however, clear up the diagnosis, as a fibrous growth will not become soft, as the gummatous tumour will; and the connection of the tumour with the nerve will be rendered certain, as it increases in size if it is a neuroma. In its second stage a gummatous tumour may be mistaken for an anthrax or boil, or a small chronic abscess; from the two former it will be distinguished by the total absence of the acute pain and constitutional disturbance which accompany them, and from the latter by the want of the signs of fluidity which will be characteristic of it. The recognition of the gummatous tumour is important, not so much on its own account, as because it affords a sure proof of the syphilitic poison being still present in the system, and may thus explain other more important lesions, which, without some such outward clue, we might fail to trace to their true origin.

The same morbid process which results in the production of subcutaneous gummata takes place also in the *sub-mucous* areolar tissue, producing various effects, according to the exact position in which the deposit occurs. When laid down in the connective tissue of the pharynx and palate, it produces a most serious form of syphilitic sore throat, described by different authors under the names of *tertiary*, *sloughing*, or *phagedenic*, and already described (page 121) when the more superficial varieties of sore throat were being examined. When deposited in the sub-mucous areolar tissue, the gummatous matter seems to pass through its stages more rapidly than when situated beneath the skin, for very often the tertiary sore throat is not complained of until ulceration has already commenced. If examined before this has taken place, the fauces upon one side, or the soft palate, will be found to present a dusky-red swelling, which may encroach considerably upon the throat or mouth, but as yet has given rise to no symptom beyond some difficulty in deglutition. Very often, however, this early

stage is unnoticed, and serious and even alarming symptoms, resulting from the sloughing process having commenced, arise within a very short period after the throat is first complained of; the morbid process, although varying in rapidity, seems, however, to be the same in both cases. The peculiar functions of the part render the expulsion of the slough from the sub-mucous tissue of the pharynx one of great distress and even danger to the patient, deglutition being greatly impeded, if not altogether stopped. When the deposit extends up beneath the mucous membrane lining the nose, it produces, if allowed to proceed unchecked, exfoliation of portions of the turbinated bones, from their mucous covering being separated from them, and their vascular supply being thus cut off. The same morbid process takes place in the *larynx*, producing a form of syphilitic laryngitis different from and more destructive than those already described; circumscribed yellowish masses of deposit have been found studding the interior of the larynx, varying in size, rounded in form, sometimes firm, more generally soft, in some cases attaining such a size as seemingly to impede respiration, and almost block up the opening of the glottis.* When subsequently these tumours soften, ulcerate, and slough, they give rise to great distress, and are not unfrequently the cause of œdema-glottidis, and may thus prove fatal. When this period has been safely passed, there remains still the cicatrization, and subsequent contraction of the ulcerated mucous membrane, which gives rise sometimes to a kind of stricture of the air-passage through the larynx, from the irregular puckering of the surface; even when no positive narrowing follows, the functions of the organ are seriously damaged by the destruction of the fine areolar tissue which connects the mucous membrane to the parts beneath it, and the consequent adherence and rigidity of the lining membrane. But a still further injury may result to the larynx; the cartilages sometimes perish, as the bones of the nose do, from the destruction of their vascular mucous covering; the arytenoid are sometimes found loose and black, denuded of all covering of

* Dr. Wilks' "Guy's Hospital Reports," vol. ix. plate iii. fig. 4.

mucous membrane, still held, perhaps, in their place by some ligamentous fibres, and surrounded by an ulceration with raised edges ; they no doubt are, under these circumstances, often coughed up.

The symptoms produced by this form of syphilitic laryngitis are, as may be supposed, characterised by a greater disturbance of the functions of the larynx than is caused by the other forms already described. The alteration of the voice is the first symptom which attracts attention. At first this may be only a huskiness ; but before long, as the deposit increases, the voice cannot be raised above a whisper ; with this there is a constant short cough, not accompanied at first with much expectoration, but subsequently, when the ulceration and discharge of the deposits take place, there is a copious muco-purulent expectoration, streaked with blood. The patient complains from the first of a sense of uneasiness and pain in the larynx, worse at night, when also a sense of choking is apt to arise, the respiration during the day being tolerably free. When the discharge commences, serious symptoms of obstruction may arise, for the relief of which tracheotomy has been performed, but usually the symptoms are more those of chronic laryngitis ; the patient becomes greatly emaciated, resembling one suffering from laryngeal phthisis, and if the laryngeal disease be accompanied by the same process in the pharynx, death may result from exhaustion. The laryngoscope has opened the larynx to inspection, so that we can now refer to *physical* as well as *general* signs in forming our diagnosis ; without this aid it would at times be difficult to distinguish the syphilitic affection from simple chronic or tubercular laryngitis. If the state of the pharynx will permit of the use of the mirror, which it generally will, we will be able to recognise the presence in the larynx of deposit, either in the form of a rounded tumour, or of a sloughing mass, either of which will point out the syphilitic nature of the disease, since neither of the other diseases exhibits any deposition, but ulceration only, an essential difference between these

different affections of the larynx, which was pointed out by Dr. Wilks;* even when all the deposit has been discharged, there remains much thickening round the ulcers, and subsequently there is puckering and unevenness of the inner surface of the larynx, which might be caused by simple laryngitis, but laryngitis unconnected with either tuberculous or syphilitic taint is exceedingly rare. In addition to whatever evidence the laryngoscope affords us, we must seek carefully for the marks of former, or the presence of other syphilitic symptoms to decide the diagnosis.

Prognosis.—This, the deep form of syphilitic laryngitis, is always a very serious lesion, for even if destruction of the cartilages does not take place, the voice for the remainder of life is more or less completely lost. In most of those who survive the danger of œdema of the glottis, and the exhaustion which accompanies the disease, the voice is never raised above a husky whisper, the subsequent contraction of the ulcers producing serious damage to the vocal chords, and sometimes producing such an amount of obstruction as to greatly interfere with respiration, and require an artificial opening in the trachea to be established to give relief to the dyspnœa. Much, however, may be done by an early and judicious treatment to limit the extent of the deposit, and consequently to diminish the results of subsequent extensive ulceration and contraction.

There is reason to believe that deposition of gummy matter takes place sometimes in the sub-mucous tissue of the *genito-urinary tract*, both in men and women. Virchow† states that tertiary ulceration and contraction of the canal of the urethra is not unfrequent, and says with regard to the ulcers observed by him, “They have exactly the same character as those of the larynx.” He relates a case in which an ulceration of this kind extended up to the bladder. Ricord describes the formation of gummatous tumours in the corpus cavernosum penis, commencing as small hard bodies felt on either side, or towards the back of the

* “Pathological Anatomy,” p. 204.

† Lancereaux, *Op. Cit.*, p. 287.

organ ; they steadily increase, giving little if any uneasiness to the patient, until the induration has arrived at such a degree as to interfere with the circulation in that side ; when, upon the occasion of erection, the penis is curved towards the diseased side ; in some cases a complete ring being formed by the diseased organ.* A similar deposit is described as sometimes being found beneath the mucous membrane of the *bladder*, but proof of the syphilitic nature of these cases is wanting as yet. There can be no doubt, however, that the *uterus* is at times the seat of this tertiary deposit, which may readily be confounded with either fibrous tumours or cancerous disease of that organ. In cases where existing symptoms or previous history support the idea of syphilis, the character of the hardness felt, and the nature of the discharge, if any exists, should be carefully taken into account, and the patient given the benefit of anti-syphilitic treatment, if any doubt whatever exists of the nature of the growth.

There is reason to believe that the *ovaries* too are at times the seat of a similar deposit. Post-mortem proof is still wanting of this ; but from cases in which a tumour, slowly increasing and occupying the region of the ovary, has disappeared rapidly under specific treatment, we may infer the possibility of these organs being sometimes the seat of a similar deposit to that which occurs elsewhere.

Deposit in muscles, tendons, and fasciæ.—Syphilitic disease of the muscles was referred to by Theodosius in 1553, and by Astruc in 1777 ; but it was not until the present century that it received much attention. Boyer, Bouisson of Montpellier, Ricord, and Notta, have specially investigated the subject. Sometimes certain muscles have been found permanently contracted ; sometimes the presence of a distinct tumour can be felt ; while again, one muscle or a whole group is found converted into a hard, rigid mass, having lost all appearance of muscle. All these, however,

* “Nous avons observe toutes les variétés de la maladie que nous décrivons, et nous avons vu certaines malades chez lesquels la verge décrivait un anneau complet.”—*Ricord, Lancereaux*, p. 288.

are the results of the same pathological change—the effusion of syphilitic deposit into the substance of the muscle—sometimes diffused, more generally circumscribed—which, by separating the muscular fasciculi from each other, may shorten the whole muscle, and thus produce the contraction; or being somewhat more sharply defined, may be felt as a rounded tumour, resembling cancer, or other new growth, and which may become in time converted into a firm material, which, causing the atrophy of the muscular fibre by its pressure, leaves in its place an inert substance incapable of contraction. The seat of this effusion is the areolar or connective tissue of the muscle, the muscular fibres being found to pass through it, being completely surrounded by it, but still retaining their own structure intact. This, as explained by Dr. Wilks, (see page 83,) contrasts with the mode in which cancer or tubercle is laid down; the latter, increasing round a small point or centre, when developed in a muscle, push aside the muscular fasciculi, which consequently are found stretched round the new growth, not passing through it.

The deposit, small at first, and of greyish colour, as it increases in size becomes yellowish; sometimes it is found upon examination to be semi-fluid, like thick gum; more usually it is firm and solid, and is described in some instances as becoming at length so hard as to resemble bone. It generally, in fact, resembles closely in consistence and colour the deposit which forms the gummy tumour of the cellular tissue. It passes, according to Bouisson, through three stages. 1st, that of formation; 2nd, that of solidification, or change; and 3rd, that of absorption, or degeneration. All the muscles are liable to this deposit, but some are more frequently affected than others. The sterno-mastoid, the trapizius, the flexors of the arm and forearm, the external muscles of the thigh, and those of the calf of the leg, are most frequently found affected, and to these we must add the muscles of the heart itself. Developed in this latter situation, it produces special effects, generally proving fatal, by interfering with the action of the organ; it demands therefore special consideration. Ricord was

the first to prove the possibility of the occurrence of syphilitic deposit in the heart, and his observations have since received abundant confirmation from those of Lebert, Virchow, Wilks, Lancereaux, and others. The deposit, in the majority of cases, has been found in the wall of the left or right ventricle, or in the septum of the ventricles; in only one case out of eight collected by Lancereaux was it found in the wall of the right auricle. The appearance usually presented is that of a distinct growth or deposit in the muscular wall, projecting into the cavity nearest to it, circumscribed to a certain extent, but not completely so, the morbid material being infiltrated through the muscular tissue. When cut through, the growth is found to be of a firm consistence, of a greyish or yellowish-white colour, varying in size from that of a pea to that of a walnut, or even larger. This isolated and circumscribed tumour is not unfrequently found associated with more or less diffused thickening in the muscular tissue around, and also with thickening of the endocardium and pericardium on either side of it. In none of the cases as yet recorded of this deposit in the heart, have the valves been involved in the disease, so that we have now a well-marked distinction between syphilitic and rheumatic carditis, the latter in the majority of cases attacking the valves. The size and form of the heart is changed by syphilitic deposit, the whole size being increased both by the deposition in the wall, and by the dilatation of the ventricle which follows; the form, too, is altered, one cavity being enlarged, while the others retain their natural size. The deposit has been described in some cases as greyish-white, hard and firm; in others, as yellowish and cheesy, probably depending upon the stage of development at which they had severally arrived. It seems reasonable to suppose that syphilitic gummy deposit in the wall of the heart will pass through the same changes which we find it does in the cellular tissue and in other muscles, and consequently that we might expect to find a softened deposit becoming discharged either into the cavity of the ventricle, or into the pericardium. This termination is opposed by the thickening of the endocardium and pericardium which takes

place over the tumour, and also by the fact of death resulting by the interference of the tumour with the action of the heart, before it has arrived at a sufficiently advanced stage to slough; but that such a termination may take place, and produce death by embolism of the cerebral arteries, seems possible. The following is related by Oppolzer:—*

“A man, otherwise syphilitic, is suddenly struck down hemiplegic, and dies in a few days. We find, upon examination, a softening of the middle lobe of the right hemisphere, with obstruction of the artery of Sylvius. Below the aortic valves there existed two little orifices, leading into a cavity capable of containing a walnut, and which appeared to have been produced by a softened gummy tumour.”

Another termination which may result is fatty degeneration of the heart, this condition being found to exist in some of the cases recorded.

In most of the cases in which syphilitic disease of the heart was found after death, the *symptoms* were very imperfectly if at all observed during life. However, the following *physical* and *functional* signs have been noticed in some:—Percussion showed the area of cardiac dulness to be increased, while auscultation showed the action of the heart to be violent and irregular, but usually unaccompanied by any abnormal sound; in some cases a soft *bruit-de-souffle* was heard accompanying the first sound, most distinct at the apex, but generally there was no *bruit* whatever; the pulse was usually feeble and irregular. The patients complained of oppression about the heart and dyspnoea; some had acute angina; in general the lips were pale or bluish, and sometimes œdema of the extremities existed. Death took place suddenly in some, and very rapidly in most; in three, however, mentioned by Lancereaux, it came on slowly.

None of these symptoms are sufficiently peculiar to render the existence of syphilitic deposit in the heart certain when observed singly, but they form a group which, when found to exist in a syphilitic system, will be highly suggestive, especially if the want

* Lancereaux, Op. Cit., p. 389.

of evidence of valvular disease makes it unlikely that rheumatic inflammation has at any period damaged the heart. In all cases of tertiary syphilis, especially when gummata have been developed in the cellular tissue or muscles, we should be fully alive to the possibility of their occurrence in the heart, and watch for the first symptoms of cardiac distress. And on the other hand, when we notice the above group of symptoms, and when there is no evidence of chronic valvular disease, we should make narrow search for the signs of the existence of the syphilitic poison, by which the true but hidden cause of all may be discovered, and appropriate treatment suggested.

Returning to the superficial muscles, we find the symptoms which characterise the syphilitic deposit in them sufficiently distinct, yet mistakes are of frequent occurrence. In a superficial muscle, when we can make a careful examination with the hand, we find either a globular tumour, or a diffused general hardness of the muscle, the deposit being more or less distinctly circumscribed in different cases. When presenting the outline of a distinct tumour, it will be found to be movable or fixed, according as the muscle is relaxed or contracted, arising from its intimate connection with the fibres of the muscle, which prevents its being movable when the fibres are fixed; several such tumours may be found in one muscle, but much more commonly only one exists, and this may attain the size of a small orange. Considerable pain is complained of, more especially when the muscle is called into action; sometimes the pain is referred entirely to the origin and insertion of the affected muscle; the symptom which generally first attracts the attention of the patient is loss of power to use the limb freely, arising from rigidity and contraction of the affected muscle. Thus, a celebrated singer consulted Ricord, because he found himself unable to flourish his right arm as usual on the stage: a syphilitic deposit existed in the biceps muscle. In the following case pain and contraction was noticed by the patient, who, although well aware of the existence of syphilis in her system some time pre-

viously, was much surprised to find her present symptoms referred to the same cause :—

Mrs. —, aged about forty, had been in the Richmond Hospital under Mr. Hamilton's care, for syphilis, received from her husband two years before she applied to me, which she did on account of a painful contraction of her right knee. Upon examination, I found the knee partially flexed, the patient being unable to put her heel to the ground without great pain. The joint was free from any appearance of disease ; the gastrocnemius and other muscles of the calf of the leg felt harder than natural, and at the upper part a distinct swelling existed, as if the muscle there was gathered up as in cramp. There was a periosteal node on the lower third of the tibia. She could bear the tumour to be freely handled without pain, but the stretching of the muscle necessary to allow the foot to be placed flat on the ground, gave great pain.

The usual course of tertiary deposit in muscles is to advance very slowly and insidiously ; its stages are not less distinct than those of the cellular node, but absorption is the rule, and sloughing only exceptional. In its several stages, mistakes are very usually made regarding it. During its early period of development, if noticed at all, the pain complained of is supposed to be rheumatic. When the tumour is found in the muscle, and can be distinctly felt there, it has frequently been pronounced to be fibrous or cancerous, and the knife employed for its removal ; to the surprise of the operator, however, this fibrous tumour will not turn out from the part in which it is embedded, as he expected, and he finds it necessary to cut away the muscular fibres along with it. When softening takes place, the disease is supposed to be an abscess, and treated accordingly ; on the other hand, when the growth becomes very hard, as it sometimes does, it is described as an exostosis. The diagnosis, however, of the true nature of these tumours presents no great difficulty, if the possibility of their occurrence in a syphilitic system be fully recognised, and their distinctive characters kept in mind.

The *tendons* are not unfrequently the seat of a similar deposit to that which is found in the muscles. It appears either as a general thickening of the tendon, or as one or more tumours growing from

its surface; usually the syphilitic growth springs from the surface, but sometimes it is developed in the centre of the tendon; in the latter case the tumour is fusiform, the tendon gradually swelling out above and below, but in the former it appears as an abrupt projection in the course of the tendon. Sometimes these growths are hard and firm: more usually they are soft, and semi-fluctuating. It is the thickest and strongest tendons which most frequently are the seat of this deposit; consequently the tendo-Achilles has been often found affected by it, and the tendons of the ham-string muscles at their attachment to the tibia, with which may be found combined syphilitic inflammation of the aponeurotic structures in and about the knee-joint, as in the following case:—

T. W., aged about forty, applied to me in November, 1867, complaining of a painful swelling of his left knee-joint. Upon examination, there was found considerable effusion into the cavity of the joint; but much the most painful part was at the outside, over the head of the fibula, where an oval swelling about the size of a hen's egg, separate from the general swelling of the joint, existed. This swelling was full of a thick fluid, as evidenced by indistinct fluctuation. The patient could not bear much pressure upon it. Any motion of the limb caused pain in this part, and he was in consequence unable to walk. The tendon of the biceps muscle could be distinctly traced down to the tumour which surrounded its insertion into the head of the fibula. It had been several weeks in attaining the size it then presented. It had become much more painful during the past week, during which the swelling of the knee-joint had come on. There was considerable constitutional disturbance, the pulse being quick, and the tongue coated with a white fur. The patient's face was deeply marked with the scars of an old tubercular eruption; his throat, too, exhibited the smooth, shining appearance left by the cicatrization of syphilitic ulceration of its mucous membrane. His history was, that twenty years before this time he had contracted syphilis, which had, in one way or another, shown itself ever since, sometimes with long intervals of good health. The pain and accompanying fever subsided under rest and general treatment, and the swelling gradually disappeared under the influence of iodide of potassium. Six months after this, the patient again presented himself with precisely the same affection of the left knee, only it was less acute, there being but little pain, and no constitutional disturbance. It yielded but partially and very slowly to specific treatment.

Nelaton relates a case where two such tumours were developed upon the tendons at the inside of the knees, where they closely simulated the appearance presented by foreign bodies in the joint. Whether developed in the fascia or tendons, these tumours give little pain, except when forcibly pressed upon by the contraction of the muscles to which they are attached, when pain is felt, sometimes so much so as to prevent the use of the limb. When not absorbed under the influence of treatment, the gummy tumour of the tendons or fascia follows the course of the cellular node, becomes soft and attached to the skin, which becomes red over it, ulcerates, and gives exit to a slough of the dead deposit, with little or no formation of pus.

In their early stage, when yet small and hard, one of these tumours may be mistaken for a *ganglion*, so commonly met with about the wrist and back of the hand. The elasticity of the ganglion, which evidently contains fluid, will contrast with the semi-solid feel of the syphilitic tumour, which latter is always in the course of some of the larger tendons, or attached to an aponeurosis, such as the palmar.

The flexor tendons of the fingers are at times the seat of this deposit, and apparently by the extension of the disease to the neighbouring aponeurotic structures a peculiar enlargement of the whole finger is produced. As in a case related by Nelaton, in which the middle finger of the right hand was the seat of a painful enlargement, occupying chiefly the first phalanx, and diminishing gradually towards the last; at its greatest part, the swelling increased the circumference of the finger by about half an inch. This general enlargement of all the fibrous structures of the finger has been named by Nelaton, *Panaris-Syphilitique*.

When the matrix of the nail becomes involved in the syphilitic inflammatory action, we have tertiary *Syphilitic Onychia* produced. The extremity of the finger or thumb becomes swollen, of a violet colour, and constantly painful; the nail soon becomes changed; losing its naturally smooth and polished appearance, it looks dry and brittle; ulceration then begins round the nail, and the finger

presents a most characteristic appearance; the last phalanx being swollen out to twice the size of the second; the swollen integument raised in a purple ridge round the diseased nail, which, with ulceration going on round its edge, lies, as it were, imbedded in the diseased structures round it. If the inflammatory action extends to the periosteum, as it frequently does, then necrosis of the last phalanx will result. The nail falls generally, and is never fully reproduced, a little deformed nail finally taking its place.

Deposits in bone and periosteum.—Syphilitic disease of the bones has been acknowledged and described since the sixteenth century, and yet there is no part of the system in which the morbid changes produced by the syphilitic poison are still so imperfectly understood. The terms, caries and necrosis, which have been applied to syphilitic disease of the bones, convey an idea simply of destructive ulceration, or death of the tissue, and thus have prevented the recognition of the essential feature of syphilitic disease of periosteum and of bone, which is the deposit of the same syphilitic lymph characteristic of all tertiary lesions. This deposit may be, as elsewhere, either hard and contractile, or soft, and liable to slough, in which case ulceration, or death of osseous tissue, occurs; but this is a secondary effect of the deposition of syphilitic matter, which itself is the commencement of the other morbid changes, and takes place in all cases. We are specially indebted to the researches of Virchow for correct ideas regarding the pathology of syphilitic osteitis and periostitis. He shows that in bone, as in other parts of the system, syphilis produces the deposition of an albuminous material: this may take place between the periosteum or pericranium and the bone, and at the same time in the medullary cavity and Haversian canals of the bone, producing a node on the surface, and an hypertrophy or thickening of bone itself. The future changes through which this albuminous material may pass will determine whether a hard, fibrous, and bony tumour may result; or, on the other hand, an ulceration, and destruction of the osseous tissue. The conditions which determine which of these results will take place are, no doubt, the same in this as in all the other tertiary

lesions, the character of the effusion depending on the health and habits of the patient, upon the vigour of the disease, and upon the treatment he may have been subjected to. The intimate union subsisting between the periosteum and the bone it covers, renders it probable that in no case is the morbid action confined to either one or the other of these structures, but that both, in greater or less degree, are affected in all cases of syphilitic *periostitis*, as the disease is usually called. The first symptom which proclaims that the bone and its fibrous covering are being attacked by the syphilitic poison, is *pain* of a peculiar character; it is always worse at night; sometimes it is felt all day, but, if so, is increased tenfold when the patient gets warm in bed; sometimes it disappears during the day, and returns again at night. In seeking to explain this remarkable nocturnal exacerbation, Ricord made inquiries of those whose employments—such as baking, &c.—kept them up all night, and who consequently were in bed during the day: he found that the exacerbation in such cases was diurnal, leading to the inference, that the recumbent posture and the warmth of the bed are the causes which provoke the increase of pain. The nightly pain is often so extreme as altogether to deprive the patients of sleep, who complain bitterly of this aggravation of their sufferings. Another feature of the pain is its local character; it is not merely a general aching, but, with a sense of general pain and uneasiness, there is a burning pain in one particular spot upon the surface of some superficial bone, where the pain is, as it were, concentrated. Here we will find upon examination that pressure cannot be borne at all; and frequently, upon examining with the finger the surface of a bone, we will come upon a tender spot, of which the patient did not complain, but where the slightest pressure produces acute suffering. In these spots the diseased action is commencing.

Pain in any spot will not have existed long, before the next symptom, *swelling*, begins to show itself. At first there is merely a thickening felt when the finger is drawn along the surface of the bone, but it soon increases to a distinct swelling; generally oval in the long axis of the bone on which it rests, its edges are undefined,

and it is most raised in the centre. This swelling, or *periosteal node*, is formed by an effusion between the periosteum and the bone, at a point corresponding to where the bone itself is affected; it is in fact the result of syphilitic osteitis and periostitis at this spot. Nodes vary according to the character of the effusion of which they are formed; thus we find them classed into *soft* and *hard*, the former being filled with a semi-fluid substance, which gives an indistinct sense of fluctuation when examined, while the latter feels perfectly firm. *Elastic* and *plastic* are names also used by some to denote the varying character of nodes, according to the fluidity or firmness of the contained matter. The name *phlegmonous* is given when the inflammatory symptoms are severe, and when pus is formed beneath the periosteum; this, however, but rarely happens. In the great majority of cases the node is either *hard*—that is, so firm as to give no sense of fluctuation, in which case we may conclude that it is formed by the deposition of a firm syphilitic lymph—or *soft*, when we know that a more lowly organized material (gummy matter) has been effused. A careful examination will detect in either case an enlargement of the bone corresponding to the base of the node; the same effusion which raises the periosteum, filling also the vascular canals of the bone. The course which each variety pursues, however, is different; the hard node, when uninfluenced by treatment, becomes gradually more hard, and finally is converted into bone, thus forming an exostosis, of which two varieties are described, the *epiphysary* and *parenchymatous*. In the former, ossification begins at its periosteal side, and extends inwards towards the bone, to which consequently it will, until ossification be complete, be united by an intervening fibrous substance, thus appearing like the epiphysis in young bones. They are frequently multiple, when they are said to be arranged in the annular form, as seen in certain syphilitic eruptions. They vary in form, being sometimes conical, sometimes flattened, never of large size; they are produced apparently when the periosteum is primarily and chiefly affected; they terminate by becoming

adherent to the bone—in fact, by the completion of their ossification.

The parenchymatous exostosis follows, when the bone itself has been primarily and chiefly the seat of syphilitic deposit; firmly adherent to, and forming part of the bone, it is laminated, and becomes extremely dense and hard.

The soft node tends to soften, then to ulcerate, discharging its contents, and leaving an ulcer which exposes the bone, which is found rough and carious; in its early stage the soft node readily yields to treatment, and its contents become absorbed, leaving only a thickening of the periosteum and bone at the spot. It is upon superficial bones that nodes most frequently form; thus we find them most commonly upon the tibia, clavicle, sternum, olecrenon process of the ulna, lower end of the radius, cranial bones, and more rarely upon the patella, os calcis, carpal, and phalangeal bones. The frontal is found more frequently the seat of nodes than any other cranial bone; when situated on the forehead, a node projects like a horn, much too prominent for the patient's comfort; sometimes it forms upon the inner surface of the frontal, beneath the dura-mater, projecting against the anterior lobes of the brain, and giving rise to serious cerebral symptoms. Lagneau, who collected the records of several cases where syphilitic exostosis projected from the inner table of the skull, found the majority of them sprang from the frontal bone.

When developed upon the walls of the orbit, as is sometimes the case, protrusion of the eye-ball follows, and loss of vision from stretching of the optic nerve.

Langneau has reported several instances of syphilitic exostosis of the vertebræ, some of them projecting into the spinal canal.

In ordinary cases the diagnosis of syphilitic periostitis and nodes is very readily made; pressure on the bone complained of will always cause pain, if there be periostitis. Thus we can at once decide whether a pain in the head is due to this or to other causes, by pressing the surface of the cranium with the finger in different places; if the patient feel this to give pain, we will then find some

particular part worse than the rest, and here a prominence will further reveal the true nature of the case. When, however, a node is situated within the cranium, orbit, or spinal canal, we can only argue from the symptoms produced to the various causes which could produce such phenomena; and the fact that a node may and does form in the cranium, orbit, and spinal canal, will, in a syphilitic system open a hopeful explanation of the very serious symptoms which are presented, and encourage us to give a persevering trial to the medicine, which, if employed in time, will procure the absorption of the effused syphilitic matter, and with this the relief of the symptoms.

Syphilitic disease of periosteum and bone is accompanied by a peculiar kind of constitutional disturbance, which is so characteristic, as to have led me more than once to examine for and discover the existence of nodes before they were complained of by the patient; it no doubt accompanies all tertiary lesions more or less, but I have noticed it most in connection with disease of the periosteum and bone. This *tertiary fever* is characterised especially by the peculiar, dirty, dry look it gives to the skin; and as a result of this, it seems to add ten years or more to the patient's age. A young man of twenty-five will look forty when thus affected; the pulse is quick, the tongue coated, and sleep in a great degree lost, from the nocturnal exacerbation of pain. When, under specific treatment, relief is obtained from pain, and the disease in the bone is checked, a marked change comes over the appearance of the patient, so much so, that students who carefully examined a case of this kind upon admission, have, after the lapse of a week or ten days, while fully remembering the *case*, failed to recognise the *patient*—he appeared to have grown ten years younger in the interval; this change in appearance being accompanied by a similar improvement in the sensations of the patient, his appetite and sleep having returned, and the nightly suffering subsided, although pressure on the affected portion of bone continued still to cause pain.

The same gummy matter which, when effused under the periosteum, forms the soft node, is also found deposited in the medullary

cavity of the long bones. Ricord* has related two cases in which he proved the occurrence of this—one in the tibia, the other in the radius and other bones. Of this latter case, he says :—

“The two radii, which had been the seat of violent osteocopic pains, presented at their lower extremities a remarkable hypertrophy. The right radius, for an inch and a half of its lower end, was so increased in size as to suggest the idea of an old fracture badly united. Upon an attentive examination, however, it was found that this hypertrophy was due to an enlargement of the canals of the bone. When a section was made, the bone was seen to be red, porous, and the medullary cavity filled with a yellowish substance, like lard. The left radius presented a similar enlargement, only to a greater extent.”

Such deposits, it is probable, are susceptible of absorption, and disappear under appropriate treatment, but sometimes are the first step to the production of caries and necrosis. Syphilitic *caries*, according to Babington,† commences at the cancellated tissue of the bone, and extends gradually through the compact tissue to the surface, when the periosteum becomes raised with a glairy fluid, which, being discharged, exposes the bone; in the centre of the exposed surface we find an opening leading into the carious interior of the bone. This form of caries is found frequently in the cranium, sometimes in the tibia, the lower jaw, or the ulna; when extensive, as it sometimes is in the cranium, it gives the bone a peculiar, worm-eaten appearance. Virchow has ably investigated the changes which take place in syphilitic caries. He describes a *dry caries*, which is commonly met with in the bones of the cranium, and often exists with nodes of the pericranium. It begins very insidiously, not showing itself until the peculiar changes which it effects in the bone are considerably advanced. These changes consist of two different kinds of morbid action—the one destructive, the other formative. Each spot of caries has a centre, where atrophy, or destruction of the osseous tissue, is going on, and round this a circumference where the bone is becoming thicker and denser.

* “Iconographie.”

† Hunter, by Babington, p. 505.

The central atrophy commences by an enlargement of the vascular canals of the bone, which are found at the part affected increased in size, their walls having become thinned, until the compact surface of the bone, losing its support, forms a depression; this depression has a peculiar stellate appearance, resembling the cicatrices which the mucous surfaces present after ulceration. The stellate depression increases in depth and circumference; sometimes a similar depression of the inner table takes place opposite the external one, and a perforation of the cranial vault ensues—the two meeting at their deepest part, like two cones joined at their apices. Whilst this destructive process is going on at the centre, an action of an opposite kind, one of growth or hypertrophy, is going on at the edge of the affected spot. At first the increase in thickness is formed by a thin vascular substance, which, however, very quickly ossifies, forming a thin layer, which becomes after a time like the original bone, only harder and more eburnated; this forms round the depression an irregular, raised border; this hypertrophy does not always stop here, but may extend a considerable distance, and affect the opposite surface of the bone as well. The cicatrix which results after this dry caries has ceased consists, according to Virchow, of a stellate depression, surrounded by a ridge of hypertrophied bone, which increases after all destructive action has terminated; if a perforation has taken place, as often occurs in the palate, and sometimes in the cranium, a thickened edge is formed round the opening, but the hole is not filled up with bone.

Necrosis of the cranial bones is described by Virchow as coming on, like caries, very slowly. A little bit of the surface of the bone dies, forming a thin polished sequestrum, which, from the holes perforating it, has a peculiar, worm-eaten appearance, while around and slightly raised above it is the serrated margin of the sound bone; similar spots of necrosis may form either at a distance, or close to the first, and in the latter case they may unite, and produce an extensive loss of the outer table of the skull. Necrosis of other bones, such as the nasal, usually results from the destruction of the mucous membrane, from which their vascular

supply is drawn, and may be considered rather as a result of syphilitic disease of the membrane, than as a direct effect of the poison.

Syphilitic disease of the bones sometimes extends to the contents of the cranium, and produces inflammation of the dura-mater and syphilitic deposit between it and the brain, and thus gives rise to the symptoms already described as arising from disease originally commencing in the brain or its membranes.* Necrosis and caries are but different degrees or modifications of the same morbid processes, and will be found existing together, as periostitis and ostitis do. From what has been said of the characters of syphilitic caries and necrosis, it will be seen that the distinctive difference which exists between them and caries and necrosis produced from scrofula, cancer, lupus, &c., is, in the first place, that they are *dry*—except under peculiar circumstances, no suppuration takes place; and they are accompanied by increase in the density and thickness of the surrounding bone, in which the exudation gradually ossifies. No such transformation occurs in other forms of caries or necrosis; in the cancerous a new material is indeed deposited, and in the scrofulous we find that a lowly organised lymph, prone to suppuration, is thrown down, but in neither case does ossification occur.

In these characters of syphilitic disease of bones, we have examples of the same pathological law which marks the disease in all its various manifestations, the consideration of which renders the idea that mercury can, under any circumstance, produce those morbid changes, entirely untenable.

The following cases illustrate the *combination* of various lesions found in the later stage of syphilis; and a perusal of them will show the grounds upon which a safe diagnosis may be made, under circumstances when the disease was not suspected by the patient, and could not be discovered from the history:—

Mary Donnelly, sixty years of age, a decrepid-looking old woman, came, supported on crutches, into the dispensary attached to the Adelaide

* Dr. Wilks, "Guy's Hospital Reports," vol. ix.; Mr. Richardson, *Dub. Hosp. Gaz.* 1856, p. 92.

Hospital, in February, 1861. She presented a note from a lady in the country, stating that she was anxious to obtain admission for this old woman into the hospital, until she could get her transferred to the Incurable Hospital at Donnybrook, as she understood that her case was quite hopeless; at the same time requesting me to examine her, to see if anything could be done for her. I accordingly admitted her into the hospital, and next day proceeded to make inquiry into the nature of her symptoms, which were as follows:—The right foot was turned so much inwards, as to compel her to walk upon the outside of it. Upon the dorsum, just in front of the ankle, there was a swelling, about the size of a walnut, of a purple colour, and fluctuating; the left foot was also somewhat turned in; just above the ankle, on the outside of the leg, there was a foul ulcer, about the size of a five-shilling piece; there were constant aching pains in both legs, which were worse at night; both tibiæ were very much enlarged, and felt rough and rugged as the finger was drawn along them. Her mouth was next examined; she could not protrude her tongue more than half an inch, on account of its swollen and indurated condition, particularly at its root; its upper surface presented a very remarkable appearance—it was deeply fissured and puckered, particularly in the centre, but was not ulcerated. Upon examining it with the finger, it was found to be very hard and tuberculated. The back of the pharynx and soft palate presented the smooth whitish appearance of mucous membrane which had been extensively ulcerated, and long since cicatrised. Her voice was husky, sometimes clear for a few words, and then suddenly failing altogether.

Two or three thick patches of psoriasis existed over her body, one close to the left shoulder, and the other near the elbow, on the same side. While examining this, I discovered that the upper end of the left ulna was the seat of an oval, rather painful, enlargement, while the lower extremity of the radius upon the right side was similarly affected.

The history threw no light whatever on the case; her husband had been dead many years; she had grown-up healthy children; she had had no miscarriages. Her present symptoms had been gradually extending for the last eight or nine years. She had been for two years in a county infirmary, and had been pronounced incurable.

Believing, however, that the syphilitic poison alone could produce the varied lesions here present, I did not hesitate to say that this old woman was not a fit subject for admittance to the Incurable Hospital, and to place her at once upon specific treatment, the result of which fully confirmed the diagnosis, for a steady improvement took place in all her

symptoms ; and at the end of four months and a half she left the hospital, well able to walk, speak, and do everything that an old woman of her age can usually do ; no longer, much to her own disgust, a candidate for admission to the Incurable Hospital.

In May, 1866, I was requested by my friend Dr. Head to examine a man then under his care, who was in the following state :—He was greatly emaciated ; his skin of an earthy sallow colour ; both his legs were permanently flexed at the knees, the left the most so ; he was thus completely crippled, and obliged to be carried if he moved from his bed. Upon his face, an ulcer, the size of a shilling, existed over the prominence of the right malar bone, its edges undermined, and surface smooth ; his tongue was red and shining ; his voice husky ; his hair thin and dry. At the left elbow, over the olecranon process, an abscess existed, the size of an orange ; from the middle of the forearm, on the same side, to the wrist, the skin presented numerous ulcers, with small red shining surfaces, and undermined edges ; through several of these necrosed bone could be detected with the probe, and through one a thin piece of dead bone was protruding. The fingers of the left hand were twisted to one side and crippled, the dorsum presenting similar ulcers to those on the forearm. The right hand was similarly affected, but to a less extent. There was a very painful soft swelling over the tubercle of the right tibia ; ulcers, like those on the arms, occupied both feet and ankles. His nights were sleepless, unless large opiates were taken ; fluid nourishment, in small quantities, was all he could take.

He had been in the army ; while in the Crimea, in 1855, he contracted a disease which he believed to have been gonorrhœa, but which was followed some months after by an eruption on his skin, and a severe inflammation of his left eye ; for four or five years after this he suffered almost constantly from pains in his bones, but in no other way. He then returned to this country, having obtained a pension and a comfortable situation, but very soon afterwards, now about three years ago, his present symptoms began to show themselves, commencing with severe and continued pain in the right shoulder, for which very active treatment had been employed, without affording any relief ; soon afterwards, ulcers broke out upon his feet and hands, and his legs became contracted ; he came to Dublin to ascertain if it were possible by any treatment to obtain some relief. The diagnosis that the syphilitic poison in this, as in the former case, was the cause of all the symptoms, having been made, a more hopeful prognosis was given than under other circumstances would have been

possible. His treatment having been arranged, he returned to the country, and placed himself under the care of my friend, Dr. Johnstone, of Westport, by whose able management of the case the diagnosis and prognosis given became fully verified. The patient improved steadily but very gradually; so that at length, in January, 1868, Dr. Johnstone was able to report—"He is now in robust health; has got quite fat; ulcers all healed; knees quite well; voice nearly natural; nodes have disappeared—and in fact he is a new man."

CHAPTER IX.

TREATMENT OF SYPHILIS.

HAVING studied the natural course of syphilis, and the numerous pathological changes produced by the poison during its prolonged residence in the system, we may now advantageously approach the important question of its treatment. Now, if ever, surgeons should be able to undertake the treatment of this formidable disease with confidence, having the accumulated experience of centuries on the one hand, to direct the conclusions derived from modern investigation on the other. It was the want of a knowledge of the natural course of the disease, which Colles and Carmichael lamented in their efforts to place the treatment upon a satisfactory basis: this knowledge we, to a great extent, now possess, and the treatment, as they foresaw, has become comparatively rational and simple.

An important question meets us at the outset; it is this—In undertaking the treatment of a case of syphilis, what should be our object? Should it be to eradicate the virus from the system, or simply to remove the symptoms which are present at the time? Experience of the effects of remedies unites with our knowledge of the nature and course of the disease in compelling us to reply, the latter—simply, but completely, to remove existing symptoms should be the object of our treatment. No direct medication will drive out the poison; but its natural elimination from the system will be much favoured by the removal of symptoms, and by careful attention to the general health. Bearing this in mind, we will insist upon such rules of hygiene as are required to maintain the vigour of the system, while we will employ the so-called specifics, with an intelli-

gent confidence, in what they are able to accomplish, viz., the removal of the effects of the poison.

This conclusion is further strengthened by the consideration of the class of diseases to which syphilis undoubtedly belongs. The educated physician no longer seeks to combat the poison of typhus, scarlatina, or small-pox, but watches the case closely; and as the effects of the poison show themselves, in the derangement of various organs, he interferes to relieve this or that symptom, while he continues to support the vital powers, and thus enables the oppressed system to pass safely through the natural course of the disease. The same principles hold good in syphilis; but, as already pointed out, syphilis differs from the fever group in one very important respect, viz., the time occupied in the production of its symptoms. The result of this chronic character of syphilis is, that the symptoms are of a more permanent kind: tissue-change occurs, not only damaging the functions of the part, but, as Virchow thinks, acting as deposits of syphilitic material, which keep up and renew the poison in the blood. This gives a much wider range to the treatment of symptoms in the case of syphilis than in that of acute fevers, and suggests the expectation, that the elimination of the poison itself from the system is thus indirectly much aided by the complete removal of symptoms.

Before entering upon the treatment of any case of syphilis, we must first study the patient himself, and then the stage to which the disease has advanced. The patient's constitution, his habits, and whether he is suffering from any other disease, must be ascertained, with a view not only to the kind or degree of treatment which will be advisable, but also for the purpose of adopting preparatory treatment, if necessary. The necessity of this in all cases was much insisted on by Colles, as well as by the surgeons of the previous century. We may be certain that the delay occasioned, in the first instance, by the adoption of suitable treatment to remove disorder of the digestive organs, or other derangement, will be amply compensated for by the subsequent satisfactory progress of the case. In addition to this, if we would successfully combat the

symptoms, we must first ascertain the stage to which the case has advanced. This must be done by the careful study of the group of symptoms themselves, and not by the time which has elapsed since infection; for so greatly does this time differ in different cases, that we would often form a most erroneous idea of the stage if we were guided by it, even if we could be certain of ascertaining it correctly, which we cannot. The importance of rightly determining the stage cannot be over-estimated, and is apparent from the consideration of the fact, that the lesions of each period vary as much in their therapeutical indications as they do in their anatomical and pathological characters; so that the medicine which is all-powerful in the early, is a poison in the later stages; and that which is efficient in the removal of the later, is inefficient as a remedy for the early symptoms.

The treatment of syphilis is, consequently, naturally divided into two parts:—1st, that suitable for the early, or first and second stages; 2ndly, that required for the later periods, or subdivisions of the tertiary stage. The important question of how far treatment can prevent or modify the development of the symptoms of the several stages, will naturally be considered with the first division of the subject.

In entering upon the consideration of the treatment of the early stages of syphilis, we must begin by examining the much-vexed question, viz., Whether syphilis should be treated with mercury or not; for all are agreed that if mercury be useful, it is pre-eminently in the earlier stages of the disease that it is so. The extraordinary influence of mercury in producing a remission of the early symptoms at least, must be admitted by all who have seen mercury given for syphilis; but its deteriorating influence upon the general health, the serious impairment of nutrition which sometimes follows its use, must also be admitted, and also that some even of the early symptoms occasionally increase instead of diminishing when it is employed; and finally, it has been urged, that although the secondary symptoms may disappear for a time, yet that tertiary symptoms are produced by it: so that the question still remains—Whether,

taking everything into account, mercury is, or is not, the best medicine we possess for the treatment of the earlier stages of syphilis.

This question demands a most careful examination: its satisfactory solution cannot rest upon the individual opinion of any man, no matter how extensive his experience may have been, but upon the accumulated experience of centuries, and upon the united voice of the profession at the present time. The student who endeavours to form his opinion upon this important practical point, by studying the works of the authors who have written on both sides of the question, will be puzzled to reconcile the uniform success which seems to follow the use of mercury, on the one hand, and the disastrous consequences which invariably result from its employment on the other. In order to arrive at a safe conclusion, it will be well first to glance at the history of this drug in connection with syphilis. Very early in the sixteenth, or end of the fifteenth, century, shortly after the first appearance of the disease, of which at least, we have any record, mercury was employed in the form of ointment, for the removal of the exanthematous eruption; it formed at first one of many ingredients of which a complex ointment was composed. The improvement in the symptoms which followed the use of this ointment was soon found to depend upon the mercury it contained, and powders containing the red oxide of mercury were given internally. The *red powder* of John de Vigo and the *angelic powder* of Nicolas Massa contained this salt. Mercurial fumigations began to be used about the same time. No doubt, it was supposed that a grand specific for all the terrible symptoms of the *morbus-gallicus* had been discovered, and mercury was freely employed. Very soon, however, the disastrous effects of excessive salivation caused a reaction, and, in 1517, we find mercury abandoned, the remedy being found worse than the disease, and a decoction of guaiacum much vaunted, while sarsaparilla and other woods were also extensively used. But by degrees mercury began to be again employed, and gradually re-asserted itself, until we find it, in the middle of the seventeenth century, holding the chief place again

amongst anti-syphilitic remedies, but secretly; a crowd of preparations being vaunted at this time as cures for syphilis, each prepared according to a secret formula by the doctor-chemist who prescribed it; but the active principle of all was the same—mercury. During the eighteenth century mercury was generally employed, either alone or in connection with sudorifics.

Hunter was an uncompromising advocate for the use of mercury, and complained that the perversity of human nature alone could account for the fickle manner in which this wonderful medicine had been treated. So great was his authority, that his mistaken doctrine of the identity of gonorrhœa and syphilis was almost universally received; and this, combined with a belief that mercury alone could check the course of syphilis, which if abandoned to itself would go on to the destruction of life, led to the most unhappy results. Mercury being not only given for all cases of gonorrhœa, as well as for venereal sores of both kinds, but with the idea of driving out the poison from the blood, was administered in such quantities as in many instances to bring about that destruction of life which it was given to prevent. Profound depression of the vital powers at the time, and serious impairment of nutrition for life, were frequent results, besides extensive ulceration of the mouth, and necrosis of the jaw from excessive salivation. In addition to the personal injuries to the patients so treated, a very serious obstacle to the advancement of truth was raised by the indiscriminate use of mercury; for the natural phenomena of the disease and the effects of mercury were confounded together, so that the symptoms which one author was describing as characteristic of syphilitic disease, another at the same time was explaining as the effects of the remedy.

Sir Astley Cooper raised an indignant protest against the abuse of mercury in Guy's and St. Thomas's Hospitals in his day, and early in the present century a vigorous reaction set in against the doctrines of Hunter. The anti-mercurialist school arose, who contended not only that the use of this medicine had been excessive and prejudicial, but that mercury was the cause of most of the

so-called syphilitic symptoms ; in fact, many of the secondary, and nearly all the tertiary symptoms, were transferred from the account of the virus to that of the drug. With more reason they maintained that syphilis would disappear without mercury, and adduced cases to prove that the disease ran a milder course, when treated without than with this medicine. Mr. Rose, Surgeon to the Coldstream Guards, instituted a series of experiments on the subject. For about two years he treated every soldier who came into the regimental hospital with any form of venereal disease without mercury. The results must have been surprising indeed, to those who believed in the deadly nature of all kinds of venereal, if unchecked by mercury. All the sores upon the organs of generation got well under the non-mercurial plan ; not only the sores healed, but the indurations, which were sometimes present, disappeared. Secondary symptoms appeared in about the same proportion of cases as they did when mercury was given, and some of them were slight, and some severe ; these also disappeared without the use of any mercury. Other surgeons soon followed Mr. Rose's practice ; and Mr. Carmichael of this city became the able leader of the anti-mercurialists. He exposed, with great vigour and ability, the disastrous consequences of the indiscriminate and excessive use of mercury, and proved by his practice that, as Mr. Rose had shown, it was quite possible for syphilis to get well without the use of this medicine ; but he by no means refused to employ it in cases which appeared to him suitable for it. He held that "mercury may be esteemed a powerful instrument in judicious hands, capable of effecting the greatest benefits ; but when wielded by the ignorant or injudicious, is equally capable of producing the most injurious inflictions."* Mr. Rose, after a time, returned to a cautious use of mercury in many cases, finding that his results were thus more satisfactory. His efforts, and those of Carmichael, did incalculable good ; for the confusion between the effects of the disease and the remedy began to disappear, and a discriminating, cautious use of mercury took the place of its previously reckless employment.

* Lectures, p. 166.

The profession of the present day holds no extreme views on this subject. Thanks to the labours of our predecessors, we can use this invaluable remedy without injury to our patient's constitution, while we are able thereby to control the symptoms of syphilis, and I believe aid in the elimination of the poison from his system.

To show the estimate in which mercury is now held, I will first quote the opinion of one of the ablest and most experienced surgeons of the present century, Sir Benjamin Brodie, and then the conclusion which the Venereal Committee has arrived at on this point. Sir B. Brodie says :—

“Experience proves to me, and I am sure it will prove to you also, that we have hitherto found no remedy having the same power of extinguishing the venereal poison as mercury. But then it must be judiciously administered at the time, and in such cases only as are proper for it, and without all this care it may do great harm.”*

The Committee reports that—

“The opinion of the Committee is unanimous in favour of mercury as the most efficient agent yet known in the treatment of constitutional syphilis. Mercury cannot be deemed a specific in the ordinary acceptance of that term, and does not appear to exercise any direct influence on the poison of syphilis, but on the effects of the poison only. . . . The advocates of mercurial treatment greatly preponderate amongst the witnesses, and we believe in the profession at large, and among them are included many who have tested the value of non-mercurial treatment, and who have returned to the use of the mineral after an impartial investigation into the relative value of each mode of treatment.”†

In the opinion thus expressed, I entirely concur; but yet I believe that a surgeon who abstained altogether from the use of mercury, treating syphilis by other medicines, and each case upon its own merits, would be a safer and better practitioner in the end, than he who, pursuing the subject no further than this conclusion, that mercury is the best remedy we possess for syphilis, goes forth to

* Works of the late Sir B. Brodie, vol. iii. p. 288.

† Report, ch. xviii.

administer it freely, attacking the disease indeed with a choice and powerful weapon, but often sorely wounding his patient by the unskilful use of it. The double inquiry, therefore—under what circumstances? and by what means should mercury be given? is of no less importance than that of the propriety of its administration at all.

1st. Under what circumstances should mercury be given, and when should it be withheld?

The study of the natural history and pathology of syphilis, guided by experience, enables us to answer this. We have seen that the prominent pathological feature of syphilis is the effusion of lymph into the tissues. This plastic effusion we found in the early stages of the disease to be generally firm, and showing no tendency to either ulceration or suppuration; but occasionally from the very commencement a tendency to ulceration is manifested, and to degeneration of the plastic effusion into pus; and in the later stages, we found the firm plastic lymph of the earlier period replaced by a softer and more lowly-organised material (gummy matter.) Now, mercury stimulates the absorption of plastic lymph, especially of syphilitic lymph, while it favours the formation of pus; and experience proves that its beneficial action is most marked in those cases in which a vigorous lymph is effused, and its ill effects most apparent in those cases in which the tendency to the formation of pus is best marked.

We have here, then, an indication for or against the use of mercury. In proportion as the symptoms are characterised by the effusion of a firm lymph, mercury will be useful; and in proportion as a tendency to suppuration appears it will be hurtful. We find the Venereal Committee thus recording the result of their inquiries upon this point:—

“It is prominently in evidence, and is confirmed by the experience of the Committee, that treatment by mercury is rarely expedient in any form of constitutional disease, (syphilis,) accompanied by pustules and rupial ulcerations, whether developed in the early stage of the disease, or reproduced at a later period.”

I quote this to support the general conclusion, that when sup-
puration is the prominent feature of the case, mercury is contra-
indicated, but I am convinced that no ready rule from the presence
of pustules or vesicles in the eruption ought to be made. I
believe this would lead to most erroneous practice ; for cases which
present these features are the severe cases—those which demand
efficient treatment to prevent serious complications and sequelæ ;
and we possess no treatment so efficient as mercury, when rightly
handled, to accomplish this. By what rule can we be guided then
in these difficult cases ? By the *general* pathological character
of the symptoms. Attentively examining the case, we will find
very frequently that while there is a large ulcerated chancre, yet it
has a very marked effusion of lymph around it ; and similarly,
while there are pustules found on the skin, yet that the base of
each is formed of a hard papule. Here then we must weigh well
the balance of the two tendencies. As a general rule, it will be
found that in the early stage the adhesive character predominates,
but the constitution of the patient will modify this ; and we must
be guided, in coming to a decision upon the proper line of treat-
ment for the primary or secondary symptoms, by a careful exami-
nation of these symptoms themselves. Thus, if the induration of
the chancre and inguinal glands be very marked and decided, and
ulceration also exists, we must take both into account ; and in the
secondary eruption, if distinct, hard papules exist, as well as pus-
tules, we must not omit, on account of the latter, to employ the
only treatment that will be efficient in removing the former ; but
on account of the suppurative tendency, very great caution will
be required in the manner and extent of the administration of
mercury.

The symptoms of the later stages are characterised by the effu-
sion of softer material, with a greater tendency to sloughing, than
the lymph of the first and second stages ; and therefore, as a general
law, mercury is unsuitable in the late, as it is required in the early
stages. So much for the indications derived from the pathological
character of the symptoms. The second indication is drawn from

the *mildness* or *severity* of the disease. Mercury may not be contra-indicated, but it may not be necessary. I have said, when referring to Diday's division of syphilis into *faible* and *forte*, that I believed this to be a true distinction ; it remains to consider the practice which he founds upon this division. Diday commences by maintaining the possibility of the spontaneous cure of syphilis, inasmuch as it is a poisoning of the system, not a *diathesis*, as it is frequently but erroneously called. He points out the essential differences which exist between such a diathesis as the rheumatic, the cancerous, or the phthisical, and syphilis ; these spring up spontaneously in the system ; syphilis never does ; these are hereditary only in the sense of the *tendency* to them being transmitted, not the disease itself, as is the case with syphilis ; finally, a diathesis is not contagious, syphilis is essentially so. Hence he concludes—" Syphilis is an intoxication, and is consequently spontaneously curable." He then proceeds to give positive proof of the cure of syphilis without treatment, and records eighteen cases, in none of which had any mercury whatever been taken, the absolute cure of which was ascertained by examination made a considerable time after the last syphilitic symptom had disappeared. The periods which had elapsed since the last symptom disappeared and before the case was pronounced cured, varied from three years and a half to sixteen years ; the particulars of these cases are recorded ; they are examples of the roseolar, or mild papular form of eruption ; they belong, in fact, to his division of *syphilis faible* ; for *syphilis forte* he finds mercurial treatment necessary ; and thus epitomises his rule of practice :—" A roseolar eruption—expectation ; a vesicular, scaly, or pustular eruption—mercury ; a papular—expectation, but with surveillance."

These opinions, and the practice founded upon them, accord in a very striking manner with the views advanced by Carmichael nearly forty years before, who maintained that the striking difference which existed between the mildness* and severity of the symptoms, should be followed by a corresponding difference in

* "Observations on the Venereal Disease," 1818, p. 11.

their treatment; that the papular eruption, with which he included the erythematous, or roseolar, would get well without any mercury; while the pustular and scaly varieties demanded mercury for their cure. The difference between these two great observers is a theoretic one: Carmichael accounting for the diversity of symptoms by the supposition of a plurality of poisons; while Diday, aided by the light of more modern investigation, refers it to secondary contagion. They agree in the facts observed, and in the treatment to be adopted.

From these observations, which have been fully corroborated by others, we conclude that mild cases of syphilis will recover spontaneously without the aid of any mercury or other medicine. Whether, however, it may or may not be advisable to give mercury in such cases will be considered immediately, when the treatment required for each set of symptoms is examined. The important fact that many cases *can* recover without any mercury, will often help us in deciding whether it ought or ought not to be given in a particular case.

Bearing in mind, then, the general indications—1st. That the effusion of a firm, hard, lymph deposit indicates the use of mercury, while a deposit which tends to suppuration or sloughing contra-indicates its employment; and 2ndly. That mild forms of syphilis get well spontaneously—we will find the decision of the treatment best suited for each set of symptoms much facilitated.

Treatment of the first stage.—When a well-marked induration exists around, or upon the site of, the chancre, with the accompanying induration of the neighbouring glands, I have no hesitation in recommending mercury, given gradually, but steadily, until all induration has disappeared. When we have the parchment induration, and a few hard almond-like glands, mercury will agree, and cause the healing of the chancres, and disappearance of the hard glands; but when this is accomplished, which may be done with a very small quantity, if properly managed, there is no further indication for its use. When the diagnosis is doubtful, we must wait, applying black-wash, or a weak solution of chloride of

lime to the sore, until the true characters of the chancre or chancroid sore show themselves. If inflammation and sloughing exist, even with undoubted syphilitic infection, no mercury should be given; the case must be treated for the gangrenous inflammation,* not for syphilis. When phagedenic ulceration is present, the same rule applies; there is every indication against the use of mercury; if the syphilitic virus be lodged in the part, it may disappear in the destruction of the tissues, or if absorbed, this is no time for treating it. If with an indurated chancre, we meet with a suppurating bubo, which occasionally happens, the indications are decidedly against any mercury being given. The condition of the patient is very unfavourable for its use, and there are no advantages to be gained, as the secondary stage will certainly appear, and then if mercury be required, it can be given with better effect from having been withheld previously.

The effect of mercury upon a well-marked indurated chancre is very remarkable, and gratifying to both patient and surgeon; the absorption taking place steadily, and evidently resulting from the effects of the remedy. Salivation is entirely unnecessary; the mercury should be introduced *gradually* into the system, whatever mode of administration be adopted; and when the chancre has healed, and the induration of it and the glands has disappeared, it is at once to be stopped; no further good can be obtained by its use. This leads to the inquiry, can mercury, given for the symptoms of the first stage, prevent or retard the development of those of the second stage? Ricord at one time maintained that if mercurial treatment in the first stage was pursued for a sufficiently long time, the diathesis, as he called it, would be destroyed, and no secondary symptoms appear. But experience compels us entirely to abandon the attempt thus to prevent secondaries. Diday† gives numerous cases in which this attempt was made perseveringly, and yet secondary symptoms appeared, in some while the patient was actually under the influence of mercury. Whether, however, the

* See page 46, &c.

† "Histoire Nat." p. 170.

timely removal of the primary symptoms may not in some cases aid the early disappearance of the disease, so that no further symptoms are produced, seems to be an open question. Surgeons who admit the essential difference between the two kinds of sores, are apt to doubt their own diagnosis, if they find a case which they considered one of infecting chancre, not followed by any further symptoms. But there is no doubt that cases not unfrequently occur, in which all the symptoms of the first stage of syphilis are present, and yet no secondary stage is reached; to suppose that these were all cases of mistaken chancroid sores appears most unreasonable.

Hutchinson, who denies the power of treatment in any way to prevent or retard future symptoms, admits that sometimes no further signs of the disease appear after the first stage is passed. If this occurs in some cases without any treatment, it is reasonable to suppose that in others, which would, if abandoned to their own course, have produced some mild secondary symptoms, mercurial treatment may, by removing the existing symptoms, induce a still earlier disappearance of the disease, so that no further signs of the poison will appear. Cases such as the following have probably occurred in the practice of most surgeons:—

A young man called upon me in January, 1867, with three or four soft sores; they were treated with nitric acid, and healed up. In about a fortnight, however, one of them, which had not quite healed, began to increase in size, and became surrounded by a well-marked induration, the glands at the same time being slightly enlarged, but not in the least tender. Mercurial inunction was commenced, and pursued until all hardness had disappeared and the sore had healed. The patient then went to the country for some months. I saw him on his return; no further symptoms had appeared, and he remains free from any up to the present time.

In March, 1867, a gentleman came from the country, where he had been told the sore he had recently discovered on the prepuce was syphilitic. He asked my opinion; so distinct was the parchment induration, that I had no hesitation in saying it was syphilitic, and mentally condemned him to not only the second, but perhaps to the tertiary stage as well, as he was a delicate man, who had been under my care before for other complaints. A mild mercurial inunction was recommended. He

carried this on only for about a week, when the induration having quite disappeared, all treatment was abandoned. I saw him lately ; no further syphilitic symptoms had ever appeared.

The true explanation of such cases appears to be that they are cases of mild syphilis, whose tendency to spontaneous disappearance was aided by timely mercurial treatment.

This conclusion is further supported by the fact, proved by Bassereau,* that the period of the appearance of erythema (mild syphilis) was considerably delayed by mercurial treatment, administered for the primary symptoms. Lee, Bazin, Gibert, and others maintain the same opinion ; and most of the witnesses examined before the Venereal Committee stated their belief that the mercurial treatment of the primary symptoms mitigated the severity, as well as postponed the appearance of the secondary eruption.

We may conclude, therefore, that mercurial treatment, adopted during the first stage, should have for its object simply the removal of the symptoms then existing ; that any attempt to prevent future symptoms, by a continuance of the treatment, after this has been accomplished, will be not only unsuccessful, but injurious. And that we may expect, in the milder forms of the disease, a postponement and mitigation of the secondary lesions ; and occasionally, under favourable circumstances, that their non-appearance will result from the complete removal of the primary symptoms by mercury.

The length of time required to accomplish the removal of the indurated chancre and glands, will depend upon the amount of the induration which may exist. In cases where only a slight parchment induration of the base of the chancre is present, and perhaps two or three almond-like glands in the groin, ten days of inunction will suffice to produce the healing of the chancre, and the complete removal of the indurations ; in severe cases three weeks are required to effect the same object. In all cases it is the *gradual* action of the medicine we want, not its rapid effects ; and consequently we must use the remedy in such a manner as to

* Bassereau, Op. Cit., page 176.

gain a steady effect on the induration, while the general health should not be in any degree injured. To accomplish this we must watch our patient closely, particularly at first, for individuals differ so much in the degree in which mercury affects them, that we cannot tell in the first instance whether the ordinary dose may not be too much in the particular case before us. We should begin, therefore, cautiously with small doses, and see the patient not later than the third day; there will usually be distinct diminution of the induration at the end of that time, and no effect on the mouth whatever, and ordinarily this will be the case for the remainder of the time; during which, however, we must continue to examine the mouth, at least every third day, and suspend the medicine if the gums show tenderness, or fœtor of the mouth appears; after a few days it may again be resumed, and no such effect will then be produced by its prolonged employment.

The habits and mode of life of the patient must be carefully attended to; entire restriction to the house, or departure from regular business employment is not necessary, but no excess of any kind must be permitted; regular and early hours, wholesome food in moderate quantity, with a little wine, porter, or beer in some cases, without any in others. The patient should be informed that upon the strict observance of these rules of healthy living depends the amount of success which the treatment will accomplish. That our object of removing his disease, with the least possible injury to his health, will be defeated if he will not follow our advice upon these points; and that neglect of these will certainly render the future symptoms worse, while the treatment will be less efficacious than it might be.

During the interval which elapses between the first and second stages, when the virus remains latent in the system, no direct treatment should be employed; it cannot reach the virus, there are no symptoms for it to remove; it consequently can only injure the patient by disturbing his digestion, and debilitating his system. The same rules, however, for regular living, and avoidance of any fatiguing exercise of mind or body which we recommended during

the first stage, should still be insisted upon, and the patient told to present himself for examination upon the appearance of any new symptom.

Treatment of the symptoms of the second stage.—When the premonitory symptoms of malaise, pains in the back and limbs, &c. appear ushering in the symptoms of the second stage, our treatment should be directed to relieve this state of fever by remedies most suitable for this purpose, mercurial treatment being postponed until the secondary symptoms have fully declared themselves. We must remember that this premonitory stage is that in which a peculiar chloro-æmia is apt to appear, particularly in women. Rest in bed, or confinement to the room, should be insisted upon. A mild aperient, if required, may be given, and diaphoretics prescribed; the best diaphoretic is the hot-air or Turkish bath, which gives marked relief during this stage; a vapour or lamp bath in the patient's room will answer nearly as well. Eight grains of Dover's powder at bed-time, or a diaphoretic anodyne draught* will relieve the fever or pain. If nocturnal pains are much complained of, and we find the bone or joint to which it is referred painful on pressure, we may prescribe the iodide of potassium in five grain doses with confidence; the superficial periostitis of this stage is almost immediately relieved by this medicine. Diday, who does not consider these pains arise from periostitis, yet remarks that "iodine given for two days will appease, as for five days will cure them."†

As soon as the eruption and its accompanying sore throat appear, we are in a position to judge of the mildness or severity of the disease, and to arrange our treatment accordingly. The milder cases, consisting of an erythematous eruption, with superficial ulceration of the fauces, and perhaps condylomata, will frequently get well spontaneously. It has been satisfactorily proved by Diday‡ that mercury is not necessary for the removal of these

* Liq. opii sed. gt. xvi.
 Aquæ ammon. acet. ℥jij.
 Mist. camph. ℥i.

Misce.

† "Hist. Nat." p. 100.
 ‡ Ibid. Lect. 3rd, p. 156.

symptoms, that they naturally tend to disappear of themselves after the lapse of a certain time ; but yet not unfrequently further symptoms subsequently appear, when they are thus left to their own course. Diday reserves mercurial treatment for cases of severe syphilis, (*variolo-forte*,) in which nature, unaided, seems unequal to the removal of the symptoms.

Mr. Hutchinson* gave no mercury for two years in all cases of secondary syphilis occurring in his hospital practice ; and states the result of this experiment was, he believes, simply a more prolonged illness ; but that it was neither more severe, nor more certainly followed by sequelæ than when mercury was given.

Compelled as we are to admit that mercury given for secondary symptoms cannot be relied upon to prevent the occurrence of tertiary lesions, but that its action is limited to those then present, or, as Ricord expresses it, "mercury causes the actual manifestations to disappear, but does not neutralize the diathesis"—admitting this, and admitting also that the milder cases tend to spontaneous recovery, we are led to inquire, are there any sufficient advantages to be gained by the administration of mercury to induce us generally to employ it during the secondary stage ? I believe the proper answer to this is an affirmative one, and might be thus expressed. Mercury, if so used as not to injure the general health, mitigates the severity and duration of the symptoms of the second stage so much, that its employment is, as a general rule, advisable in all such cases. Diday has indeed shown that the milder form of the disease tends to spontaneous recovery ; but his facts in no degree support the idea that the judicious use of mercury would not have much facilitated the recovery, which conclusion the experience of others directly supports. In mild cases, characterised by a roseolar eruption, slight erythematous sore throat, &c., a very gentle and gradual use of mercury will cause the eruption to disappear in considerably less time than the period occupied by it when no treatment is adopted ; for, as acknowledged by Diday, its natural course is to reappear upon change of temperature and

* Reynolds' "System of Medicine," vol. i. p. 308.

other slight causes, for months after its first appearance and subsidence. This advantage may be obtained without any injury being done to the general health, if the remedy be employed in a careful and discriminating way, and the case closely watched to prevent salivation taking place, the mercury being either altogether suspended or lessened in quantity upon the first sign of its effect on the mouth.

When the eruption is decidedly papular, we have a severer form of syphilis to deal with, and a more prolonged use of mercury will be required to gain the removal of the cutaneous eruption and the other symptoms which accompany it. This, however, may be done without the general health suffering in any way; frequently, indeed, the patient experiences a feeling of increased health and strength as the treatment goes on, the relief from syphilis being much greater than the lowering effects of mercury, if the latter has been judiciously administered—by which I mean, gradually introduced into the system, and carefully watched, to prevent undue action, which, in some systems, takes place suddenly, and when only a very small quantity has been taken. When entering upon the treatment of a case characterised by a papular eruption, with its accompanying sore throat, enlargement of glands, &c., we must bear in mind that iritis is in such cases no uncommon addition to the symptoms, and that the production of tertiary lesions is to be expected. A well-directed mercurial treatment will prevent the occurrence of the former, while, I believe, it will mitigate the severity, and postpone the appearance, of later symptoms. Iritis, no doubt, has frequently appeared while the system was under the influence of mercury, and the second eye has become attacked while salivation, brought on in the treatment of the first, was fully maintained; but salivation—that is, the poisonous effects of mercury upon the system—is a very different thing from the effects produced by the same medicine when so given as to act entirely upon the disease. I believe it may be so given as to tell upon the syphilitic lesions, while the system will scarcely feel its presence; or, on the other hand, poison the system, while it leaves the symptoms untouched, or rendered more

active and inveterate by the injury done to the general health. If, in a case of papular eruption, mercury be cautiously employed, so as not to affect the mouth, but to hasten the disappearance of the eruption, iritis will, I believe, be less likely to occur than if no treatment was adopted. And with regard to the production of tertiary lesions, while admitting freely the proofs advanced by Diday and others, that mercurial treatment in the second stage will not prevent them—for, as already stated, mercury does not appear to act upon the virus in any degree whatever, but simply upon its effects—yet if the removal of secondary lesions be accomplished without damage to the general health, the final elimination of the poison from the system is, no doubt, facilitated by the removal of so many depôts of syphilitic lymph, as every papule is, and consequently the likelihood of the production of tertiary lesions is lessened, and their severity mitigated, should they appear. The treatment, therefore, of a case characterised by papular eruptions has additional inducements to make both surgeon and patient cautious and persevering in its use; but the guide as to the length of time for which it should be employed is always the same, viz., the symptoms themselves; when these have completely disappeared, all has been done which mercurial treatment can accomplish—the further use of the medicine will only do injury. The length of time required to accomplish this will vary with the mildness or severity of the case: two to three months will generally be required, if the medicine be used as it ought to be, *i. e.* very gradually introduced into the system: as the natural course of the papular eruption is to disappear in about four months, we gain in time alone two to three months by the treatment; but this, as I have endeavoured to explain, is not all that we may hope for. If, through the impatience of the surgeon or of the patient himself, an attempt be made, by bringing the system quickly under the influence of mercury, to obtain a more rapid disappearance of the symptoms, the result is, that the mercury acts as a poison on the system, while the syphilitic symptoms, instead of disappearing, remain uninfluenced, or rather increase in severity.

A gentleman called upon me in February, 1867, exhibiting a well-marked papular syphilitic eruption, accompanied by a sore throat and falling out of the hair; his tongue was foul, his pulse quick and irritable. He said he was getting worse for the past week, for which time *his mouth had been sore*; his gums, upon examination, were found to be spongy, and his breath had the mercurial fœtor. He had, upon the first appearance of the eruption, consulted a surgeon, who had given him pills, which, in the course of a week, had made his mouth sore, but none of his symptoms had disappeared, and he felt very ill. It was some time before he was sufficiently recovered from the state of constitutional irritation which had been induced by the rapid introduction of mercury into his system, to admit of the treatment being commenced in a gradual manner, and the time which elapsed before the final disappearance of all secondary symptoms was longer than usual, being about five months.

The fact that the poison of syphilis acts slowly, and that consequently the remedy which we introduce into the system to counteract its effects must also act slowly, if we would gain any advantage from it, cannot be too strongly insisted upon. Special symptoms, no doubt, present themselves which demand special treatment; but I am now referring to the general treatment which should be adopted in the secondary stage of syphilis, more particularly when this is characterised by a papular eruption.

When the eruption is *pustular, vesicular, or bullous*, we have a more difficult case to deal with, and one in which treatment by mercury will sometimes be found inadvisable. I have already referred to this when speaking of the pathological indications for and against the use of mercury, and quoted the opinion of the Venereal Committee, who gave it as the result of the accumulated experience of those examined by them, that in such forms of eruption mercury was contra-indicated. Mr. Hutchinson differs from this conclusion,* and Diday, who gives no mercury in the milder forms of eruption, is accustomed to administer it in *ecthyma, rupia, &c.*, finding it necessary to combat the effect of the poison in *severe* cases, and experiencing no special ill effects from mercury in these forms of eruption. My own conviction, already expressed, is, that no

* Reynolds's "System of Medicine," p. 312.

ready rule, from the precise character of the eruption, can be made for or against the administration of mercury, but that, in cases characterised by fluid effusion, more than ordinary care must be taken, first, in examining the patient, to ascertain the state of his health previous to infection, and the extent to which the pustular or vesicular character of the eruption extends; and secondly, if the administration of mercury is determined on, in the way and extent to which it is given. If the patient's constitution appears to be naturally feeble, showing the signs of the strumous diathesis, we are not on this account to decide against mercury; such patients will suffer far less from a cautious use of mercury than from syphilis allowed to run its course untreated. Sir B. Brodie remarks:—"I believe that scrofulous persons, who really have syphilis, are best treated by mercury: if mercury be to them an evil, syphilis is a still greater evil."* Preparatory treatment of a tonic kind should not be omitted in such cases, and the administration of cod-liver oil and some of the preparations of iron may be continued while mercury is being used also. Drunkards, or persons who, without ever being drunk, habitually drink more than is fit for them, are much worse subjects for the administration of mercury than the strumous; such habits will, upon inquiry, be found very frequently associated with a pustular or vesicular eruption. It will be necessary, before commencing mercurial treatment in such cases, to institute preparatory measures to correct, as far as possible, the habits and condition of the system, and then to give the medicine with great caution, withdrawing it altogether for a few days if the first signs of salivation appear, and only resuming its use when these have entirely subsided. As soon as the eruption and other secondary symptoms have disappeared, mercury has done all the good it can do in hastening their removal, and its use should be suspended. Treatment should, however, be continued, with the view to counteract, as far as possible, the irritable and debilitated condition of the system, which has given rise to the pustular eruption, and which will favour the production of ter-

* Works, vol. iii. p. 289.

tiary symptoms. For this purpose, iron* should be prescribed, and change of air; travelling, if the season permit, to Switzerland, or wherever bracing mountain air, with moderate exercise and complete change of scene, can be obtained, will now be of service; but it must not be forgotten, when directing such treatment or answering the patient's queries, that the production of tertiary symptoms is, in such cases, all but a certainty: sooner or later some symptom will appear, showing that the tertiary stage has been entered upon. With this in view, our treatment will have the additional object of invigorating the system, so as to mitigate the extent and severity of future symptoms, and to aid the natural process of the elimination of the poison from the system before it becomes hopelessly incorporated with the tissues. Iodide of potassium, with sarsaparilla, is frequently prescribed with this object; but this invaluable medicine does not appear to me to exercise any eliminative influence on the poison—the time for its beneficial employment has not yet arrived. What is needed besides a tonic treatment, a plain and wholesome diet, and exercise in the open air, is something which, increasing the excretions, may thus aid the natural departure of the virus from the system. It is a well-known fact, that the residents in a tropical climate do not usually suffer severely from syphilis, and but seldom present tertiary lesions; travelling, therefore, at this period, when secondary symptoms have disappeared, in a tropical climate might be advantageously resorted to by the few who could accomplish it. In lieu of such travelling, we may employ the Turkish or hot-air bath with great advantage: in it we possess a safe and not unpleasant means of stimulating the secretions of the skin—much more than can be obtained by an ordinary warm-water bath: the kidneys may be kept active by the free drinking of cold water while in the bath. I have for some years employed it, not only after the secondary eruption has disappeared, but in conjunction with mercurial treatment while it existed, and have

* Tinct. ferri. Perchl. ℥iv.
Chloratis potassæ, ℥ii.
Aquæ, ad ℥viii.
℥i. ter in die.

found it aid the action of the remedy, while it invariably was agreeable to the patients, whose feelings of returning health seemed increased by it, and who invariably expressed themselves the better for it. If advising the use of the hot-air bath, in conjunction with tonic treatment, after severe secondary symptoms have subsided, it will be well to provide against any debilitating effects from excessive heat, by directing a moderate heat only to be employed, just sufficient to cause a general perspiration, which should not be kept up after it has been fully established, when the skin may be thoroughly washed; twice a week will be sufficient in all cases of this kind.

The treatment of syphilis in its second stage may thus be summed up:—When characterised by an erythematous eruption, mild mercurial course advisable, but not always necessary; when the eruption is papular, mercury more decidedly necessary, salivation objectionable—the use of the medicine to be persevered in until all traces of eruption have completely disappeared; when the eruption is pustular or vesicular, special caution is requisite in the employment of mercury, which, at the same time, is the only remedy we can depend upon to check the ravages of the disease. In all, when the symptoms of the second stage have disappeared, a tonic and eliminative plan of general treatment is indicated.

The question of *how* mercury should be given, is only second in importance to that of *when*. We have concluded that its use is generally advisable in the first and second stages of syphilis, and seen that the indications for its employment are all in favour of its *gradual* introduction into the system. In deciding, therefore, upon the best method to employ, we have to consider which of those offered to our choice affords us the means of introducing mercury into the system gradually, and at the same time gives us the most complete command over it, enabling us to increase or diminish its action at will, and finally and especially, that by which, while the symptoms of the disease are efficiently controlled, the general nutrition of the body is affected in the least possible degree. The different methods in use are—1st. The *internal* administration of

some of the preparations of mercury, either in pill or in solution. 2ndly. The *external* method, which may be carried out by the mercurial vapour bath or by inunction. To some experienced surgeons it seems a matter of indifference which of these methods is adopted, and they look upon the selection of one or other plan very much as a matter of taste or fancy upon the part of the surgeon who advocates it, considering that, so as the remedy is taken into the system, it is of little consequence how it is introduced. Experience has induced me to form a different opinion. It appears to me that the important conditions enunciated are fulfilled much better by the external than by the internal administration of mercury. When taken in through the skin, mercury acts more gently and gradually upon the symptoms than when given internally; it is also more manageable—its action can be increased or checked with the greatest nicety; and while it controls the symptoms quite as well as when given internally, it interferes with the general health very much less: it combines, in fact, a maximum action on the symptoms of syphilis with a minimum injury to the system. I refer more particularly to *inunction*, which is the method I usually employ, and of the advantages of which I can speak with confidence.

No doubt there are many cases in which the internal administration of mercury acts very well, producing the steady decline and final disappearance of all the symptoms, while the general health remains uninjured; but these are the exceptionally favourable cases which would do well under any plan, and from which we cannot draw any conclusion regarding the superiority of either method. Unfavourable cases are by no means rare, in which mercury given by the mouth disagrees, frequently causing salivation and great depression of the general health, while the syphilitic symptoms remain unaffected, or producing such irritation of the bowels as to necessitate its abandonment. It is just in such unfavourable cases that the advantages of inunction are most observable; there is no danger with this method of salivation coming on suddenly, with its attendant evils, not the least of which is the mortifying fact of the symptoms remaining after all the misery of the salivation has been

undergone; nor is there any danger of diarrhœa; upon the first symptoms of either, the inunction is stopped, these immediately subside, and the ointment is commenced again without a second time producing the same effects. No opium is required to prevent diarrhœa, and so the digestive organs are left unimpaired, and the stomach is free for the use of tonics or other medicines if indicated. Generally a marked improvement takes place in the appetite as well as in the appearance and feelings of the patient, after the treatment has been employed for some time; the relief from syphilis produced by the medicine showing itself in this way. It is unnecessary to quote cases to prove that mercurial ointment rubbed on the skin is capable of introducing mercury into the system, this will be admitted by all; the comparative merits of this, or of the internal use of the medicine is the question at issue. The late Mr. Colles relates several instances where he obtained the best results, in cases where syphilitic symptoms had obstinately continued after more than one salivation had been undergone, by rubbing in ten grains of strong mercurial ointment daily; the symptoms disappearing under this treatment when other means had failed.*

In a case related already, (page 219) in which a gentleman came to me with his mouth sore, his digestion much disordered, his nervous system very irritable, and his syphilitic symptoms increasing, a similar plan was adopted with the best results. An opiate for a few nights gave him rest, while chlorate of potash in infusion of Columba root was given internally for a few days. When the symptoms of salivation had disappeared, fifteen grains of ung. hyd. fort. was directed to be rubbed in daily. All the symptoms gradually subsided, while the general health improved very much.

I recommend the adoption of inunction as a general rule in the treatment of syphilis in its first and second stages, in preference to the internal administration of any preparation of mercury, from my own experience of the superior effects of the medicine when thus introduced into the system; but I make this recommendation

* Colles's Observations on the Venereal Diseases, p. 205, etc.

all the more confidently, finding it supported by the authority of some of the most experienced and able surgeons. Mr. Lee remarks:—

“By introducing mercury into a patient’s constitution by inunction, its deleterious effects upon internal organs is avoided. The amount absorbed into the blood produces its influence equally throughout the system, and is not conveyed direct to the liver, as when the medicine is administered internally.”*

Sir B. Brodie thus expresses his opinion:—

“You will find it very convenient to give mercury internally in the shape of pills, when you wish to affect the system rapidly, as, for example, in a case of iritis. In the slighter cases of syphilis, the disease may be cured very well by mercury exhibited internally. There are some patients so circumstanced that they cannot take it in any other manner. But if you ask me which is the best way of using mercury, when the symptoms of syphilis are not of the very mildest character, I must say that by inunction is infinitely to be preferred. Mercurial inunction is dirty, laborious, and troublesome, and it makes the matter public to the family in which the patient lives; for one or other of these reasons it will generally be unpleasant to him. But it has these advantages, it is much less liable to gripe or purge; it cures the disease a great deal better, and does not damage the constitution half so much as mercury taken by the mouth; nay, I will go so far as to say, that except in the slighter forms of the disease, you really cannot depend upon any other kind of mercurial treatment for the production of a cure. You may patch up the disease by giving the remedy internally, but it will return over and over again, and then you may cure it at last by a course of mercurial ointment properly rubbed in.”†

Professor Sigmund, of Vienna, after an extensive trial of other methods, prefers inunction to any other, claiming for it greater safety to the patient, and a more certain removal of the disease. I learn from my friend Dr. Selim M. Salaman, lately residing in Vienna, that Sigmund subjects his patients to a careful preparatory treatment, attending to any ulcers that may exist by local treatment, and slightly

* Lee, “Lectures,” p. 322.

† Works of the late Sir B. C. Brodie, vol. iii. p. 292.

reducing the quantity of food taken. He then directs one drachm of an ointment made of equal parts of the Austrian ung. hyd. fort. and ung. hid. mitius, to be rubbed in every morning; during the treatment he confines his patients to bed for ten or twelve hours out of the twenty-four. He maintains that by this treatment the patient is not only safely but expeditiously cured, the internal treatment taking one to two months more to completely remove the symptoms. The only objection to inunction is that mentioned by Sir B. Brodie, it is dirty and troublesome, and on this account it is almost always objected to by private patients. I have, however, invariably found that when I informed them that it was the best for the removal of the disease, and the safest for their constitution, that they readily and quickly agreed to carry it out. To obviate as far as possible their objections, and to insure its advantages, it becomes of great importance to attend to every detail of management.

The patient's diet and daily habits should in the first place be regulated; the former should consist of meat once daily, without any stimulants beyond beer or porter, sometimes better without any at all. He should keep regular and early hours, going to his bed not later than ten o'clock, and not rising before eight in the morning; during the day he may be engaged in business, if it be not of a laborious or exciting description. Half a drachm of the ung. hyd. fort. should be rubbed in each morning after breakfast, for twenty minutes or half an hour. The morning is the best time, because the patient is then most vigorous; and besides, if rubbed at night, the heat and perspiration produced by lying in bed will cause a considerable loss of the ointment, and the patient breathes an atmosphere loaded with mercury. Unless the full time mentioned be given to the rubbing, half the ointment will be inefficient. It is usually necessary to impress the importance of this upon the patient, who, however, in a very short time lends a willing aid to the surgeon, finding his symptoms disappearing gradually, and his general health and strength improving rather than decreasing.

The inside of the thigh and popliteal space is the region where the inunction can be best practised. The patient should be told to rub in upon each thigh upon alternate mornings, carefully washing off the old ointment with warm soap and water before commencing the new inunction; this prevents the skin becoming irritated, and mercurial eczema appearing; if, however, a few scattered pustules do appear, the rubbing should be transferred to the axillæ for a time. I am in the habit of directing the patient to take a hot-air or Turkish bath once or twice a week during the treatment, and find it not only preserves the skin from irritation by thoroughly cleansing it, but also facilitates the action of the mercury; patients, including those in hospital, always express a sense of comfort and relief from the use of the bath.

The effect of the treatment should be narrowly watched at first; if there is any symptom of the mouth becoming sore, the ointment should be omitted upon the alternate days for once or twice; when all sign of salivation has subsided, the full rubbing may be confidently resumed; no further tenderness of the gums will probably occur. Some patients prove so sensitive that fifteen grains of the ointment will be found enough; they have either been salivated previously, or are of a strumous, weak constitution. The length of time during which inunction is to be pursued, will vary, like any other method, according to the character of the symptoms. In some cases it will require to be steadily maintained for two months or more; the guide for its continuance is to be the total disappearance of all the symptoms, and this will not frequently take place much under that time. Sir B. Brodie recommends the use of the remedy for some time after the subsidence of the symptoms:—

“A man has an eruption of the body; it fades away under the use of mercury in the course of a month, but the remedy must be used as a prophylactic for another month.”

As there is no proof whatever that mercury has any action upon the virus itself, if no symptoms of the disease remain, it could not act as a prophylactic; but after the rash disappears, there are still usually some other symptoms present, such as indurated glands,

either in the groin, neck, or elsewhere. If the use of the remedy be stopped before these disappear, I believe a relapse of the rash or sore throat will soon follow, so that in general the full time, as mentioned by Sir B. Brodie, is required for satisfactory treatment of the case, and for preventing a return of the symptoms as far as can be.

We may now consider the other method of external treatment, viz., the *mercurial vapour bath*. This method of introducing mercury has been advocated specially by Mr. Langston Parker and Mr. Lee, as presenting the advantages of inunction without its drawbacks. It is in fact the old method of fumigation which has been in use since the beginning of the sixteenth century, extended so as to become a means not merely of local but of general treatment. The skin being soft and perspiring from the effects of a vapour bath, is then in a favourable state for absorbing the mercury which is deposited upon it in the form of a fine black powder. The apparatus now in use for the accomplishment of this, and which combines all that is requisite, is thus described by its inventor, Mr. Lee:—"It consists of a kind of tin case, containing a spirit-lamp. In the centre, immediately over the wick of the lamp, is a small circular tin plate, upon which the mercurial powder is placed. Around this is a circular depression, which is half filled with boiling water. The patient places this upon the ground, and sits over it or near it on a small cane stool. He is then enveloped, lamp and all, in a circular cloak, made for this purpose. When a cloak cannot be procured, a double blanket answers the purpose very well."

This is in fact an ordinary lamp bath, with a special arrangement for the flame of the lamp volatilising the salt of mercury. The patient, for about a quarter of an hour after he sits down is surrounded by steam, which produces the usual effects of a vapour bath, causing perspiration, and depositing water on the surface of the body. When the water in the pan has all boiled away, then the heat rises sufficiently to sublime the salt of mercury which lies on the central plate; so that it is in fact when the vapour bath

is over, and the skin is moist and perspiring, that the sublimed mercurial is deposited on it. The entire process occupies about twenty minutes; but the attendant should always carefully examine the apparatus to see that the mercury has all been driven off before taking the patient out, as a little more or less water in the pan, or the varying heat of the lamp, will produce a difference in the time when the heat will have risen sufficiently to do so, and until this has been done, nothing but a simple vapour bath has been taken. As soon as the mercurial salt has been entirely sublimed, the patient comes out of the bath, and goes into bed without wiping his skin, which is covered with a blackish deposit, which could be readily rubbed off.

Calomel appears to be the best salt of mercury to employ; it is recommended by Mr. Lee as being the most readily sublimed, and at the same time it is not decomposed by the heat; fifteen to twenty grains of calomel is sufficient for each bath. Mr. Parker recommends one to three drachms of the bisulphuret or binoxide of mercury, but the former of these gives off an irritating vapour, and the latter is of uncertain strength and composition. The advocates of this mode of treatment maintain that all the advantages which inunction offers are secured by it, while we get rid of the disagreeable rubbing of ointment by the substitution of an agreeable bath. Sir B. Brodie remarked upon its uncertain character; sometimes salivation was produced rapidly and severely; and again, no effect seemed to follow the treatment. These objections are said to be entirely removed by an improved apparatus, but in the trials I have made of it with Mr. Lee's apparatus, I have to make the same complaint; unless the cause of this uncertain action can be definitely pointed out and removed, it becomes a most serious objection to its general employment. But a still more serious objection is raised by Dr. M'Donnell,* who maintains that the action of the bath is not an external method at all, but an internal, for that no absorption whatever takes place of the sublimed calomel through the skin, and that the action of

* *Medical Press and Circular*, March 25, 1868, p. 261.

the medicine depends altogether upon the vapour being breathed by the patient. If this be so, the uncertain action complained of is explained. Dr. M'Donnell founds his denial of the absorption of calomel by the skin upon the fact, which he has repeatedly proved by experiment, that calomel dusted upon the skin to any extent, or rubbed on it in the form of ointment, will not salivate or affect the system in any way; the black substance which is deposited upon the skin by the calomel vapour bath, being calomel in the form of crystals, is a form ill adapted for cutaneous absorption. With regard to the bath itself, Dr. M'Donnell remarks—"I found that mercurialization did not follow even the very frequent use of the calomel vapour bath, provided the patient did not let his head into the vapour, and inhale the sublimated calomel."

Mr. Lee,* declining to go into the question whether calomel, as such, enters the skin, maintains, as a result of extensive experience, that the calomel vapour bath, when properly administered, produces all the therapeutic effects which either inunction or the internal use of mercury can accomplish. The great advantage which he claims for the calomel vapour bath is, that by its use we obtain the influence of mercury without irritating the internal organs or producing salivation. Admitting, that with a suitable apparatus, and when properly managed, the calomel vapour bath does produce a gentle and salutary mercurial influence on the system, the difficulty and trouble of having it so managed will prevent its general adoption as a means of treating syphilis, especially as we have in inunction, combined with the hot-air or vapour bath, a method for accomplishing the same object, equally safe, more efficient, more manageable, and far more generally applicable.

There are, however, special syphilitic lesions to which the mercurial vapour bath is admirably suited, as an adjunct to other treatment. The cases to which I refer belong to the tertiary stage, and the special use of the calomel vapour bath for them will be

* *Lancet*, July 25, 1868.

considered when the treatment of the symptoms of this stage are before us.

The *internal* administration of mercury is the method of giving the medicine most frequently adopted, both in these countries and on the Continent, for the treatment of the symptoms of the first and second stage. It possesses certain advantages which secure a preference for it both on the part of the patient and the surgeon; the former finds it readily and easily carried out, involving no trouble, and attracting no notice; the latter finds it make a decided impression on the symptoms in a very short time, and being preferred by the patient, he continues to recommend it. These advantages, however, are more than counteracted by the fact that mercury taken internally deteriorates the general health in all cases more than when introduced through the skin; in some, it disagrees so decidedly as to necessitate its withdrawal, and at the same time it does not act upon the symptoms in the continuous and steady way which the chronic nature of the disease demands.

Now, as the prospect of the disease ending with the second stage, or passing on to the long array of tertiary lesions, depends mainly upon the satisfactory and complete removal of the secondary symptoms, and at the same time upon the preservation of the patient's health and strength to the greatest possible extent, it follows that the internal use of mercury is not the best, although it may be the most convenient mode of treatment. No doubt there are many cases in which the objections now advanced do not exist; the patient being strong and vigorous, the syphilis mild, and the surgeon judicious, all will go on as well as possible; but this fortunate combination is not always or often to be expected. There is a considerable difference between the effects of different preparations of mercury given internally; the bichloride or biniodide given in solution, in very small doses, acts very gently, without interfering with the general health, and consequently is free from the objections I have raised; but in this form it is not sufficiently active for the first or second stages, but is invaluable in the treatment of many tertiary lesions.

The preparations of mercury usually employed in this country in the treatment of the symptoms of the early stages, are—Calomel, blue pill, the compound calomel, or Plummer's pill, and grey powder; a small quantity of opium must be combined with the two former to prevent diarrhœa. Blue pill, with a little watery extract of opium, forms a good combination—three grains of the former, with a quarter or half a grain of the latter, once daily, will be as safe internal mercurial treatment as possible; five grains of Plummer's pill may be given night and morning; gr. iii. of grey powder may be suitably combined with gr. iii. of Dover's powder. The proto-iodide of mercury is almost universally employed in France and on the Continent. Ricord, who first recommended it, gives it in i.-gr. doses twice a day. Bassereau reports that it very frequently produced excessive irritation of the bowels in his hands, and the same objection to its employment has been generally found to exist in this country. Sugar-coated granules of proto-iodide, containing one-fifth of a grain in each, afford a convenient and agreeable mode of administering this salt. Iron* or quinine may at times be advantageously combined with some of the preparations of mercury—they all are specially indicated when marked symptoms of anœmia show themselves at the commencement of the secondary period, which is very frequently the case in women. Bumstead remarks, that he is led by observation to believe that the addition of quinine renders mercury less liable to salivate; in this way it may become a very valuable auxiliary in the internal use of mercury in syphilis.

Sponginess of the gums is usually the earliest sign of impending salivation; when fœtor of the breath is perceived it is further advanced, and the treatment should at once be checked. In some constitutions, however, although this be done, yet the swelling of the glands and secretion of saliva increases rapidly, accompanied by a profound depression of the vital powers; the state of the mouth

* R. Pil. hyd. gr. xxv.
Sulph. ferri. sic. gr. x.
Ext. opii. aquos. gr. v.
M. divide in pil. x.

R. Hyd. c. creta. gr. xx.
Sulph. quiniæ, gr. xx.
Ext. opii. aquos. gr. iii.
M. divide in pil. x.

prevents nourishment being taken, and thus starvation adds to the irritable and depressed state of the system. In spite of well-directed treatment, salivation, when allowed to proceed so far, very often goes on; a copious and constant flow of saliva is established, the swollen and coated tongue projects from the lips, ulceration of the gums follows, and sometimes necrosis of the alveolar border of the maxillary bones.

If called upon to treat a patient suffering from salivation, we should, in the first instance, give a saline purgative, if the bowels are not already too free, with the object of removing any mercury which might be still in the intestines; this should be immediately followed by a full opiate; as much strong beef-tea, egg-flip, and other fluid nutriment as the patient can swallow, should be taken. Chlorate of potash internally, in doses of twelve or fifteen grains, three or four times a day, with a chlorinated soda gargle, will be of use to the ulcerated mucous membrane, which subsequently will be stimulated to heal by daily brushing with a strong solution of nitrate of silver.

In addition to the general mercurial treatment required for the first and second periods of syphilis, special treatment is demanded for certain symptoms, which very frequently present themselves during the second stage. The most important of these is *iritis*. As soon as the earliest symptom of inflammation of the eye is perceived, a special treatment must at once be adopted, for irretrievable damage to vision will result if the lymph shed in the delicate tissues of the eye be permitted to become organised. The first thing to be done is to dilate the iris, by means of a solution of atropia dropped into the eye, or extract of belladonna spread round it; simultaneously with this we place the patient upon small doses of calomel, combined with opium, and give this very frequently, so as to bring the influence of the drug to bear in the shortest possible time upon the effused lymph. As first pointed out by Professor Law, the quickest way of affecting the system with mercury is to give small doses very frequently, half a grain of calomel every hour will, before the lapse of twenty-four hours, make the gums tender. This

is, no doubt, the best way to proceed in syphilitic iritis, which quickly yields to the specific action of mercury, but, as Mr. Hamilton points out, does not require the abstraction of blood, either by cupping or leeching. If the disease has been taken in time, the lymph will be so completely re-absorbed that the function of the iris will be quite restored; but if, as frequently happens, some delay has occurred in the discovery or treatment of iritis, then adhesions will probably have formed, and changes in the choroid coat taken place, which will, to a greater or less extent, interfere with vision permanently. As soon as the eye is safe, the special treatment should be omitted, and, after a few days of rest, to observe the effects of this upon the system, the former plan of gradual treatment should be recommenced, for the removal of the other symptoms. Iritis sometimes relapses; for such cases Mr. Hugh Carmichael's treatment—by oil of turpentine—is well calculated to be of service; I have used it with benefit in such. The dose is, a drachm of the oil of turpentine three times a-day, suspended in mucilage or almond emulsion, with about thirty grains of carbonate of soda to the eight-ounce mixture, to prevent heartburn. Sometimes iritis of the second eye commences while the system is still under the influence of mercury administered for the cure of the first: in such a case, the turpentine mixture is a valuable help.

Syphilitic iritis is an acute inflammation, and must, for the sake of preserving the use of the eye, be promptly met by the use of mercury, given so as to affect the system as rapidly as possible; and the very objections raised to the adoption of the internal use of mercury, as the best general method, render it much the fittest mode in the treatment of this special lesion; and the certainty and precision with which mercury thus used will, in twenty-four or thirty-six hours, begin to tell upon the effused lymph, the absorption of which goes rapidly on before us as we watch it from day to day, are as interesting to the surgeon as advantageous to the patient. But the other syphilitic symptoms are no better for the mercury thus administered, while the condition of the system is

much deteriorated, and the regular treatment suitable for the second period is consequently much interfered with; so that the occurrence of iritis must always be considered as serious, not only as affecting the safety of an important organ, but also as interfering with the proper treatment of the other symptoms, and thus increasing the probability of tertiary lesions.

Condylomata yield readily to local treatment, which should never be omitted, as, although they disappear when mercury begins to affect the other symptoms, yet they are a most disagreeable addition to them, and can be quickly and safely got rid of by local means in a few days. If condylomata alone exist, as frequently happens—for they often recur after the other symptoms of the secondary period have disappeared—nothing but local treatment is required: any mercurial preparation applied upon the surface of the mucous-patch causes its disappearance in a few days; a piece of lint, soaked in the sediment of *black-wash*, if kept carefully applied to the part, answers very well; it should be renewed two or three times a-day. If the condylomata are old and hardened, they may require something more than black-wash; *calomel*, dusted on the surface of the patch, will then be found efficacious; the application of nitrate of silver hastens their disappearance. Ricord's treatment consists in washing them twice a-day with a solution of chlorinated soda, then sprinkling them with calomel, and keeping the opposed surfaces separated with a piece of lint. An ointment, composed of ℥ii. of calomel, ℥ii. of sulphate of zinc and ℥i. of lard, is highly recommended. When situated in the mouth or throat, they may be treated with nitrate of silver, and fumigated with calomel; if on the lips, the ointment just mentioned can be applied. Along with the local treatment, frequent washing must be insisted upon, for the secretion of mucous-patches is sometimes very abundant, peculiarly offensive, and highly contagious: every time the dressing is changed, which should be three times a-day, the part must be thoroughly washed with water, chloride of lime, chlorinated soda, or permanganate of potash lotion.

The special treatment required for *secondary ulceration of the throat* is, the free application to it of a solution of nitrate of silver, (gr. xxx. or gr. xl. to ℥i. of distilled water;) this should be applied freely over the velum and back of the pharynx every day, or every second day, while any ulceration or redness continues. The same solution used with Clarke's spray-producer, acts very well, being well applied over the entire mucous lining of the mouth by this means. When the mucous membrane of the larynx is similarly affected, as shown by a certain degree of loss of voice, the spray will be of use, being then drawn down into the larynx by the patient making a sudden inspiration while it is being directed into the mouth, or, by means of a curved directing tube to the apparatus, it may be introduced more directly into the larynx. A few applications of this kind will usually suffice to remove the symptoms of the aphthous ulceration of the throat or larynx; but if, towards the close of the secondary period, sore-throat re-appears, as it often does, it then does not yield so rapidly, and it will be necessary to prescribe the following mixture, which will quickly cause it to heal:—

R. Iodidi. potassii, gr. xl.
Chloratis potassæ, gr. lxxx.
Aquæ, ad. ℥viii.
M. ℥i. ter in die.

CHAPTER X.

TREATMENT OF SYPHILIS CONTINUED—TERTIARY LESIONS.

THE indications for treatment when syphilis has entered on its tertiary stage are the same as those which guide us in dealing with secondary symptoms; they are, to meet the symptoms as they appear, to confine our treatment to the removal of each lesion, but, as far as possible, to do this *completely*. As the long array of syphilitic symptoms which appear during the tertiary period all arise from the deposition of syphilitic lymph, or gummy deposit, in the various tissues, they all will, to some extent, yield to the same kind of treatment; but peculiarities, arising from the nature of the tissue affected, as well as from the functions of the parts implicated, render a separate consideration of each essential to a clear understanding of the subject. This is more especially the case, as mercury begins to lose something of its remarkable powers over the symptoms of syphilis when the tertiary period has been entered upon; and as time advances, and different tissues become affected, its injurious effects upon the general health become more marked, while its influence on the morbid deposit becomes less, so that it can no longer be relied upon. When, however, mercury begins to fail us, iodide of potassium comes in, and exerts an influence upon the late symptoms fully equal to that which mercury does upon the earlier; and inasmuch as the tertiary deposits are those which more directly imperil the health and life of the patient, this medicine holds fully as important a place in the treatment of syphilis as mercury itself; but the question of when we should employ one of them and when the other, with the greatest advantage to our patient, can only be decided by a careful study of each particular lesion. I propose, therefore, in the first place, considering the general thera-

peutical indications of the tertiary period, and then subsequently taking up the treatment of each individual lesion.

The tertiary period, we have seen, presents symptoms which sometimes are characterised by the deposit of a firm, contractile lymph, and sometimes by the deposit of a softer material—gummy matter—which latter tends rather to slough than to harden and contract; hence a division was made of the symptoms into those which usually showed the one or the other form of deposit. This pathological distinction forms, I believe, a valuable guide to treatment; whenever the deposit is formed of hard, contractile lymph, then mercury will be all-powerful in causing its absorption; but when it is soft, and with a tendency to slough, it will not be useful, and therefore more or less injurious. This general indication will be modified by special circumstances of the health and habits of the patient, as well as by the nature of the particular lesion we are called upon to treat; but, as a *general indication*, I believe it may be relied upon. Iodide of potassium, on the other hand, has but little influence upon the hard, lymphy deposits, while upon that of the second division of the tertiary stage its power is very marked; so that the *general indication* for its employment is when the lesion is characterised by the presence of the soft, gummy deposit. But as these two forms of deposit occur sometimes in the same tissue, and at the same time, we will be called upon to employ one or other, or both medicines, according to the predominance of either pathological character. To the general indication thus afforded by the character of the deposit, we will have in each particular case the guide of experience as to the effect of mercury or iodide of potassium in lesions of that tissue or organ. Before entering upon the examination of the separate lesions, it will be well to turn our attention for a little to the remedy which now holds undisputed sway over the later symptoms of syphilis.

Iodide of potassium is a modern remedy for the effects of syphilis: we first hear of its employment, as an anti-syphilitic, in 1822, in Italy, but it was not until 1837 that it became at all known; in that year the late Mr. Wallace, of this city, drew the attention of

the profession to its valuable properties, and to this surgeon is fairly due the credit of one of the most important therapeutical discoveries of modern times, the benefits derived from which cannot be over-estimated; they far surpass the best results obtained by the most skilful operative proceedings, for these are required but occasionally, and performed by the few, while the beneficial influence of iodide of potassium is experienced by multitudes, and can be properly directed by every practitioner who knows anything of his art. Irish surgeons may refer with justifiable pride to the accurate and practical observations of Colles, to the original views of Carmichael—anticipating, to a great extent, some of Diday's most important conclusions—and to the observations of Wallace upon iodide of potassium, whereby the valuable properties of this substance, in procuring the absorption of syphilitic deposits, were, for the first time, brought to the knowledge of the profession.

Iodide of potassium, immediately after its introduction by Wallace, began to be extensively used in the treatment of all forms of syphilis, and in every period of the disease, when, as might be expected, much difference of opinion arose regarding its use, some finding it invaluable, others almost inert, until Ricord's investigations led him to the conclusion that it was comparatively of little value in the early stages, while for the later symptoms it was an excellent and invaluable remedy. These conclusions have been amply confirmed by subsequent observation. Ricord seems to consider iodide of potassium holds precisely the same relation to the later that mercury does to the earlier symptoms: in this most English and American authors differ from him, holding that permanent relief is not obtained by iodide of potassium unless accompanied or followed by mercury. It appears probable, however, that there is no real difference between the action of mercury and iodide of potassium: both act directly upon the symptoms, neither act upon the poison, except indirectly through the symptoms. The symptoms which the iodide removes so rapidly, return again indeed, but so do those removed by mercury, or other symptoms take their place, showing the presence of the virus in the system still. Mr.

Acton remarks, when describing the influence of iodide of potassium :—" It will often produce only a modification and mitigation of the symptoms, without completely eradicating the diathesis. Beyond this neither mercury nor iodine will act."

Iodide of potassium has been supposed by some to owe its influence over syphilitic symptoms to a power claimed for it of combining with, and rendering soluble, and consequently active, salts of mercury which were lying inert in the tissues. This theory, apparently the result of the belief that nothing but mercury could ever remove syphilitic lesions, is readily disposed of by the fact, that in cases where no mercury has ever been taken, the iodide is just as efficacious in the removal of the symptoms for which it is suited as in those where mercury has been given ; some of the symptoms which are relieved most readily by the use of the iodide, relapse quickly when it is omitted, so that its prolonged use is required. Patients finding relief to their sufferings as long as they continue to take it, go on with it habitually as part of their daily food, and thus great quantities of the salt are introduced into the system ; it is an important fact, that no deterioration of the general health ensues from this, such as mercury produces. It is probable that as long as syphilitic lesions exist upon which the drug acts, that nothing but relief is felt ; but when its therapeutical action is not called out, it excites a physiological action, which sometimes produces unpleasant effects, which seldom interfere with its use as a remedy, but with which it is necessary to be familiar, that we may trace them to their true cause when we meet with them. The most frequently noticed of the effects of the iodide is irritation of some part of the mucous membranes or skin. Some patients very soon after commencing the use of the iodide of potassium, complain of a *cold in the head*, accompanied with headache and swelling and redness of the conjunctivæ ; occasionally the mucous lining of the fauces and glottis are also affected, producing pain in deglutition, and hoarseness. *Salivation*, as far as an increased flow of saliva, is also sometimes produced, but there is no inflammation of the glands or ulceration of the gums, such as mercury causes ; all these symptoms,

too, are very transitory—they subside almost immediately when the iodide is stopped.

Gastric irritation is not uncommonly produced, evidenced by loss of appetite, pain in the epigastrium, and a red tip to the tongue. Patients who habitually suffer in this way should, previously to taking the iodide, have counter-irritation over the epigastrium; their diet should be carefully regulated, and if necessary ten grains of subnitrate of bismuth three times a day should be given for a day or two. Then the iodide may be given in small doses, and in a few days increased to the full quantity required, the dose being dissolved in twice the usual quantity of fluid, or the patient may, when taking the medicine, be directed to drink freely of soda-water or other diluent.

Various *eruptions on the skin* are produced by iodide of potassium—erythema of a vivid red colour, sometimes occupying only portions, occasionally the whole surface, is the most frequent. Generally part of the eruption is of the papular form, or this may exist without erythema; it is of a very red colour, which disappears on pressure; most frequently it is seen on the abdomen and lower extremities. These eruptions appear without any constitutional disturbance, and subside quickly when the use of the iodide is discontinued.

A tuberculo-pustular form and an eczematous variety are also described, but are evidently very rare. Mr. Langston Parker has described a condition of the tongue closely resembling that produced by syphilitic tubercles, which he believes is caused by the long-continued use of iodine. It consists in a hard tubercular condition of the organ, which becomes cracked and fissured; the only proof offered of its origin is, that it is said to disappear when the iodide is discontinued. Loss of vision, apparently resulting from effusion behind the retina, has in some instances been referred to the action of the iodide. It has been asserted that atrophy of the breasts and testicles is also produced by iodide of potassium, but this has been distinctly disproved by Ricord.

In addition to these effects upon the skin and mucous membranes,

iodide of potassium sometimes produces a group of symptoms known as *iodism*, by which the nervous system expresses the poisonous effect produced upon it by iodine ; the symptoms consist of a sense of oppression in the head, tinnitus aurium, twitching of the muscles, loss of voluntary motion to some extent, and pain of a neuralgic character. These symptoms are very rarely produced by iodide of potassium given for syphilis, and when they are, they quickly disappear when the medicine is discontinued ; they do not appear to be more frequent when large doses are given ; and we know that this medicine may be, and certainly is, taken in large quantities, and for a great length of time, without producing any such results. Bumstead mentions the case of an old man who used to attend the New York Eye Infirmary, who for a length of time was in the habit of buying iodide of potassium for himself, and taking as much as an ounce every day. This he continued from time to time as his symptoms demanded, but gradually reduced the dose to the comparatively small one of half a drachm per diem.

The quantity of iodide of potassium which may be taken without producing any of the unpleasant effects enumerated, must not be estimated for the syphilitic patient by that which is found to produce them in others ; for there can be no doubt that iodism, &c. would soon have been produced in such cases as that related by Bumstead, were it not that the action of the remedy was spent upon the syphilitic symptoms ; consequently the dose which should be given of the iodide will vary with the nature and duration of the lesions for the removal of which it is prescribed. It has been customary to prescribe it in these countries in three or five-grain doses three times a day, and in many syphilitic cases this answers remarkably well ; but in others, where the symptoms have been of long continuance, and where the deposit is extensive, much larger doses are required, and will be borne not only with impunity, but with the greatest advantage. Ricord gives ten grains three times a day in most cases, and states that he has obtained results with these doses which half the quantity has failed to produce, although used for a long time. Other French surgeons have given still larger doses,

M. Puche prescribing as much as an ounce and a half in the day ; but no corresponding advantages seem to follow such a lavish employment of the remedy. I have for many years employed iodide of potassium in eight or ten grain doses three times a day, with, I believe, more decided benefit than could be obtained with the ordinary small doses, especially in cases where the tertiary deposit was of long standing, such as existed in the two cases detailed at the end of the last chapter. Sometimes, after taking twenty to thirty grains in the day for some weeks with perfect impunity, the patient will begin to complain of gastric irritation ; the dose may then be lessened, and if necessary again to increase it, it should be diluted with two or three ounces of water, which will prevent irritation of the stomach ; in all cases it is well to give it in a diluted form. A salt of ammonia added to the solution seems to increase the activity of the iodide, so that muriate of ammonia, being very soluble, is frequently combined with it ; both may be given dissolved in infusion of cinchona bark or sarsaparilla. A convenient method for those who require to take the iodide for a length of time is to dissolve a sufficient quantity of it in tincture of bark, so that a teaspoonful in a wineglassful of water may be taken as a dose.*

Many cases, particularly those belonging to the first division of the tertiary stage, are most benefited by a combination of mercury and iodide of potassium ; this can conveniently be managed by dissolving the bichloride or biniodide of mercury with the iodide in either water, or infusion of bark, or sarsaparilla—the liquid extract of the latter being a convenient form in which to employ it. One grain of bichloride or biniodide of mercury, properly dissolved, may be added to a twelve-ounce mixture of the iodide, and an ounce given three times a day immediately *after meals*, as thus its irritating effects on the mucous membranes of the stomach and bowels

* R. Iod. potassii, ℥iv.
Muriat. ammoniæ, ℥ii.
Tinct. cinchonæ, ℥iv.

Take a teaspoonful in a wineglassful of water three times a day.

will be avoided. In some cases it may be well to begin with a smaller dose, viz., the one-sixteenth of a grain ; but I have found the one-twelfth, in cases suited for its employment, agree remarkably well. Sometimes I have found it necessary to employ a larger dose than this, and have given as much as the one-sixth of a grain of the biniodide three times a day with marked benefit to the symptoms, and without any ill effects, when the smaller dose had failed to give relief.

Several other medicines besides mercury and iodide of potassium have enjoyed for a time the reputation of anti-syphilitics, and some of them are employed at the present day in combination with them, and are supposed by some to have a beneficial influence of their own on the symptoms. Amongst them *sarsaparilla* has for centuries enjoyed the chief reputation in complicated tertiary cases. Where a number of remedies have been administered, both separately and in combination, for years, it is impossible to say with certainty what the special benefit derived from each may be ; and so *sarsaparilla* has been supposed by some to possess valuable powers, which in the hands of others it has entirely failed to show, and has by many been suspected of being quite inert as far as the syphilitic symptoms are concerned, although as a light vegetable tonic it may have been of service to the digestive organs. Professor Sigmund, of Vienna, has submitted the question of its usefulness to careful trial, and finds as a result of repeated and extensive employment of it, that *sarsaparilla* is, when given by itself, entirely inefficacious to influence the syphilitic symptoms in the slightest degree.* *Zitman's* decoction, which enjoys a high reputation in Germany, Sigmund found quite as useful when the *sarsaparilla* which it contains was left out ; its efficacy depends upon a small quantity of mercury held in solution.

Nitric acid was at one time much relied on in the late stages ; it was given with decoction of cinchona bark ; ℥ii. of the dilute acid of the British Pharmacopœia may be given in ℥viii. of the decoction, or better in ℥xvi. of the infusion of cinchona bark ; an eighth

* *Sydenham Soc. Year Book*, 1861, p. 137.

of this to be taken two or three times daily. It is certainly a valuable medicine in the latest stages, when the general health has suffered a good deal, and may advantageously be employed in such; although not acting specially upon any of the symptoms, it will prepare the way for other treatment. Carmichael employed decoctions of guaiacum wood as well as sarsaparilla; also extract of cicuta, and the nitro-muriatic acid bath in the pustular and tubercular eruptions, and Dover's powder and antimonials in the early stage, when feverish symptoms existed.

Bromide of potassium has latterly been a good deal employed in the treatment of tertiary syphilis, some authors recommending it as if its action was similar to that of the iodide, for which it might be at times substituted. So far as we are acquainted with the action of the bromide, it appears to be a valuable *sedative*, specially upon the system of vaso-moter nerves, but it does not appear to possess in any degree whatever the peculiar power which the iodide shows in effecting the absorption of syphilitic tertiary effusion. The bromide may be employed as an adjunct in many cases of tertiary syphilis, when the nervous system is more or less involved, to procure a sedative effect, but can never replace the iodide, nor be depended upon to assist it in removing the effusion; the therapeutic action of the two salts appears as totally dissimilar as those of any two medicines can well be.

Chlorate of potash has also been vaunted as possessing special powers useful in the treatment of syphilis. I have employed it, I think with advantage, in cases where the vital powers were low, in combination with the iodide, and as a gargle for ulcerated mouth and throat; but its action should not be confounded with that of the iodide, from which it appears to be totally distinct; it not only possesses no influence over syphilitic effusions, but its own proper action as an oxygenator will not, I believe, be perceived so well in the syphilitic as in others, being overborne by the effects of the poison, with which it is not able to cope.

Change of air, or sometimes a sea voyage, will occasionally do more than specific treatment; this happens when syphilis, occur-

ring in a patient of strumous constitution, or of a highly nervous temperament, has produced symptoms of great nervous prostration, with inability to take food, while at the same time the symptoms of syphilitic poisoning are not particularly severe ; cases, in fact, in which the amount of constitutional debility is out of all proportion to the extent of syphilitic disease. Now, while in such cases we prescribe small doses of iodide of potassium and cinchona bark, we will do well at once to recommend a change to the country if the patient be living in town, or better still, a sea voyage. I have known this last succeed when the most carefully conducted treatment, combined with the best country air and diet, seemed to be useless.

Having examined the general indications for the treatment of the tertiary lesions, and reviewed the means at our disposal for meeting these indications, we may now examine each group of symptoms produced by the deposition of syphilitic lymph in the various organs and tissues, and inquire which of the two medicines, mercury or iodide of potassium, has been found by experience most suitable in each, or what combination of them and of other means the special circumstances of each may render necessary. The tertiary stage is not unfrequently ushered in by a *dry tubercular eruption*, for the removal of this iodide of potassium is of very little use ; mercury alone can accomplish our object, and even with its aid we will find it a very obstinate symptom. Mercury may be suitably employed in such cases either in solution or by inunction. The bichloride or biniodide may be taken in doses of a twelfth of a grain for a length of time without producing salivation, or deranging the digestive organs. I prefer the latter salt, finding it less irritating to the bowels ; in some cases, when the tubercles are large, and the patient is strong and healthy, I have found it necessary to increase the dose beyond that named, but ordinarily the twelfth of a grain will be found enough. If the case was one presenting a dry tubercular eruption without any other symptom, I would recommend the biniodide solution, with three grains of iodide of potassium in each dose ; but if with the eruption there appeared, as is frequently the case, nodes or other later symptoms,

it would be right then to add six or eight grains of the iodide to obtain the benefit of its action at the same time. When first prescribed, the treatment must be closely watched to ascertain that the dose is suitable to the individual, producing neither any tenderness of the gums nor irritation of the bowels; subsequently when arranged so as to agree, it must be steadily continued for a considerable time, two to three months or more being generally required to remove the eruption completely from all parts. The medicine may during this time be occasionally suspended for a little, but it will be found necessary very soon to resume it, as new spots will begin to appear: when at length the tubercles finally disappear, the patient will be fatter, more healthy-looking, and as free from any symptom of salivation as before the treatment began. When a dry and tubercular eruption appears in a young and vigorous man, and has spread over a considerable part of the surface, it will be better to treat him by inunction than by the biniodide, as we can increase the mercurial action of the remedy when employing inunction to any extent which is desirable, without deranging the digestion in the least. The biniodide mixture in such cases is not sufficiently active; inunction will, if used cautiously, act quite as safely and more expeditiously in removing the tubercles. Fifteen grains of the strong ointment once a day is enough to begin with; and when the susceptibility of the patient has been tested in this way for a week or two, the quantity can be increased to thirty grains once a day, which will be sufficient in all cases of this kind. When the tubercles are disappearing, I have kept up the action of the remedy quite sufficiently by the inunction of fifteen grains every second day.

Ulcerating tubercles do not require and will not bear the same amount of mercurial treatment as the dry form, and yet they will not yield to any other treatment at all as well. The bichloride or biniodide mixture here answers perfectly, a twelfth of a grain being combined with three of iodide of potassium in each dose; this must be steadily persevered with, being taken twice a day after meals, until all trace of the eruption has disappeared. A patch of

ulcerating syphilitic tubercles is not unfrequently mistaken for lupus, and subjected to various forms of local irritation and constitutional treatment, which only aggravate the disease, and torment and disappoint the patient; when, the true character of the disease being recognised, the bichloride mixture is given, the rebellious ulceration at once acknowledges the power of the medicine, and to the delight of the patient commences to heal steadily. These cases are greatly benefited by the mercurial vapour-bath, and if carefully managed might be entirely treated by this method. It combines the local application of mercury to the diseased surface with its general effect on the system; and remembering that syphilis in its tertiary stage is becoming more *local* in its action, the local treatment should not be neglected: so that, if the bath could not be obtained in an efficient manner, we should direct mercurial fumigation to be practised upon each ulcerating patch; this will facilitate the healing process, aiding the action of the bichloride internally, and rendering unnecessary its employment for so long a time as must be otherwise required.

A *scaly* eruption is but rarely met with, and when seen, usually forms only one of many tertiary syphilitic lesions, as in the case of Mary Donnelly, already related (page 196.) In such cases, the treatment which the most urgent symptoms demand must be resorted to, and under this the eruption will gradually decline. The eruption itself would, I have no doubt, yield most readily to the same treatment which is found to suit best when a dry tubercular eruption is present, viz. inunction, or the biniodide of mercury in solution—gently, but perseveringly, employed.

Following the order observed when describing the pathology and symptoms of the various tertiary lesions, we pass from the treatment of eruptions on the skin to that of affections of the *mucous membranes*, and in doing so we pass from mercury to iodide of potassium. Experience has proved to me, that in all tertiary affections of the mucous surfaces, iodide of potassium is much preferable to mercury in any form; no matter how administered, mercury does not affect the lesions of the mucous-membranes in the same favourable

manner in which it does those of the skin, and it is calculated to do decided injury if employed for sore-throat which arises from the softening of gummy deposit beneath the mucous-membrane, commonly called sloughing or phagedenic sore-throat.* Indeed, I have found all forms of tertiary ulceration in the mouth and throat the worse for mercury; on the other hand, the action of iodide of potassium is most satisfactory: the three different† forms of deposit in the tongue all yield to its influence—the slighter kinds quickly, the contracted indurated form slowly, while the two kinds of ulceration of the tonsils and pharynx both acknowledge its influence at once. The relief which quickly follows from the distressing cough and difficult deglutition consequent upon the sloughing tertiary sore-throat, when full doses of the iodide are given, clearly proves its remarkable power in these cases. The local application of nitrate of silver will be useful in the tertiary as in the secondary affections of the throat, and its use should not be omitted. A chlorate of potash gargle may be used with advantage, and the same salt may be added to the mixture containing the iodide; (ʒii. to an ʒviii. mixture;) but local cannot take the place of general treatment by iodide of potassium in any case.

Arguing from the manifest influence this medicine exercises over ulceration and deposit in the mouth and throat, we may employ it also with confidence when the symptoms point to the rarer disease of the mucous membrane of the œsophagus, stomach, intestines, or rectum.

The larynx presents two distinct forms of tertiary deposit, (page 178,) one consisting of firm lymph, which is succeeded by contraction; the other by gummy-matter, which sloughs; the latter of these, as in the similar affection of the pharynx, will yield to full doses of the iodide; the former will require a cautious use of mercury for its removal. It will sometimes be impossible to tell which of these forms of deposit exist; under these circumstances we must take into account the other symptoms present at the time, also the character of those which may have previously existed, the constitu-

* See page 135.

† See page 134.

tion of the patient, and the length of time the poison has been in the system. If these lead to the inference that the softer form of deposit exists, we may begin with the iodide ; and if, after a few days' trial, no decisive relief follows, we must change to the biniodide mixture. Sometimes the disease is allowed to produce such extreme dyspnœa before the case is seen that the performance of tracheotomy is rendered necessary to save life. Cases are on record that prove the possibility of syphilitic laryngitis thus proving fatal if an opening below the obstruction be not promptly made ; but it is only in such extreme cases that the operation is justifiable, as, if there is time for its action, iodide of potassium will succeed in removing the obstruction sufficiently to permit respiration to be carried on. Sometimes, however, after tracheotomy, the patient, although treated with mercury or iodide of potassium, fails to regain sufficient respiration through the larynx, and is obliged to breathe through the tube for the rest of his days. A case of this kind occurred under the care of the late Mr. Hutton, in the Richmond Hospital, some years ago, and others are recorded.*

Syphilitic orchitis, in its ordinary form of a firm, smooth, fibrous enlargement of the testicle, demands the action of mercury ; if the the deposit is not removed, atrophy of the gland-substance follows, and we cannot depend upon the iodide to accomplish its removal. When the exceptional form of orchitis exists, (page 141,) which is produced by the effusion of a soft lymph, which tends to slough, and consequently to the production of lipoma, then iodide of potassium is more indicated, and will be found of decided service, while mercury would disagree ; except in these cases, however, which are comparatively rare, mercury should be employed for syphilitic sarcocele ; it may be used locally in the following manner :—3i. of the strong ointment having been spread on a piece of lint large enough to envelop it, the diseased gland is to be surrounded by it, and over this it is to be firmly strapped with strong soap plaster ; we thus have mercurial action combined with pressure acting upon the deposit. This, in some cases, will be sufficient, without any other

* *British Medical Journal*, September 5th, 1868, p. 252.

treatment; it should be renewed every third or fourth day, when the decline in size, hardness, &c., of the gland can be noted. If it is not advancing satisfactorily, then these means should be supplemented by the internal use of the biniodide of mercury mixture, the twelfth of a grain being combined with three grains of iodide of potassium; this should be carried on until all hardness has disappeared. When orchitis forms only one of many symptoms, then, in addition to whatever general treatment the most prominent lesions demand, the testicle should have the mercurial strapping, as a special stimulus to the absorption of the deposit in it.

In considering the treatment of *syphilitic disease of internal organs*, we must found our opinion of the character of the deposit, in any particular case, partly upon the known character which it has been most generally found to present in the organ under examination, and partly upon the character of the accompanying external symptoms; as these are found to belong to the first or second divisions of the tertiary stage, we may infer that the internal lesions are of a similar kind; this, however, is not always the case, and we must never leave out of consideration the ascertained pathological character of the deposit in the particular organ then under examination.

When the symptoms point to the *liver* as the seat of syphilitic deposit, we may conclude that we have to deal with a firm, fibrous effusion, as this is its usual character, whether it be diffused or circumscribed; consequently mercurial treatment is indicated. If, however, there exist with the signs of hepatic disease other symptoms decidedly belonging to the second division of the tertiary stage, we must withhold mercurial treatment, or, at least, combine iodide of potassium with small doses of the bichloride or biniodide of mercury. An ointment may be rubbed over the abdomen, to aid the action of the combined medicines internally, consisting of two parts of ung. iod. potass. and one part of ung. hyd. fort. Clinical experience proves that such treatment has been of very great service in causing the removal of the deposit, and consequent restoration

of the organ to its proper size and unimpeded functions ; in proof of which the following may be quoted :—*

“B——, thirty-four years of age, the son of healthy parents, had syphilis about ten years before he came under observation. He was then greatly emaciated ; the skin was dry, rough, and of a yellowish colour ; there was some œdema of the extremities ; there was cough, with some expectoration, and dyspnœa, but no physical sign of disease of the chest. The abdomen was enormously increased in volume, and the patient complained of alternating diarrhœa and constipation ; palpation gave the sensation as if the intestines were all matted together with false membranes. The right lobe of the liver could be felt below the umbilicus ; it appeared unequal on the surface ; the left lobe was comparatively but little enlarged. The spleen could be felt much enlarged, projecting beneath the left costal cartilages. The urine contained no albumen. During the night the patient was kept awake with headache, and he was sleepy and heavy during the day ; latterly his memory had been much failing ; he could do nothing, not even write a letter. The diagnosis arrived at was, syphilitic disease of the liver and spleen, with adherence of the peritoneum. The patient was placed upon a gentle mercurial treatment, and the abdomen rubbed with iodide of potassium ointment. Diarrhœa coming on, the mercury had to be changed for syrup of the iodide of iron for a time, and when he had gained a little in strength and appetite, the mercurial preparation was again resorted to. This was continued then steadily for three months, when the patient was decidedly better ; the liver and spleen had undergone a manifest diminution in volume, the digestion was good, and the patient was gaining strength daily. After some months, during which improvement went on, a node appeared on the forehead the size of a pigeon's egg, accompanied by nocturnal pains : iodide of potassium was then prescribed, with immediate benefit. The liver was then found to be only two fingers' breadth below the ribs, while the spleen was much less voluminous than formerly ; the whole abdomen was soft and pliable.”

No doubt, deposit in the liver, when it does not attain a large size, or press upon the ducts, causing jaundice, or upon the vena-porta, causing ascites, will generally escape detection ; when, however, it does produce these symptoms, we have an opportunity of testing the influence of treatment, and, so far as experience has as

* Lancereaux, Op. Cit. p. 364.

yet gone, the effects of a mild mercurial treatment, or a mixed treatment by mercury and iodide of potassium, are most encouraging, while in some cachectic cases iodide of potassium alone has been followed by diminution in the size of the enlarged liver, and a great improvement in health.

From the similarity which exists between the pathological character of syphilitic deposit in the *kidneys* and that occurring in the liver, we would expect the same line of treatment would be found useful in both; and such has been the case in instances reported by Lancereaux and others, in which the albumenuria steadily diminished under a mixed treatment by mercury and iodide of potassium, while iodide of potassium alone has succeeded* in removing all albumen from the urine in other cases, and in restoring the patient to health and vigour, who, before treatment was commenced, appeared condemned to the usual fatal career of chronic Bright's disease. Whether the kidney thus relieved is permanently freed from the effects of the disease or not, is not yet fully proved.

Syphilitic disease of the *lung*, we have seen, (page 150,) presents two distinct varieties—one, in which the deposit is firm, and diffused through a portion of the lung, produces a kind of hepatization—syphilitic-pneumonia; the other, in which it is more circumscribed, subsequently softens, and forms a cavity—syphilitic-phthisis. In the former of these, mercury has proved beneficial; in the latter, iodide of potassium alone is suitable, and produces marked benefit if the disease has not advanced too far before it is given to be of service; but it must be given in large doses—not less than ten or twelve grains three times a-day will be of much use. The following striking example of its beneficial action in syphilitic-phthisis has been lately recorded:—†

“A gentleman, aged forty, had been under the care of a surgeon for syphilis, and was sent to Dr. Wilks for chest disease. He was in a miserably cachectic condition, and had most of the symptoms of consumption.

* Eade, three cases, *Lond. Med. Rev.* September, 1861; Wade, *Medical Times and Gazette*, July, 1864.

† *The Practitioner*, July, 1868, p. 54.

He had, however, coppery blotches on his face, and his palate presented a foul ulcer, with denuded bone. He was given fifteen grains of the iodide and two grains of quinine three times a-day : at the end of the first month he showed signs of improvement, and at the end of the second month he had become much better ; the throat was well, and the auscultation signs greatly improved. Dr. Wilks states that he believes this case was ultimately completely cured."

The diagnosis of syphilitic deposit in the lung having been made, it will not be difficult to determine as to whether mercury or iodide of potassium should be given ; the physical signs, if any are present, will point out if the deposit is hard and dry, or softening down and forming a cavity ; and, on the other hand, the general condition of the patient, and the accompanying syphilitic symptoms, will point out whether he is in a state in which mercury would be likely to agree, or one in which tonic treatment is indicated, with iodide of potassium.

When the *nervous centres* are the seat of syphilitic deposit, serious symptoms are produced, involving loss of motive-power, loss of mind, and ultimately loss of life. These symptoms, which, if produced by any other cause, would be hopeless, may, if arising from a syphilitic origin, be not only checked in their destructive career, but completely recovered from. Clinical experience, which, in the case of the brain, has been more extensive and more conclusive than regards the lungs or liver, has now satisfactorily proved that epilepsy, paralysis, and mania, when produced by syphilitic disease, may be completely and permanently cured. That such is frequently not the case appears to arise chiefly from the deposit having existed so long as to have produced change of structure in the nervous substance itself ; so that an essential point in the prognosis of any case is, that proper treatment should be begun at such an early period that the brain has as yet only suffered from the irritation produced by the presence of the morbid matter, and not itself become softened and disorganized.

We have seen, when considering the pathology of syphilitic disease of the brain, (page 153,) that the effusion which pressed upon

the nervous substance, and thus gave rise to the symptoms, was usually of a firm, fibrous character, very frequently in immediate connection with the dura-mater; but seldom has anything like the gummy matter characteristic of the second division of the tertiary stage been noticed. This general pathological character must be borne in mind when considering whether treatment by mercury or by iodide of potassium is most suitable in such cases. In judging of the probable character of the effusion in any particular case, we must take into account the accompanying symptoms: if we have epilepsy, or other sign of cerebral complication, coming on with a secondary or early tertiary eruption, the probability of the effusion which produces it being a firm lymph connected with the dura-mater, is very great; on the other hand, if extensive disease of the bones of the cranium have already existed some time before the cerebral symptoms appeared, we have reason to suspect that the effusion, if not in immediate connection with, is at least of the same character as that which exists in the bone. In the former case mercury, in the latter iodide of potassium, will be indicated. In doubtful cases, the fact of the character of the effusion being generally that of firm lymph, should influence our choice of mercury, in conjunction, at least, with the iodide, as the treatment most likely to completely remove it. Experience corroborates the conclusions drawn from pathology: many cases are now on record where all the symptoms have disappeared under the use of iodide of potassium alone; but it will be found, on the other hand, that the most remarkable and complete recoveries have taken place under treatment by mercury—in several instances iodide of potassium had failed to give relief, when mercury succeeded in doing so. In Reade's first case,* in which extensive paralysis existed, complete recovery followed the use of mercury; in his second case, iodide of potassium had given partial relief, when the symptoms returned more violently than before, and mercury was used with success; and in his third case, the iodide had failed to check the return of epilepsy, which mercury succeeded in doing. The following

* *Dublin Quarterly Journal*, Feb. 1852.

interesting case, lately under my own observation, still further illustrates this :—

The symptoms, when the patient was first seen, (detailed at page 159,) were partial hemiplegia of left side; ptosis of left eyelid; divergent strabismus of left eye; almost complete loss of vision, with fixed and dilated pupils in both eyes; loss of hearing in left side; occasional severe headache, and confusion of thought, with loss of memory; the accompanying signs of syphilitic disease being an indurated tongue, a perforation in the hard palate, and a discharge from the nose of an offensive character, indicating the existence of diseased bone still in this cavity. In consultation with Dr. Hudson, it was agreed, considering the evidences which existed in the disease of bone and the induration of the tongue, that the latest stage had been entered upon, and that iodide of potassium in full doses was the treatment in this case most indicated. Accordingly the patient was placed upon eight grains of the iodide three times a day, combined with chlorate of potash, careful directions being given for his general management, and his friends took him to the country, and there carried out the treatment for a fortnight; at the end of which time, however, he appeared to them to be worse, and was complaining loudly himself of the agonizing pain in his head; he consequently returned to town. Upon examination, I found his symptoms increased in intensity; the hemiplegia was more complete; the mental aberration more marked; the condition of the eyes quite as bad as before; while pain in the head was more complained of, and there was greater distress and anxiety of countenance than had existed before. While all these symptoms were worse, and had evidently gone on uninfluenced by the treatment, the induration of the tongue, true to the rule of the influence of the iodide over it, was decidedly better. Before commencing mercurial treatment in this case, which now appeared the only one likely to arrest the progress of the intra-cranial mischief, I had again the advantage of a consultation with Dr. Hudson, who agreed that mercury held out the only prospect of relief, and suggested that inunction should be employed. Accordingly half a drachm of ung. hyd. fort. was rubbed in each morning, the patient being confined to bed. In a few days his headache was decidedly relieved, his appetite became very great, so that it was necessary to limit carefully the quantity of food allowed, as he seemed never satisfied; his mind was never collected for more than two or three minutes at a time, during which he would answer questions about himself rationally, but he then quickly wandered off again, talking of places and persons by wrong

names, and in a quite irrelevant way. He lay for the first week or ten days of the treatment sleeping constantly, waking up to ask for food, and lying down again to sleep heavily. At the end of this time he began to show more animation, and it was observed that when he stood up he did so with more steadiness than before; and soon he got up, and made his way out of his room, under some delusion, but he walked firmly and well.

From this time a very gradual improvement took place in all his symptoms; an increase in sight followed the disappearance of the hemiplegia; the eyes could be moved better, but still the ptosis completely concealed the left eye; and his mental condition, although all pain and drowsiness had entirely gone, remained as clouded as ever. In about six weeks after the commencement of the inunction, his gums began to be a little tender, the ointment was then discontinued; his left eyelid at this time was raised a little; day by day he gained more power over the levator muscle; his appetite remained remarkably good all along. After a few days, during which he took bark mixture only, he was placed upon the biniodide mixture, with eight grains of iodide of potassium and a twelfth of a grain of the biniodide in each dose; at the same time a blister was opened upon the back of his neck, and kept there for a week or more, and subsequently replaced by small blisters behind the ears. From this time his recovery was more rapid; the mental faculties were the slowest to return, but very gradually he gained in this respect also; when he left for the country, which he did after about ten weeks of treatment, he still had difficulty in collecting his thoughts, or remembering the names of people or things. Since this time I am informed that he has quite regained his customary state of mind, and power of thinking and speaking, as well as of the other functions which were in abeyance; his hearing in the left side still remaining a little dull. He is able to take active exercise without fatigue. The axis of the two eyes remained somewhat divergent for a long time after the ptosis had disappeared, and consequently his sight was double, and he found it impossible to read or distinguish objects clearly unless he closed the left eye. Very gradually, and after all his other symptoms had disappeared, the eyes regained their parallelism. He was placed upon iodide of potassium alone when he left for the country, and his improvement continued under this, which at first had failed to do him good.

Although too short a time has elapsed in this case since the removal of the symptoms to permit us to found any argument

upon it regarding the permanence of the cure, yet the improvement obtained was sufficiently striking and complete to prove that recovery from so serious a group of symptoms, when they are produced by syphilitic inter-cranial deposit, may be anticipated ; and further, that the gradual action of mercury is the efficient means for producing the absorption of the effusion, iodide of potassium having proved inefficient for this, although the other lesions present seemed to indicate its use, and acknowledged its power.

In the following case the symptoms were different ; probably the effusion was situated further back about the base of the brain and medulla oblongata, but the same plan of treatment succeeded :—

R. N., a cabinet-maker, thirty-six years of age, had been occasionally under treatment for several years for syphilitic periostitis and ostitis. I had invariably given him full doses of iodide of potassium for these symptoms, with the greatest benefit. He called upon me in the month of June of the present year, and said he had a constant feeling of confusion and weight in his head, and that some time previously he had staggered in the street and nearly fallen from the same feeling. He had a dull, heavy look ; was very drowsy and sleepy ; no pain over the head on pressure ; his tongue was foul, and his bowels confined. I ordered purgative medicine, to be followed by the iodide of potassium mixture, and directed him to return in a few days. A week or so after this I was requested to visit him at his own house, where he was said to be in a dying state. Dr. Gogarty, of Blessington-street, who was in attendance upon him, informed me that he had found him upon the previous day in a comatose state, with dilated pupils, which were insensible to light, and with inability to move the right arm ; the head had been shaved, a blister to the back of the neck applied, and the bowels opened with a calomel purge. Upon examination, we found him lying in a semi-comatose condition ; he answered no question, but put out his tongue when asked to do so ; both pupils were dilated and insensible to light ; he moved heavily in the bed, but was unable to raise the right arm ; he raised his left hand constantly to his head, as if it was the seat of pain ; his face wore an expression of pain and confusion ; his skin had a muddy, dusky look. Treatment by mercurial inunction was recommended, and carefully carried out by Dr. Gogarty ; ℥i. of strong mercurial ointment was rubbed in daily for about three weeks, when his mouth became a little sore ; it was then suspended, and renewed in a few days in half drachm quantities,

and continued in this manner for about three weeks more, without any further effect on the mouth being produced. Dr. Gogarty reports that as the treatment was carried out, a gradual improvement took place in his state. At the end of six or seven weeks he was able to go to the country, his speech being quite restored, his memory and other mental faculties apparently were as good as before the attack, all pain in the head and inability to use his arms having previously disappeared.

In Dr. Duncan's cases,* in which mania was the most prominent symptom, mercurial treatment produced very great improvement, although epileptic fits had in one case existed for seven years, and the patient was emaciated to an extreme degree with diseased bone in various situations. One grain of blue pill, combined with quinine, was given at first only once a day: a steady improvement took place, so that finally the patient left the asylum, able to resume the ordinary employments of life.

Cases such as I have detailed prove that the treatment of syphilitic disease of the brain is not that most suitable for the latest sequelæ,† but rather that which is required by the disease at an earlier period; the frequent appearance of a firm lymph in the effusion, classes syphilitic disease of the nervous system amongst the earlier tertiary symptoms, and experience shows that the most efficient treatment is, as a general rule, that which suits these best. As, however, the effused matter shows sometimes the gummy character, so iodide of potassium will sometimes be able alone to remove the symptoms. I believe in some cases mercury is absolutely necessary; in many it is advisable as the most efficient means; while in others, iodide of potassium is quite sufficient. In cases of partial paralysis, in which probably the effusion has been but slight, it sometimes acts remarkably well, as in the following case, recorded by Dr. Jackson:—‡

“The patient was admitted for partial paralysis of the right arm. He could move it, but in the effort to grasp, he could do little more than close his hand. He had also pain in the limb, which, he said, ran down

* *Dublin Quarterly Journal*, February, 1863.

† Mr. Hutchinson, “Reynolds' System of Medicine,” p. 311.

‡ *Medical Times and Gazette*, November, 1861, p. 456.

into the fingers; he had also severe pain in the head, with tenderness on pressure, but most in the neck, from which point he described the pain in his arm as originating; the sensation of the limb appeared to be normal. He had had syphilis and iritis. Eight grains of iodide of potassium was prescribed by Dr. Jackson three times a day. On the man's next visit, one week after, he was remarkably improved; he had much less pain, and could grasp much more firmly. A fortnight later he was quite well."

In other instances, where epilepsy, paralysis of the orbital muscles, and mental aberration, have existed, the iodide has done much to improve the condition of the patient,* and may, when the accompanying symptoms indicate its employment, be always used with advantage in the first instance, and subsequently in conjunction with mercurial treatment if this be found necessary.

Syphilitic disease of the spinal cord and trunks of the nerves, seems, as far as we yet know, to be benefited by the same line of treatment as is required when the brain is affected, and to be fully as amenable to the well-directed and persevering use of the means already described.

The lesions classed under the second division of the tertiary stage,† are those in the treatment of which iodide of potassium is pre-eminently useful; mercury in any form is seldom or ever beneficial, and will generally be found positively injurious in these cases. The iodide is here what mercury is in the early stages; and like it, while enjoying an undoubted superiority over every other means of treatment, yet requires sometimes much care in its administration, and may be efficiently aided by attention to general rules of management, as well as by local applications. In its early stage of development, the *cellular node* may be efficiently treated with five-grain doses of the iodide, combined, as it always should be, with ammonia; the swelling should be at the same time painted regularly every day with a liniment composed of equal parts of the tincture and liniment of iodine; this will often suffice to check the growth and produce absorption of the gummy matter.

* See Cases by Dr. Moore, *Dublin Quarterly Journal*, May, 1866, and *British Medical Journal*, July 4, 1868.

† See page 174.

When the dusky-red colour of the skin and softening character of the swelling shows that the deposit has sloughed, a free incision should be made into the tumour; a very little serum or blood will alone escape at the time, but the expulsion of the slough will be expedited, and the destruction of the integument economized. The chloride of lime lotion may now be injected twice a day into the cavity in which the yellowish-white slough lies, or the carbolic acid and glycerine lotion, or elemi ointment and turpentine may be used, small bits of lint soaked in either being pressed into the cavity, and a poultice laid over all. The expulsion of the slough takes a long time, if not hastened by the assiduous employment of such means; when this has taken place, however, the cavity generally heals quickly.

It has been already stated, when the treatment of the early tertiary lesions of the *mucous membranes* were considered, (page 248) that iodide of potassium was in all such cases the most efficient treatment; when the submucous tissue is the seat of gummy deposit, the same rule applies, with this additional recommendation, that the dose of the drug should be not less than ten or twelve grains three times a day; these are cases in which large doses promptly given will give immediate relief to the distressing symptoms of dysphagia or dyspnoea, according as the slough is situated in the pharynx or larynx.

Deposits in the *muscles, tendons, and fascia*, require in general nothing but iodide of potassium and rest to procure their dispersion. A muscular tumour, the nature of which may have been doubtful, and for the removal of which an operation may have been proposed, will, upon its syphilitic origin being discovered, and the iodide prescribed, vanish week by week, and leave the muscle which had been crippled by it free again to act as well as before its appearance. A prolonged and persevering use of the medicine, however, may be necessary if the deposit has become very hard, and the surgeon must not be discouraged by want of immediate success, but must perseveringly and in increasing quantities use the remedy, which he may depend upon as not only the best we possess, but

one which will succeed, if properly managed, in procuring the dispersion of the tumour. It will be well to begin in such cases with five-grain doses of the iodide, dissolved in water, with ten grains of muriate of ammonia ; subsequently, if necessary, the dose may be increased and the form changed—the liquid extract of sarsaparilla or infusion of cinchona bark making suitable vehicles, while the patient's digestion is benefited by the change. There is every reason to believe, from the effects which we find the iodide exerts upon the deposit in other muscles, that when it occurs in the heart, the same beneficial result would follow from the employment of the same means ; the difficulties of diagnosis have as yet prevented proof of this.

The frequent occurrence of *periostitis* and *ostitis* has rendered the treatment most suitable to them well understood. Local treatment will help in many cases, but the free and persevering use of iodide of potassium is the means which may be depended upon as that which always gives us the best results. The power of the iodide is much more marked in recent than in old cases ; in the latter, its prolonged use is necessary to produce any influence ; in recent cases, on the other hand, when the nocturnal pain is agonizing, and the tertiary fever well marked, the effects of iodide of potassium, in doses of eight grains three times a-day, is most striking : the nightly pain abates first, giving the patient sleep, the general appearance and colour of the skin improving at the same time ; the node will be found still painful on pressure, but day by day the tenderness will diminish, and the size of the swelling at the same time lessen ; but very often, after all tenderness has disappeared, and the patient feels quite well again, the node remains not much diminished. Local treatment may then aid the action of the iodide, but, in my opinion, should be reserved until this period, the iodide alone being suitable in the first instance. Painting with iodine-liniment in milder cases, and repeated blistering in some chronic cases, will assist the disappearance of the swelling ; the blistered surface may be advantageously dressed with mercurial ointment, while the internal treatment by iodide of potassium continues still

to be carried on, and the general health and nutrition carefully attended to, the patient being protected from the effects of changes of temperature by warm wollen under-clothing. Occasionally suppuration takes place beneath the periosteum (phlegmonous node;) when we have reason to believe such to be the case, a free incision down to the bone through the swelling is the proper treatment, and will give relief to the agonizing pain which has been felt; but we must carefully avoid mistaking the very acute pain and constitutional disturbance which accompanies ordinary periostitis and nodes for the effects of suppuration: the latter but rarely occurs; when it does, it will be known by the œdematous redness of the skin over the swelling, and by the occurrence of rigors. When necrosis exists, all that surgery can do is to remove the dead bone when it is loose; it is never expedient to attempt its removal before it is separated from the living bone, but, as soon as possible, free exit should be made for it through the soft parts, and the dead bone removed with a strong forceps. Ricord particularly urges the removal of all caries or necrosed bone, especially when it occurs, as it so often does, in the bones of the head and face, upon the ground that caries and necrosis reproduce themselves, and that their extension is consequently arrested by the removal of all bone which has already perished.

Although iodide of potassium holds, as a general rule, the first place in the treatment of all the later tertiary lesions, yet, in the same way as some cases in the secondary stage are better treated with iodide of potassium rather than with mercury, so some cases of syphilitic bone disease are better treated with mercury than with the iodide. Cases are occasionally met with, in which the iodide has failed to give relief to constantly recurring nodes and severe osteocopic pains, and in which mercurial inunction succeeds in giving permanent relief. When, after full doses of the iodide have been taken for some time, we find that no further improvement is taking place, and especially if the physiological actions of the drug are showing themselves, we should then at once discontinue its use, and commence inunction, using not more at first than ten grains of

the ointment daily; and this will usually be found sufficient to accomplish the gradual but complete removal of the symptoms. It is important to recognise the occasional necessity for this exceptional treatment, which, under the circumstances now mentioned, we may confidently adopt; but as long as the iodide is agreeing with the patient, and the symptoms are declining, if ever so slowly, we should persevere with its use, merely changing the vehicle in which it is contained, or increasing the dose. In the two complicated and severe cases related at the end of the eighth chapter,* the restoration to health which took place in both was due altogether to the prolonged and persevering use of the iodide of potassium. Bichloride of mercury was tried in both cases for a time, and with the same result, viz. an immediate arrest of the improvement which had been steadily taking place; and, at the same time, a corresponding falling off in the vigour and appearance of the patient showed that mercury would not agree. A return to the iodide was, in both cases, followed immediately by a renewal of appetite, and a continuous improvement in all the symptoms, resulting in a very complete restoration to health.

A description of the treatment of syphilis would be incomplete without some account of the process termed *syphilization*. I have already referred (page 28) to the fact, first noticed by Freke, of Hamburgh, that after a certain number of inoculations had been effected with chancreous matter, no further effect could be produced. This fact, which admits of different explanations, was, in 1850, proclaimed as a new discovery by M. Auzias-de-Turenne, of Paris, and made by him the foundation upon which to rest the following theory:—That as vaccination rendered the system proof against the poison of small-pox, so repeated inoculations with chancreous pus would render the system proof against the poison of syphilis. And following this protection-theory, it was further announced that repeated inoculations made with chancreous matter upon a person whose system was already syphilitic, would *cure* the disease. With regard to the former of these two propositions, it has been fully

* See page 197, &c.

disproved, (see page 29) and may be dismissed from further consideration; with regard to the latter, to which the name *syphilization* has been given, some more attention is due.

Sperino, of Turin, was the first to put Auzias-de-Turenne's theory to the test of experiment, and he was followed by other Italian surgeons, all of whom reported cases in which syphilitic symptoms had disappeared whilst the inoculations were being made. Professor Boeck, of Christiana, having, whilst travelling in Italy, observed these experiments, determined to repeat them upon patients under his own care. He began his experiments in 1852, and has been so fully satisfied with the results obtained, that he has become the uncompromising advocate of syphilization as a method of treatment for syphilis in all its stages. Before considering the results obtained, and the explanations offered, it will be well to describe the process itself. Professor Boeck, when examined before the Venereal Committee, in June, 1865, thirteen years after he commenced this mode of treatment, describes his method of carrying it on as follows:—When commencing the treatment of a case of constitutional syphilis, he takes matter, either from a primary sore upon another person or from an artificial sore on a patient under treatment, and inoculates this on both sides of the chest:—

“I make,” he goes on to say, “generally three inoculations every time, or three punctures on each side, because it very often happens that one or two of the punctures will not take. One puncture is enough; but then I must watch every day to see whether they take or not. Three days after the first inoculation, I perform a second inoculation, and I take the matter from the pustules formed by the first inoculation. Three days after that I inoculate the patient a third time, taking the matter from the pustules formed by the second inoculation. So I go on every third day, taking the matter always from the pustules last formed; and I go on so long as the inoculations take. When they do not take, then I take new matter from another patient, who is generally under treatment by syphilization. I put this matter also into both sides of the chest, and continue it in the same way as before, every third day, until I find that this will not take any more. I then take a third matter from a primary artificial sore in a man under treatment by syphilization, and I find that this third matter takes

also only for a time. When I find that the matter does not take well on both sides of the chest, I go to the upper part of both arms; and I inoculate in both arms in the same manner as in the sides of the body, so long as the matter will take. When the matter does not take any more in both arms, I then go to the thighs, and I go on just in the same way as before on the chest and on both arms. I go on as long as any matter I have at my disposal will take; when the matter will no longer take, then the treatment is finished, and the patient has recovered his health.”*

Being questioned more particularly as to the source from which he took the first matter inoculated, Professor Boeck stated that, for the last eight or nine years, he used only the matter from indurated chancres, which he irritated by the application of dry charpie or powdered savine, to produce the necessary suppuration. The time occupied by this treatment averages three months and a-half, and, under certain restrictions, it is not necessary to confine the patient, or to prevent him from attending to his ordinary pursuits.

The results obtained by this process are stated to be—1st. The symptoms of syphilis disappear, and very rarely relapse; and 2ndly. The patient's general health improves in every respect.

With regard to the first of these statements, there is now ample proof that, in a great number of cases, the symptoms of the secondary and later stages have gradually disappeared during the time that these inoculations were being made. The proportion of relapses in cases treated by this process is not accurately known, but does not seem materially to differ from that observed after other methods of treatment, or when no treatment has been employed.

With regard to the second statement, that the general health is improved by the process, it appears that sometimes phagedenic ulceration has followed the inoculations, and required very active measures to arrest its progress; but that when this has not taken place, the health does not suffer from the treatment, and in some, who were in a very cachectic condition, a remarkably rapid improvement took place; thus a patient who was examined before the Venereal Committee, and who had gone from Scotland to Christiana

* Evidence before Venereal Committee, p. 348.

for Dr. Boeck's treatment, stated that he was in a miserably cachectic state when he went, suffering from night-perspirations and a severe cough, with some badly-marked tertiary symptoms. Professors Simpson and Syme both considered his state of ill-health the result of syphilis. He weighed at this time 8st. 9lbs. After three months' treatment by syphilization, he weighed 11st. 12lb.; his cough left him in a fortnight. This patient, at the time he was before the Committee was in robust health, weighing 13st. 11lbs.; this was three years after his visit to Norway, and he had suffered no relapse of any of his former symptoms since his return; he had been suffering from them for seven years before he went.

The following trials of this method, made by my friend and colleague Mr. Richardson, confirm the conclusion that the symptoms of the second stage disappear, and that at the same time the health improves, under repeated inoculations:—

“J. L., twenty-two years of age at the time of his admission, was a delicate-looking, anæmic young man, appearing much older than his real age. He had a cicatrised hard chancre on the penis, indurated glands in the groin, and an eruption over the skin, which was desquamating, composed of papules, with a few scattered pustules. The treatment by inoculation was commenced upon the 2nd of May, by Mr. Richardson inoculating the matter from a chancre into a spot upon the right side of the chest, corresponding to the third intercostal space. Upon the third day a well-marked areola surrounded the pustule which formed at the inoculated spot; in two days more this was an inch in diameter; the pustule was then ruptured, and matter from it was inoculated upon the same side as the former, about two inches lower down. The pustule which resulted from this was slower in its formation than the first; fresh inoculations were made every three or four days with the pus from the last sore; when no pustule resulted from this, which occurred in about a month, then matter was taken from another patient, and a series of fresh inoculations commenced. The last inoculation was made on the 29th of June, nearly two months after the commencement of the treatment; during a portion of the time, the iodide of potassium mixture was taken, but no other medicine. In July the patient left hospital, the report stating that the eruption was nearly gone, and the patient being in excellent health, and able to resume his work. Upon August 3rd, Mr.

Richardson meeting this patient in the street, hardly recognized him, he looked so well. No trace of eruption on face ; said he was quite well."

"R. W., eighteen years of age, when admitted presented a well-marked papular eruption, part of it desquamating. The disease was contracted about three months previously. Mercurial inunction was used at first for a short time ; treatment by inoculation was commenced upon the 20th of May with matter taken from a soft chancre ; the puncture was made upon the left side of the chest. In two days a well-marked pustule, with a red areola round it, had formed ; the second inoculation was made on the fifth day ; the pustule which formed ran a much milder course than the first ; a third from this was also mild. Upon 3rd of June fresh matter obtained from the man J. L. was used, which ran a rapid course like the first. Twenty-one inoculations in all had been made up to the 6th of July, when it is reported that the patient was much improved in health ; the eruption having disappeared from the front of the body, lingered still on the back. The last inoculations took very imperfectly ; fresh matter from a suppurating indurated sore was used, which produced sores the size of a fourpenny-piece, with well-marked areolas round them, secreting a thin yellow pus ; inoculations from them was made, and from the sores then formed again, until the 6th of August, when fresh matter was again used, with the same result of again producing vigorous sores. The patient after this went to the country, scarcely a trace of eruption being apparent, and his health very good."

Admitting that the symptoms of constitutional syphilis diminish, while the treatment by repeated inoculation is carried on, and that the patient, as a general rule, improves in general health, we may next inquire, what explanation can be given of these facts ? It is now admitted that a large number of syphilitic cases tend to a spontaneous cure ; are we then warranted in dismissing these inoculations altogether as influencing the result, and looking upon the recovery as the natural course of the disease ? I think not altogether ; for cases of cachexia and syphilitic sequelæ, such as the one quoted from the evidence before the Committee, have been benefited whilst under this treatment, in a manner which leaves us no room to doubt that the improvement was, in some degree at least, due to the treatment ; so that we are compelled to consider in what way does syphilization act upon the disease ? Two expla-

nations are given. First, that of Professor Boeck,* who, denying the duality of the chancrous poison, believes that the matter taken from either a hard or soft sore contains the syphilitic virus. He thinks that the sores produced by the inoculation of such matter, are secondary sores, the virus having passed into the blood, and that the fresh infection thus introduced into the system, gets rid of both itself and the old disease together by the eliminative power of these ulcers. This theory is inconsistent with almost everything we know regarding syphilis. In the first place, the difference between the two species of sores is ignored; then the possibility of a repeated introduction of the virus into the system, while the old infection still exists, is assumed, without any proof whatever, or rather in opposition to the fact, that the sores produced by the inoculations have no period of incubation, and are utterly unlike those produced by experimental inoculation upon non-syphilitic patients; and finally, clinging to the homœopathic doctrine of *similia similibus curantur*, it supposes that repeated doses of the poison (not given in homœopathic quantities,) improves the condition of a patient already suffering from the presence of this very poison in his system.

The second explanation is that of Professor Faye, also of Christiana, who maintains that the sores produced by the inoculations are local sores, and their action upon the system is depurative, simply by means of the pus secreted by each; these numerous ulcers on the skin relieve the system by their continued excretion of purulent matter. How far this purification of the system can be carried, he does not pretend to say, as there is no proof that a radical cure is effected by this or by any method of treatment. This explanation led to experiments being made of various irritants to produce a similar eliminative action. Cullerier† treated twenty-two patients with four or six small blisters, the size of a fourpenny-piece, applied daily to the sides of the chest, and found that this had some effect in removing papular and pustular eruptions, condy-

* Evidence before Venereal Committee, p. 352.

† *Year Book*, 1860, p. 325.

lomata, &c.; but against the deeper lesions of the throat, &c. it was powerless. Lindwurm* submitted fourteen syphilitic patients to friction with tartar-emetic ointment, without any other treatment. When the pustules from one inunction had dried up, a fresh crop was produced in another place, and this was repeated; the results were in some instances very favourable; in others, negative; he concludes that inoculations of chancreous matter act in the same way, but more vigorously than tartar-emetic ointment. Hjort made similar experiments, with a like result.

Upon the whole, the result of experiments with simple irritants, supported Professor Faye's theory, and it is now generally adopted as the true explanation. The fact that the ulcers produced by the chancreous pus should be found more active in removing the symptoms than the pustules of tartar-emetic or other irritant, proves not that their *mode* of action is different, but simply their *degree* of efficiency; and their similarity of action is shown by the fact that the cutaneous symptoms yield most readily to both.

Adopting Faye's, or the local explanation of the effects of this mode of treatment, it becomes evident that the name syphilization is absurd, conveying the erroneous idea that the poison of syphilis is employed as a remedy, and that by a process analogous to vaccination the system is rendered proof against syphilis. The *immunity* which is gained by these repeated inoculations is simply a local result, for the explanation of which we have not to go beyond the skin, and that too of the particular part which has been inoculated. A committee appointed to examine the subject in Christiana, and who appear to have been very cautious, taking six years to watch the results before making their report, state that immunity is only gained in that part of the integument where the inoculations have been made, and that even here it is transient, the skin resuming its normal reaction to the chancreous pus after the lapse of some time. They conclude, that it being practically impossible to inoculate every part of the integument, complete immunity, even for a time, cannot be obtained.

* Lancereaux, p. 753.

Syphilization (for which a less pretentious title should be sought) has now been put in practice in most of the chief hospitals of Europe, and very much the same opinion seems to have been formed of its efficacy as a treatment for syphilis by most of those who have tried it.

The Venereal Committee report that—

“Although they have reason to believe it may prove serviceable in such chronic cases as have failed to yield to more ordinary treatment, they have no sufficient evidence of its curative properties to outweigh the obvious objections to its general employment.”

Mr. Lee concludes—

“That the time required for the treatment of syphilis in this way is so long, and the inconveniences attending it are so great, that it is not in any degree likely to be adopted in private practice in England.”

In France, where the idea originated, the practice is not favourably entertained by the leading practitioners—Ricord being opposed to it, and Diday, Bazin, Gibert, and Lancereaux, considering it suitable only for particular cases which have resisted the ordinary modes of treatment. As it is not improbable that the voyage to, and residence in, Norway for a time has had something to do with the improvement which has taken place in some cachectic cases which have gone there for treatment, it is probable that Christiania will continue to be the stronghold of this mode of treatment, more particularly as the proofs of its superior efficacy would require to be very strong indeed, and very different from those which now exist, before the profession and the public in these countries would get over their natural repugnance to such a method.

Vaccination has been employed in Russia as a method of cure for syphilis, and the cures which are said to have resulted from its employment are chiefly of interest as experiments, proving the natural course of the disease to be towards spontaneous cure; and reminding us that our object must always be to favour this tendency, by supporting the vital energies of the patient on the one hand by hygienic measures, while on the other we relieve him from the symptoms which injure and oppress him by the special treatment most suitable for them.

CHAPTER XI.

HEREDITARY AND INFANTILE SYPHILIS.

THE fact that the poison of syphilis may be transmitted from parent to offspring, needs no proof at the present day. But the subject demands our most attentive consideration, inasmuch as by this means syphilis is introduced amongst the diseases of childhood and youth, complicating and influencing the constitutional tendencies to which early life is subject; frequently becoming the hidden spring of serious disease, for the successful treatment of which the cause must be discovered by the physician. The disease itself differs in many respects from acquired syphilis; in passing from the parents to their offspring, it seems to gain new strength and life; the virus transferred to a new and vigorous organism, takes on a new vigour itself, and proves fatal to many of its victims, from whom it is communicated by contagion to others much more readily than acquired syphilis is, and thus becomes amongst children sometimes a terrible and fatal epidemic. To prevent confusion, the term *infantile* syphilis should be understood to mean the disease occurring in infants who have *not* been born with it, to whom it has been communicated after birth by various means, most frequently from their nurses or from other children; the names *inherited*, *hereditary*, or *congenital* syphilis, being reserved for the disease transmitted directly from its parents to the fœtus in utero.

With regard to the transmission of the inherited taint, it is now well established that the fœtus may become infected from one or other parent, as well as when both are diseased; thus syphilis in

the father alone will produce the disease in his child, while the mother remains free altogether, or perhaps, during the course of gestation, takes the disease from her unborn child. (see page 76.) It has been asserted that the father being thus the sole origin of infection, the child will inherit the disease in the precise form and stage in which it presents itself in him at the time, but no rule of this kind exists; for it is not uncommon for a man who himself presents no symptom whatever of the disease, to beget a syphilitic child who is affected with a secondary rash. Diday's* observations prove that a man whose system is syphilitic will transmit the disease, although the poison is latent at the time, showing no sign whatever of its existence in his system.

The mother being syphilitic before conception of the child, the fœtus will derive the infection entirely from her, through the ovum being diseased; and if the mother becomes syphilitic during pregnancy, the fœtus will become so also, through the medium of the poisoned blood. There seems to be a limit to this latter communication between mother and child, for, according to the observations of Ricord, and subsequently of Diday, no case has ever occurred in which this infection took place after the seventh month. A mother becoming affected with syphilis during the last two months of her pregnancy, will not communicate the disease to her child, which will be born healthy.

A child may thus inherit syphilis from its father or mother alone—in the majority of cases it is from the former—and have it in a severe form; but when both parents are the subjects of syphilis, the fœtus is more certain to suffer, and more likely to suffer severely. There are as yet no data for concluding as to whether a child is more likely to suffer severely when the disease is derived from the father or from the mother; but it seems reasonable to suppose that the great differences which are observed in the intensity of the disease in the child, may arise from the fact, on the one hand, of the ovum being originally diseased from either parent, or, on the other, of the disease being subsequently communicated during the development

* Infantile Syphilis, p. 17.

of the fœtus in utero; for in the former case every part of the fœtus, as it becomes developed, is essentially syphilitic, being formed of poisoned material; as it grows, the disease grows also, being part of itself. The intensity of disease produced in this manner must be very great, and cannot be equalled by that produced by the poison taken into the system during the course of intra-uterine gestation, or after birth.

Whether this explanation be admitted as the true one or not, the fact that the effects upon the fœtus of inherited syphilis vary greatly in intensity, must be acknowledged by all. We find the same cause—inherited syphilis—producing the death of the fœtus at a very early stage of its intra-uterine existence, the disease proving fatal long prior to birth; and again, showing its presence by no very marked symptoms until perhaps the age of fifteen or twenty years has been reached, when a peculiar and characteristic inflammation of the eye, or other lesion, tells of the poison so long dormant in the system; between these extremes, many intermediate effects are produced, every organ and tissue of the body being subject to disease, as in acquired syphilis. The differences between the immediate and remote effects, however, are so great, that a natural division of the subject arises into the *early* and *late* effects of congenital syphilis, the former comprising all the results to the fœtus in utero, and to the infant soon after birth; the latter including the more remote symptoms which appear after a period of latency.

First amongst the *early effects of inherited syphilis* must be placed the death of the fœtus in utero, and its consequent expulsion before the full term of gestation. That syphilis is a not unfrequent cause of abortion, is now generally admitted, although for a time its occurrence in the syphilitic was attributed to mercury, as were so many other effects of the syphilitic poison. Facts recorded by Colles and the late Dr. Beatty* proved that mercury, instead of causing, had the power of preventing, the occurrence of abortion in syphilitic women who had previously aborted several times. Diday, after relating cases illustrating this, concludes—

* “On a Species of Premature Labour.”

“If there is in pathology a truth strictly demonstrated, it is beyond contradiction the frequency of abortions in pregnant women affected with syphilis, and the direct power of syphilis to cause this accident.”

According to some authors, abortion results usually from infection conveyed by the father. Diday considers it probable, on the other hand, that when abortion is produced, the infection has been conveyed from the mother, whose system was probably syphilitic before conception, so that the ovum has been diseased from the first, and has been supplied with infected blood from the commencement of its development. No proof as yet, however, exists as to which—if to one more than another—we should refer it.

As time advances, a spontaneous decrease in the fatal action of the poison is observed. Thus, the first abortion having occurred at the fifth month of pregnancy, the next foetus will live until the seventh or eighth month, and then be expelled; and at the third pregnancy the mother will be delivered at her full time of a dead child; subsequently living children are born which exhibit the disease after birth. This *law of decrease* in the fatal action of syphilis on the foetus, corresponds with the spontaneous decline in the vigour of the disease which we have found takes place in the adult. Cases are sometimes observed which seem to contradict this law of decrease, in which the first child after marriage is born alive, and subsequently shows syphilitic symptoms, which perhaps it survives and recovers from, while at the second pregnancy abortion takes place at the fifth or sixth month, the foetus being syphilitic. This exception to the rule may arise from the father alone being at first syphilitic, the mother remaining through her first pregnancy free from the disease; but while suckling her first child, or subsequently, she becomes infected, and then, when pregnant again, the foetus, exposed to the syphilitic influence of both parents, dies. When the law of decrease is reversed, we must look for a new source of infection to the foetus.

The foetus may so far resist the destructive action of the virus as to live its full time of intra-uterine existence, and be born alive, presenting at birth unmistakable signs of the disease, to which it

shortly succumbs. Much more frequently, however, the child, which during its intra-uterine existence has not been killed by the disease, is born without any symptom of it. A child which subsequently presents syphilitic phenomena, and perishes in consequence, may, at the time of its birth, appear not only healthy, but even well nourished and vigorous—it appears as if the dormant poison in its blood was only called into action when the new energies of the infant were stimulated by its new existence.

The fatality of congenital syphilis presents a melancholy contrast to the usual course of the acquired disease in the adult. There are no statistics to prove the proportion of children born with syphilis, which perish from its effects; but a perusal of the records of such cases furnish abundant proof of its frequent fatality. This striking contrast is probably due to several causes. In the first place, as urged by Diday, the syphilitic poison in the adult vitiates only the elements of *nutrition*; while in the fœtus it vitiates at the same time those of *formation and those of nutrition*. Again, disease of the *viscera* is frequently found to have existed in infants dead of syphilis. This must be admitted as a frequent cause of death also. But in addition to these causes, we must conclude that the syphilitic poison is more deadly to an infant because of its undeveloped and immature condition, for we find infantile syphilis—that is syphilis which an infant contracts after birth—very fatal also; here we have neither of the above-mentioned conditions; but we may sufficiently account for the fact by the demand that exists for active nutrition and growth at this age, to which the syphilitic poison is undoubtedly markedly antagonistic.

The syphilitic symptoms which new-born infants have been found to present at the time of birth, consist of a cutaneous rash, frequently presenting vesicles or bullæ, (syphilitic pemphigus,) and condylomata; with these there is a peculiar old shrivelled look, and a hoarse cry, with obstruction of the nares from a diffuse inflammation of the mucous membrane of the nose. These and other symptoms have all been observed at birth, and when they are, death

almost invariably follows; but as already stated, no symptoms usually appear at the time of birth—an interval elapses during which the infant presents every appearance of health, before the characteristic eruption and other signs appear. In the great majority of cases, three months of life have not passed before some unmistakable symptoms show themselves. To determine the average length of this period of latency, Roger* collected the records of 249 cases, and found that syphilitic symptoms appeared in 118 cases before the end of the first month, in 217 before the end of the third month, and in only 32 after this time; so that in nearly half, the disease made its appearance in one month after birth, and in seven-eighths before the end of three months.

The conclusions Diday arrives at upon this point, after careful analysis of a large number of cases, are—"1st. That the greater proportion of outbreaks of constitutional syphilis in new-born children occur before the completion of the first month of their existence. 2nd. That when the third month is once past, there is no longer much probability that any symptoms of this kind will manifest themselves."

We must be cautious how we act upon this second conclusion of Diday, for it will be proved when the late symptoms are described that sometimes the signs of an inherited taint appear about the age of puberty, no account at least having been taken of any early symptoms. So that in suspected cases, while we look for the disease to show itself within three months, yet if this time has passed, especially if the disease is of old standing in the parents, we can give no assurance of exemption, but must, on the other hand, caution the parents as to the care necessary to be taken of such children to protect them from further disease.

Before entering upon the symptoms which inherited syphilis produces, it will be well briefly to consider the conditions under which *infantile syphilis* arises; the symptoms of the disease in whatever way produced may then be considered together.

A healthy new-born infant is exposed to the risk of contagion

* Quoted by Lancereaux, p. 538.

chiefly from two sources—from its nurse and from other children. *Infection during birth* from ulcers existing in some part of the mucous membrane against which the child must be pressed in its passage into the world, used to be held to be the most frequent cause of syphilis in infants. This belief never rested on facts, but on supposition. Such a mode of infection is in the last degree improbable, and as a matter of fact has never been proved to have occurred. Ricord concludes, "It is without doubt rare, but not impossible;" and Diday comes to a similar conclusion. The most frequent source of syphilitic infection to the infant is, without doubt, its wet-nurse. The custom of hiring women to suckle infants when the mother is unable or unwilling to do so, is very common, and necessitates the giving out the child of the nurse to some other woman to suckle with her own, or to feed as best she can. This extensive interchange of infants produces a wide extension of syphilis; for not only may the nurse who takes the child be syphilitic, and give it the disease, but a syphilitic child being suckled by the same nurse will give her the infection, and by this means, while as yet she is unconscious of having any disease, convey it to other infants.

Bertin* relates the case of a woman whom he received into hospital with her child aged twenty-two months; the latter presented large prominent condylomata, &c. This woman was married, and had four healthy children; neither she nor her husband had ever had any symptoms of syphilis. When her child was three months old she took another child to nurse, whose mother had syphilis, and which was itself affected with ophthalmia and sores about the mouth. She suckled both children. Eight days afterwards her own child had sores on the tongue and palate, and abscesses on each side of the neck. Three months later it had an eruption of pustules, for which it was treated in the hospital, the mother remaining free from disease.

In this case, the mother's breast was merely the means by which the poison was conveyed from one child to the other. More frequently the nurse becomes herself infected, and conveys the disease not only to her own infant but to her husband.

* Diday. *Infantile Syphilis*, p. 41.

Colles relates several striking instances of this. In one of his cases a servant girl who dry-nursed a syphilitic infant, took the disease from it. She went then to stay with relatives, whose infant child, whom she constantly nursed, took it from her. A girl of twelve years of age took it from the infant; the mother then became affected, and finally the father. The observation of such cases as this led this sagacious surgeon to say—"The readiness with which this disease (syphilis in infants) is communicated by contact cannot be exceeded in this property by any other disease with which I am acquainted. I look upon it as equally infectious with the itch itself."* The community of bed and board, so common amongst the labouring classes in this country, favours the spreading of the disease. An infant found to be pining away is sent to nurse to the country; it becomes one of the family of the foster-parents, who, with their numerous progeny, all live in a small cabin, two beds at the most serving all the inmates, the same spoons and mugs being used by all; under such circumstances it is not surprising that at times syphilis spreads like an epidemic.

The most frequent means by which infection is conveyed from the nurse to the infant is, without doubt, through the existence of sores upon or near the nipple. Any abrasion produced by the process of sucking will, in a syphilitic system, become an infectious sore, from which the infant will certainly be infected, for in the act of sucking we have every condition requisite for a successful inoculation—"moisture, warmth, vascular congestion, nervous erythism, delicate membranes easily torn, frequent excoriation, pressure, prolonged rubbing, and dragging at every moment."† The same circumstances render the conveyance of infection from the sores in the mouth of a syphilitic infant to the nurse a matter of certainty.

Can the infection be conveyed by the milk? This has been long a disputed point—Astruc, Bell, and others, maintaining that the disease could be so communicated, while Hunter denied its possibility; and the same uncertainty still exists, the fact being, that

* Obs. on Ven. Dis., p. 290.

† Diday, Inf. Syph., p. 42.

proof of this mode of conveyance of the disease has never been obtained; for the nurse who, being syphilitic, might be supposed to convey the disease by her milk, has also, at the same time, generally some sore or lesion which might be contagious, or she is suspected of having had such—no direct proof of conveyance by the milk being possible.

Diday advocates the possibility of infection by the milk, and concludes by saying:—"I neither admit nor reject anything absolutely concerning the point at issue. If reason induces me to admit the reality of this influence, I must confess that experience has not yet lent sufficient support to its suggestions."

The manner in which the disease spreads from one child to another is generally from the existence of condylomata about the mouth or lips, the secretion from which is conveyed upon a spoon or vessel used in common, or by direct contact when children sleep in the same bed. Vaccination has unhappily also proved a means of conveying the poison (see page 75.)

The *symptoms* by which syphilis manifests itself in infants are similar in many respects to those which the acquired disease in the adult produces; and yet differ from them in some important particulars. In the first place, when transmitted from parents to their offspring, there is no primary stage, and the secondary and tertiary stages are not as distinctly marked. Not unfrequently a secondary rash upon the skin is coincident with deposits in the viscera, or sometimes with nodes; when acquired after birth, the disease is in these respects more like that in the adult, the stages being generally distinctly marked. In the second place, syphilitic lesions in infants are characterized by a more copious and fluid effusion than they present in the adult; and this, which arises from the soft and fluid condition of the tissues in the infant, produces in its turn that highly-contagious character which has already been remarked upon, and which for a time was considered to be altogether peculiar to syphilis in infants, but which is now recognized as a variation in degree only, some of the secondary lesions of adults being contagious also, although not so much so as similar symptoms in infants.

In the third place, there are some symptoms quite peculiar to the disease in infants, which do not occur in adults. These are, 1st. A diffuse inflammation of the mucous membrane of the nares, giving rise to *snuffles*, which is a very common and characteristic sign of the disease in infants; the nose is choked with the moisture from the inflamed membrane, and the poor little patient gasps and snuffles in its attempt to breathe. 2nd. A diffuse stomatitis, without any ulceration, which extends to the throat and larynx, producing another characteristic sign, a *hoarse cry*, by which the disease is often recognized.

These are the chief peculiarities amongst the early symptoms; but the disease, besides these special signs, possesses very peculiar general features, giving to the affected infant a highly-characteristic appearance. This consists in a senile, withered, shrunken aspect, with a dusky-yellow colour of the skin which is characteristic, and which Trousseau describes* as giving a peculiar appearance to the child before the health has been observed to suffer—"The skin of the face loses its transparency; it becomes dull even when there is neither puffiness or emaciation; its rosy colour disappears, and is replaced by a sooty tint, like that of Asiatics; it is yellow, or like coffee mixed with milk, or looks as if it had been smoked." The whole appearance, as has been often remarked, gives the syphilitic child the look of a *little old man*, or still more like a little old monkey. Such is the profound change produced in the plastic system of the child by the withering influence of the syphilitic poison.

We recognise the disease in infants partly by this general effect of the disease upon them, but chiefly by the peculiarities of certain symptoms, or group of symptoms, which are present. These may now be briefly reviewed; 1st. A *cutaneous rash* of some kind is invariably present; it varies in form like the eruptions of acquired syphilis, the commonest are those of an erythematous and papular character. Erythema in infants is characterised by abruptly-margined patches of a peculiar dull-red or coppery tint, compared to the colour of ham. Papules are very common, and are generally

* Trousseau, *Gaz. des Hos.*, 1848, p. 78.

seen upon the thighs, lower part of the abdomen, and back; they are large and coppery-coloured, but very slightly raised, softer and moister than those of the same eruption in the adult, presenting little if any desquamation. A scaly rash is very rare, but pustular, vesicular, and bullous eruptions are not unfrequent. This should be specially borne in mind, as from the common occurrence of eczema and impetigo in children, we might assume that the eruptions presenting pustules or vesicles so rarely seen in acquired syphilis, belonged to these simple skin diseases. The syphilitic character of the eruption will be decided partly by its situation, which is on the chest, neck, axillæ, groins, buttocks, or thighs, very rarely on the scalp, where simple impetigo is so common; also by the copper-coloured areola which surrounds the pustules, and by the dryness and deeper colour of the crusts which form when these burst. Syphilitic ecthyma appears in severe cases; violet-coloured patches form on the leg or buttocks, the cuticle becomes raised over this and filled with a bloody, serous fluid. When this is discharged, an ulcer remains, surrounded by a livid areola. This ulceration has a tendency to spread, unless the health of the child be supported, and the syphilitic state of its system be met by suitable treatment. This severe form of eruption seems the result of syphilis in a debilitated constitution, and is therefore always a serious, often a fatal symptom.

An eruption of bullæ, (pemphigus,) varying in size from that of a threepenny-piece to a shilling, is not unfrequently met with in infants who have been neglected and badly fed. It is well known in this country under the name of "burnt-holes," a name derived from the black depressed ulcer which is left when the bullæ break or discharge their contents. This eruption, when it appears especially upon the palms of the hands and soles of the feet, is believed by many eminent observers to be syphilitic. The existence of syphilis in the parents where these symptoms appear on the child, is generally admitted, or if not can be ascertained. The connection between syphilis and pemphigus is, however, denied by some of the leading French authors. Diday, Trousseau, Gibert, and Bazin

consider this eruption an expression only of a cachectic state of the system ; while Ricord and Gubler consider that it is sometimes produced by hereditary syphilis, sometimes by a depressed state of the system from other causes. Lancereaux quotes a great number of authors who, on the other hand, support the view of the syphilitic origin of this eruption when it appears in new-born children ; but he directs special attention to the situation occupied by the bullæ—as indicating its simple or specific origin. When syphilitic, the palms of the hands and soles of the feet—as originally pointed out by Dubois—are the places where it almost exclusively appears. Lancereaux expresses his own belief in the truth of the connection, and Bassereau supports it also.

I have myself lately been treating an infant for well-marked symptoms of hereditary syphilis, whose mother had previously several miscarriages, and who informed me that the infant I was then treating was one of twins, who were born at the full time, apparently healthy. Both took ill with snuffles and hoarseness about the same time—that is about two months after birth. One of them had *blisters* upon the hands and feet, and upon no other part ; this one died ; she then brought the other to me.

Syphilitic pemphigus exists usually at the time of birth. The bullæ are scattered, irregular in size, generally about as large as a small nut, filled with a dark-coloured serosity, which becomes purulent, or not unfrequently bloody. When this escapes, by the bursting of the bullæ, superficial ulceration remains. The prognosis is always unfavourable ; the infants born with this eruption generally die ; diarrhœa, vomiting, and excessive prostration precede death.

A tubercular eruption is rarely seen in infants. Bassereau relates three cases in which this late syphilitic eruption appeared a few days after birth ; in all, the tubercles soon softened and ulcerated.

Much the most frequent, earliest, and characteristic cutaneous symptom in new-born children is the *mucous-patch, or condylo-mata*, by the presence of which we will often be able to determine

the syphilitic character of a doubtful eruption. The thin, moist skin of an infant doubtless disposes to the production of the symptom, as well perhaps as the constant irritation arising from the difficulty of perfect cleanliness. Condylomata appear on the mucous membranes, as well as on the skin, presenting a somewhat different appearance in each. When situated on the skin, they are slightly raised, about the size of a fourpenny-piece, with a soft whitish surface, as if from the application of a poultice. When they have existed some time, cracks and fissures form on the morbid surface, and a serous fluid escapes. The most usual positions in which they are found are the anus, scrotum or vulva, groins, axillæ, commissure of the lips, sometimes about the alæ of the nose, the chin, or on the head. When situated on a mucous surface, the condylomatous patch is less prominent, and tends more rapidly to ulceration than when on the skin. At first it presents the appearance of a whitish patch, of a rounded form; this passes on soon to form a little ulcer. Condylomata may form in any part of the cavities of the mouth, nose, or throat of a child; and consequently it becomes absolutely impossible to say that a syphilitic child will not communicate the disease to a nurse who may suckle it, although we can see no lesion about the lips or on the mouth. Diday, "without fear of contradiction," lays down the axiom, that, "The practitioner can never answer for the non-existence of lesions on the posterior part of the mouth of a newborn child;" and refers to numerous instances in which he has found nurses infected by children whom the practitioner had declared and certified to be exempt from any disease in the mouth.

When grouped, as condylomata frequently are, round the orifice of the mouth, they give a peculiar puckered appearance to the lips, which has been compared to the mouth of a purse drawn in with a string; and when situated round the anus, Trousseau compares the appearance presented to be like a crown with projecting teeth. Condylomata should be carefully looked for in all suspected cases; the surgeon must remember that this symptom

presents slightly varying appearances according to its position and duration, as well as the age and condition of the child, which no description however minute could entirely take in, or indeed render intelligible, but for the recognition of which clinical observation is necessary.

Coryza is a peculiar and characteristic sign of syphilis in the infant. It appears to be caused by diffuse inflammation of the mucous membrane in some cases, and in others by the development of mucous patches in the nares. The nostril becomes stopped up by the swelling of the lining membrane and collection of the discharge, and in consequence the infant is unable to suck constantly, but is obliged continually to withdraw its mouth from the nipple to take breath, and nutrition is from this cause much interfered with. The discharge is generally a sanious fluid, mixed with hard flakes. The orifice of the nostrils is marked with fissures and ulcers, which may extend to the lips. The mucous membrane lining the nose, at first red and swollen, subsequently may become ulcerated; the cartilages in consequence become eroded, and the bones losing their support the nose becomes flattened, the bridge, little developed as it is in infancy, becomes still more depressed, and gives to the face a very peculiar cast. Diday* suggests that one cause of death in these cases is probably the absorption of the putrid gases, which are developed in the cavity of the nose, from the decomposition of the products which fill its recesses, and which are drawn into the lungs by the child's forced efforts at inspiration.

The characteristic peculiar hoarse cry, first noticed by Colles, is no doubt produced by diffuse inflammation of the mucous membrane lining the larynx, similar to that which is so common in the nose. The existence of such a condition has been proved by examinations made by Mayr and Roger. The evidence afforded by the peculiar cry is sometimes of much importance in the diagnosis. It will be found to exist to a greater or less degree in almost every case of infantile syphilis.

Iritis is produced by hereditary syphilis as well as by the

* Inft. Syph., p. 79.

acquired disease. Hutchinson has reported* twenty-three cases of hereditary syphilitic iritis, in which the ages of the infants varied from six weeks to sixteen months; in eleven of these both eyes were affected. The little patients were generally feeble and cachectic; in a few instances well nourished and vigorous. In all these cases the disease in the parents was in an early stage when the children were conceived. The effusion of lymph is sometimes very abundant, and the danger of occlusion of the pupil or adhesion of the iris is very great. Mercurial treatment, however, acts as successfully here as in the adult, if employed in time.

Onychia occurs in hereditary as well as in acquired syphilis. The disease seems to be primarily in the matrix of the nail, in consequence of which the vitality of the nail itself is destroyed; it becomes dry and narrow, and subsequently falls, and a new one is produced in its place. Gerhardt† relates a case in which this exfoliation and reproduction took place three times before really sound nails remained. As long as the syphilitic inflammation and ulceration of the matrix continues, so long will unhealthy nails be produced, which subsequently fall off.

Periostitis and disease of bone are occasionally but rarely seen in infants with hereditary syphilis; never in acquired infantile disease. Cases are reported by Underwood, Cullerier, Barenprung, Fournier, and others, in which nodes and exostosis have been developed in syphilitic infants—but these cases are rare. Most frequently when exfoliation of bone takes place, it is from long-continued disease of the membrane covering it, as in coryza, followed by exfoliation of the nasal, turbinated, or palate bones. Bouchut has described a peculiar premature hardening of the long bones, whereby the shafts become so compact, that they cannot be broken without great and unusual force, which he connects with hereditary syphilis. Another lesion, which has been described by Valleix and Lancereaux, seems more certainly the result of hereditary syphilis. This is a *separation of the epiphysis*. In cases reported by these authors, the epiphysary cartilages were found to be separated from the

* Ophthalmic Hosp. Reports, 1858.

† Lancereaux, p. 347.

bone, apparently the result of a process of ulceration. These were accompanied by other distinctly syphilitic symptoms. The activity of nutrition required by the growing bone, makes it probable that the hereditary poison would produce a diseased action in the epiphysis.

The frequent occurrence of *syphilitic visceral lesions* in heredito-syphilitic infants is now fully recognised, and is admitted to be a very frequent cause of death in such; numerous post-mortem examinations have proved this fact, but have at the same time shown that death is not always thus produced, for not unfrequently no visceral lesion sufficient to produce death has been found.

Peritonitis.—Sir James Y. Simpson was the first to connect peritonitis in the infant with hereditary syphilis. This celebrated author relates thirty-six cases observed by himself, in which this disease existed with what appeared to him sufficient proof of its syphilitic origin. His conclusions are corroborated by Wilks, who in three cases of hereditary syphilis found adhesions between the liver and the diaphragm, and twice found general peritonitis. Hereditary syphilitic peritonitis is of a chronic adhesive character, without any tendency to suppuration, and presenting no very active pain, nor great constitutional disturbance.

Hepatic disease.—The liver is found to be diseased more frequently than any other organ in hereditary syphilis. Nor is this surprising, when we consider the important functions which this gland performs in the fœtus, and the susceptibility which it shows to syphilitic disease in the adult. Two kinds of disease occur in the liver; the one diffused, the other circumscribed. The first, or diffused variety, which is much the most common in hereditary disease, has been originally and specially described by Gubler. A firm fibro-plastic material is deposited throughout the gland, pressing upon the gland-cells, and blocking up the vessels; this deposit may occupy one lobe only, or the whole organ may be sometimes affected. Gubler has seen it confined to the left lobe, to the thin edge of the right lobe, and to the lobulus Spigelii. The induration

of the organ, or of the part of it which is the seat of the deposit, is sometimes very great; it is thus described by Gubler:—

“The liver is larger than natural; it is globular, and elastic to the touch; hard, difficult to tear with the fingers, and when it does give way, no impression is left on the surface. Whether altogether or only in part diseased, the affected part presents a peculiar yellow colour, like certain kinds of flint, and in some cases little white opaque grains, like grains of sago, are scattered through it. The elasticity of the diseased organ is such, that if a wedge-shaped piece taken from its thin edge be pressed, it escapes like a cherry-stone, and rebounds from the ground.”*

This remarkable induration of the liver has been found in the case of infants who have been born with syphilitic symptoms, and died soon after birth, and also in those in whom secondary eruptions, &c. have been developed after birth. Jaundice, according to Gubler, has not been present in any cases noticed by him; bile was always found in the gall-bladder, of a pale-yellow colour. The presence of the white nodules, which are found in the indurated tissue of the gland, and which have been named by Wagner “miliary syphiloma,” suggests that the disease differs chiefly in its acuteness from that which produces the thick, fibrous deposit in the adult syphilitic liver. Distinct fibrous masses, the size of a nut, have in some cases been found,† without the same diffused induration described by Gubler; this circumscribed fibrous deposit is much less frequently met with than the diffused induration. The symptoms by which syphilitic disease in the liver may be diagnosed during the life of the infant, are a rapid wasting, with incessant restlessness, vomiting, and diarrhœa alternating with constipation, at the same time that the abdomen is found to be swollen, and by a careful examination a considerable increase in the volume of the liver can be felt; sometimes ascites and œdema of the feet have been present; death is preceded by a gradual wasting and progressive cachexia. Treatment has in some cases apparently succeeded in removing the disease.

* Diday, *Inf. Syph.* p. 92.

† Tertellen, Thiery, Wedl, &c. cited by Lancereaux, *Op. Cit.* p. 553.

The *kidneys* have been frequently found hypertrophied in syphilitic infants, but have not been found the seat of any infiltration or deposit, such as occurs in the liver.

The *mesenteric and other lymphatic glands* are frequently the seat of a fibrous deposit, similar to that so often found in the tertiary stage of the syphilis of adults. Hutchinson* reports a case in which the bronchial glands were found infiltrated with a fibrous deposit; the child, five months old, was born of syphilitic parents, and itself had a syphilitic eruption; it had enjoyed good health for two months of its existence before it showed any symptom of disease. Barensprung has noticed the same glands affected in a similar manner.

The *supra-renal capsules* have been noted both by Virchow and Barensprung to be the seat of enlargement in syphilitic infants; their ordinary structure seemed quite altered and replaced by a yellow fibrous substance.

Turning now to the chest, we find the *lungs* very frequently reported as diseased in children dead of inherited syphilis; two forms of disease are described. 1st. A diffuse hardening of some portions of one or both lungs; the affected portions of lung are described as more dense than natural, sinking in water, and emitting upon pressure a serous fluid; section showed that this hardening depended upon the deposit of neither cancer nor tubercle, but upon that of a lardaceous substance unlike either; this condition of the lung was noticed in infants by Dubois, before it was supposed to be produced by syphilis, but lately the connection between the two has been fully established. The lungs affected with this syphilitic induration are seen, when the cavity of the thorax is opened to fill it completely, bearing the impression of the ribs, smooth, shining, and pale upon the surface. They are found to contain air only in certain parts which are the least indurated; sometimes compact portions of lung are met with, having the consistence of hepatic tissue, forming a kind of white hepatization. 2nd. A circumscribed deposit in the lungs has been repeatedly found to exist in syphilitic infants; this consists of

* *Medical Times and Gazette*, 17th July, 1858.

small tumours, varying in size from that of a pea to that of a nut, scattered through the lungs; they are perfectly circumscribed; generally of a yellowish colour; sometimes surrounded by a wall of fibrous tissue; usually firm throughout, but occasionally found to be softening in the centre. They are distinguished from tubercle by their number, which is comparatively few, and by their microscopical characters, which are those of fibrous or connective tissue; tubercle in the lung at this age too is rare.

These changes in the lungs have been seldom even suspected during the lives of the affected infants, which have been usually so short, and so beset with other syphilitic lesions as to render the discovery of the condition of the lungs impossible; the knowledge that such disease does frequently exist with severe hereditary syphilis, will lead us to examine for its presence, particularly if dyspnoea is noticed along with a cachectic syphilitic condition.

The *nervous system* is not so frequently the seat of syphilitic disease in the infant as either the lungs or liver; but that such disease does occur as the result of hereditary syphilis, is proved by some well ascertained instances. Thus Virchow* has seen small yellowish-white deposits in the brain of a new-born syphilitic infant; and in a child two years of age, which suffered from syphilitic paralysis of the third nerve, Von-Graefe found several spots of cerebral softening. The following is recorded by Hutchinson and Jackson:—†

“Henry J——, aged four months, admitted to hospital January 29, for an abscess in the arm and congenital syphilis. Iodide of potassium was given, and the abscess was opened; it had been probably a cellular node which had suppurated. On his next visit, the site of the abscess was occupied by a rounded and defined lump, over which the skin was smooth and purple. There was another, but not so much reddened, and not at all tender, in the cellular tissue over the right buttock. There was no doubt, from the mother’s history, that the child was suffering from syphilis, and the general appearance of the child confirmed that idea. The mother stated that her child had two convulsions since her

* “Syph. Const.” p. 4.

† *Medical Times and Gazette*, July, 1861.

first visit to the hospital. Upon the 15th of February she stated that he appeared to have great pain on the right side of his head, and that the right side of his mouth 'worked,' and that he then became insensible. February 22.—The face upon the right side was seen during the visit to be spasmodically affected, the right eye being closed, and the mouth drawn by spasm to the right, and continually twitching. The left eye was open, and that side of the face was normal, except that it was drawn somewhat by the want of action on the other side; he did not appear at all insensible. He was brought for the last time on February 26; he had then lost power over his bladder and legs, and was apparently suffering much pain. His mother stated that upon the 23rd his water began to dribble from him, and that he never passed any water afterwards except in that way; his bladder was distended; his urine was drawn off by a catheter. Both legs were pinched; upon the left side he did not feel at all, and this leg was quite without power of motion; upon the right side the feeling was very slight; he could move the arms and upper part of the body quite well. The child died upon the 3rd of March, having been insensible for several days; no post-mortem was obtained."

Symptoms of arachnitis with effusion have been frequently observed in children born of syphilitic parents, and is believed by Haser,* Dr. Nevin,† Hutchinson,‡ and others, to be a direct result of syphilis. Sleeplessness has been remarked in these cases to be the first sign of inter-cranial disease; subsequently convulsions, either partial or general; sometimes paralysis and coma follow.

It might be supposed that in such a condition of the system as is produced by hereditary syphilis, when nutrition is so profoundly affected, and glandular and other organs so frequently diseased, the *blood* itself would be altered in its composition; we have reason to believe that it is so, from the numerous observations which have been made of post-mortem effusions of blood into the cavities. Thus Hutchinson relates a case in which the pericardium was found full of coagula; and Barenprung mentions several in which blood was found effused into the cavities of the pericardium, pleura, and arachnoid; and Lancereaux relates an instance of an infant who

* Quoted by Lancereaux, p. 563.

† *Lancet*, September 18, 1858.

‡ Reynolds's "System of Medicine," p. 320.

died syphilitic a few hours after birth, in which the cavity of the pericardium was partly filled with blood, which also was effused over the surface of the lungs, and in spots throughout the entire cellular tissue of the limbs. What the precise nature of this change in the blood is, we do not yet know. Arguing from the fact of the blood being found to have passed through the coats of the vessels, and become effused into the cavities of the body, we would conclude that an extensive deprivation of red and white globules must have taken place, so completely to derange the ordinary endosmosis: and this conclusion is strengthened by the fact that an extensive deglobulization is found to take place in adults specially during the secondary period. That the active nutrition upon which the existence of the infant depends should fail, and death result without any organic lesion taking place, is no longer matter of surprise, when the blood itself undergoes such deterioration.

The symptoms which have been now described, tend to death, or spontaneous disappearance; towards the end of the first year, if the child survives, they will have wholly disappeared. A period of latency follows, during which the child may enjoy very good health; occasional recurrence of some symptom, however, usually shows the presence of the poison in the system. The cutaneous rash does not relapse—it never appears again; but condylomata frequently recur about the mouth and anus, and the child's health, although good when they appear, declines if they are allowed to continue. As in the acquired disease of adults, no tertiary or late symptoms may follow this period of latency; but it has within the last few years been satisfactorily proved, and it is most important fully to admit, that tertiary or late symptoms do frequently appear in the child after the termination of this period, which lasts until the fifth year, sometimes very much longer, no symptoms occasionally showing themselves until the age of puberty, or much later.

The connection between certain symptoms occurring in children or young people, and inherited syphilis, was frequently suspected from time to time by careful observers, and cases are recorded by

numerous authors* in which children of six, nine, ten, eleven, and similar ages, presented symptoms so analogous to tertiary syphilitic lesions, as to leave no doubt of their true origin in their minds. It is, however, only within the last ten or twelve years that sufficient evidence has been produced to compel general assent to the conclusion that hereditary syphilis produces effects which do not appear until the child has arrived at or near the age of puberty. For the production of this evidence the profession is in a great degree indebted to Mr. Hutchinson, whose careful investigations and numerous observations upon this subject have done much to clear away its difficulties, and render not only the fact of the occurrence of late hereditary syphilis admitted, but also its diagnosis possible.

The *late* symptoms of hereditary syphilis are, as a rule, symmetrical, which from the fact that the poison which produces them has been in the system during its entire period of formation and development, we would expect, but which points out the wide difference between them and the ordinary tertiary lesions of acquired disease, to which they are erroneously compared; they form a group peculiar in every respect, and differing entirely from any which we have yet seen produced by the poison of syphilis. They have for a length of time been confounded with other diseased conditions, and supposed to arise from a *strumous* condition of the system; the discovery that many symptoms which they had been accustomed to refer to struma really were produced by syphilis, led Ricord and E. Wilson to ask—"Is not all struma syphilis?" While stopping short of the conclusion suggested by this query, Mr. Hutchinson's researches compel us at the same time to conclude, "that a very considerable proportion of those chronic diseases of the eyes, skin, glands, and bones, to which the epithet 'strumous' has been applied, are really the direct results of inherited syphilis." The question, upon what evidence is a surgeon justified in concluding that a patient, it may be an adult, or at all events one long past the

* N. Massa, Stoll, Hoffman, Plenck, Bertin, Rosen, Baumes, Cazenave, Trousseau, Sperino, Ricord; quoted by Lancereaux, p. 564.

period of infancy, suffers from an inherited syphilitic taint demands our most careful attention, if, on the one hand, we would avoid the error of seeing syphilis in everything, or on the other, ignoring its existence when really present.

The following group of symptoms, originally pointed out by Mr. Hutchinson, have been during the last ten years tested by extensive clinical experience, and their accuracy confirmed by the observations of others :—

1st. A peculiar *general physiognomy*, arising from the effects of inflammation which has occurred in infancy, mark the hereditary syphilitic patient; a protuberant forehead, like that of hydrocephalus, and probably produced by infantile arachnitis; a sunken bridge of nose, consequent upon long-continued inflammation of the nasal mucous membrane, when the bones were still soft; a pale earthy complexion, with a thick skin, marked by little pits and linear scars, particularly about the corners of the mouth. In addition to these marks, the patient is generally stunted in growth, and has a heavy dull aspect, but this is not always the case.

2nd. The permanent *teeth* supply a sign, valuable not only on account of its constancy, now proved by extensive observation, but from the fact that these structures cannot have been altered by disease acquired in later life, which, from the age of many who suffer from late hereditary taint, might produce other signs.

The most reliable characters which the teeth present are a dwarfing and notching of the incisors; one or two are usually affected more than the rest. The affected teeth are narrow and peg-shaped, consequently spaces exist between them and the next teeth; their cutting edges are notched with a peculiar single notch, from which a furrow extends along both the front and back of the teeth; they are short, too, as well as narrow, and therefore do not come down to the level of the others. The central upper incisors are, perhaps, the most frequently thus affected; sometimes the canines show the same condition; the teeth have a dirty brownish colour, which cannot be removed by any amount of cleaning; they are found also to wear down very soon; the teeth of a person at

thirty being often as much worn as they should be at sixty. The cause of these remarkable changes in the permanent teeth is probably to be referred to the effects of stomatitis occurring in infancy, while as yet the permanent teeth exist as soft pulps only, whose development would be seriously interfered with by inflammation affecting the membrane which surrounds them at this period.

With regard to the value of this condition of the teeth as diagnostic of hereditary taint, Mr. Hutchinson remarks, after ten years' experience :—

“In any case in which the malformation was well marked, I should feel no hesitation in pronouncing the bearer of the teeth to be the subject of inherited syphilis, even in the absence of other testimony ; I have never yet seen such teeth excepting in patients of this class. In the majority of cases, however, the condition of the teeth is sufficient only to excite suspicion, and not to decide the question.”*

The observations of many surgeons confirm the conclusion, that this peculiar condition of the incisor teeth is produced by hereditary syphilis. Amongst those who stated their belief of this, may be mentioned Langenbeck† and Graefe on the Continent, and Bowman,‡ Wilks,§ and Paget|| at home. My own observations have convinced me of the truth of the connection between hereditary syphilis and this peculiar malformation of the incisor teeth ; but at the same time I am convinced, that it is only occasionally that the teeth show characteristic deformity ; frequently there is hereditary syphilis without any deformity, and frequently only such an amount of malformation exists as will, with other symptoms, aid the formation of a correct diagnosis ; the value of this sign, when it does exist in a well-marked manner, is undoubted.

3rd. The *eyes*.—Iritis occasionally occurs during the early stage of hereditary syphilis ; when it does so, it will frequently leave indelible traces of its existence, and consequently of that of hereditary

* Reynolds's "System of Medicine," p. 47.

† Schmidt's "Jahrb." vol. ii. p. 313.

‡ Ven. Com. Evidence, p. 447.

§ "Guy's Hospital Reports," vol. ix. p. 64, pl. 1.

|| *Medical Times and Gazette*, 1862, p. 454.

taint by adhesions of the iris or obliteration of the pupil. As the subject of inherited syphilis advances from childhood to early adult age, he becomes subject to another and a highly characteristic inflammation of the eye; it has received the name of *interstitial keratitis*, or *corneitis*, and consists in an inflammation of the cornea, and the effusion of lymph between its layers; there are no ulcers on its surface, the deposit taking place into the substance of the cornea; it is sometimes of a dull red salmon-colour; sometimes white, like ground glass; a zone of congestion is generally well marked round the cornea. This peculiar inflammation may last in its acute state for several months, during which the intolerance of light is very great, and the patient is practically blind; when the inflammation has ceased, interstitial clouds remain for some time in the cornea, but gradually diminish, so that sight is to a considerable extent restored; both eyes are usually affected at the same time.

The direct syphilitic origin of this peculiar form of corneitis, hitherto known as "strumous corneitis," Mr. Hutchinson has proved* by a large number of cases, in which hereditary disease was discovered to exist, and this conclusion is further strengthened by the remarkable manner in which the deposit clears away under the influence of mercury. Interstitial keratitis is not common; it is stated by some to be very rare; it is, however, highly characteristic when it does occur. A third effect of hereditary syphilitic inflammation in the eye is described by Mr. Hutchinson; it consists in an inflammation of the choroid, resulting in the deposit of lymph beneath the retina:—

"These deposits may be seen with the utmost distinctness by the aid of the ophthalmoscope, and when absorbed leave circular or irregular patches in which the pigment is deposited, and the retina opaque, which are equally easily found. These deposits cause more or less damage to vision, according to the exact part of the retina which is disorganized."†

We have thus marks of hereditary taint supplied by the eye in

* "Ophthalmic Hospital Reports," July and October, 1858.

† *Medical Times and Gazette*, September, 1858.

three different ways. 1st. By the evidence of infantile iritis; 2nd. In the signs of existing or past interstitial keratitis; 3rd. In deposits beneath the retina from choroiditis. The former two are readily discovered by simple inspection; the latter, by the aid of the ophthalmoscope.

4th. The *skin* is either thick, coarse, and flabby, or it looks thin and stretched; the former is the more common, but the latter condition is considered by Mr. Hutchinson to be the more characteristic of hereditary syphilis, requiring for its production a longer continued infantile eruption. In both states of the skin it is common to see numerous little pits upon the face and forehead like those of small-pox, and almost always there are scars about the angles of the mouth; the eyelashes and hair are dry and thin, and the nails badly developed. A peculiar form of lupus, characterised by rapid ulceration, which, when arrested, leaves a supple scar, is said to occur in the hereditarily tainted constitution. Mr. Hutchison says, when he recognises this form of lupus he has "rarely failed to establish a clear diagnosis of inherited syphilis;" it has its seat usually in the face, the alæ of the nose being a favourite situation.

5th. The *bones* offer sometimes valuable additional evidence of hereditary taint; the forehead is generally more or less protuberent, large, and rounded, from the effects of chronic hydrocephalus in infancy: sometimes nodes are found on the skull or long bones, or spots of necrosis or caries exist; flattening of the bridge of the nose constitutes a valuable sign, giving a peculiar and characteristic cast to the physiognomy; cellular nodes are also sometimes developed.

The signs here mentioned constitute the most marked and characteristic features of late hereditary syphilis; the disease, however, seems to produce many other deviations from health, such as glandular enlargements, diseases of joints, chronic enlargements of the tonsils, ulceration of the tongue and palate, &c., which, as they are also produced by other morbid conditions of the system, cannot be taken as signs of syphilis, unless other more distinct and peculiar symptoms are present also. It is most important never to

rest our diagnosis of hereditary syphilis upon one or two symptoms, but to take the whole into careful consideration, as in this way only can error be avoided ; the history may sometimes aid us, and just as often deceive us ; our diagnosis must be founded entirely on the signs before us, and may be safely made without asking the patients or their parents one single question. Mr. Hutchinson thus concludes his remarks upon the diagnosis of late hereditary taint :—

“In conclusion, I beg to remark most emphatically, that it is not by any one symptom that the diagnosis of hereditary syphilis can ever be supported, but by the careful estimation of the whole group ; they must be taken together in their relative bearings upon each other. By too great reliance on single ones, however apparently well marked, mistakes of the most egregious character would often occur, while I feel confident that by the opposite course, a very trustworthy conclusion may often be arrived at.”

Numerous examples are recorded by trustworthy observers in which the above group of symptoms have been more or less distinctly marked, and in which there was good reason to believe in hereditary syphilitic taint. The following may be introduced here, as affording at once an example of the symptoms described, and supplying additional evidence of the accuracy of Mr. Hutchinson's description :—

Hannah M'G——, now about twenty-five years of age, first came under my notice about five years ago amongst the out-patients attending the Adelaide Hospital. Her appearance was such as at once to arrest attention ; her figure was stunted ; her head remarkably large ; the whole cranium was much larger than corresponded with the size of the face, or of the rest of the body, while the forehead was specially round and prominent ; her skin was very pale, and at the same time thick, and of a dirty muddy colour ; there were no scars about the mouth or elsewhere ; her nose was low at the bridge, and pinched in between the alæ ; the left eye was the seat of inflammation ; a distinct pink zone existed round the margin of the cornea, which was throughout its greater part of a dull white colour. The upper incisor teeth were dwarfed and narrow, the two central ones being especially so, and presenting at their cutting edge a concavity or hollow ; the lower incisors were small and rough,

but not so remarkable as the upper. She stated that she was an only child, one infant having been born dead, after her ; her mother was dead a short time ; her father was a shoemaker, and unhealthy. She remembered being very sickly when a child, and her mother saying she feared she had water on the brain. She was never strong, but the inflammation of her left eye, for which she had applied, had only come on within the last month.

I have had frequent opportunities of seeing this poor girl since then until the present time. The course the inflammation of the cornea pursued was as follows :—The right eye soon became affected as well as the left ; both eyes then presenting a similar appearance, viz., a general hazy opacity of the cornea, with a red zone of vessels round it, while the conjunctivæ were at times very much injected, and again would become pale, relieved by rest and treatment. She was a patient in the hospital upon several occasions, her eyes improving so far under treatment as to enable her to go out and go to service, but the opacity of the cornea still remaining ; she was also for a time a patient in Dr. Steevens' hospital. Finding, however, that her sight was becoming so very bad that she could no longer act as a servant, and moreover as her hearing had become very dull, particularly upon the right side, she sought and obtained admission into the Molyneux Blind Asylum, where she enjoyed rest, good food, protection from cold, and the judicious care of Sir William Wilde and Mr. Wilson, the ophthalmic surgeons of the institution. Under these circumstances the state of the cornea of both eyes so much improved, that at the end of three years she left the asylum, and was again able to go to service. Upon examination, I find the eyes now in the following state :—The left presents near the centre of the cornea a dense white opacity, from which a white line extends upon either side to the margin ; this opacity is *in* the cornea, not upon it, as we see in certain leucomata ; the sight of this eye is very much interfered with by the central position of the opacity ; she can distinguish light readily, and objects in a general way with it ; the right eye presents a hazy diffused whiteness, not so dense as the left ; she can see objects distinctly with this eye, and thinks if she had very large print she could read. Her hearing is very bad, particularly with the right ear ; she is indeed quite deaf of this ear, the ticking of the watch being inaudible at any distance. Her general health and strength is now very much improved, but her skin has the same pale and thick look which characterised it the first time I saw her.

The *treatment* of hereditary syphilis in its early stage, includes not merely the adoption of the measures best calculated to save

the life and restore the health of the infected infant, but also those which are required to prevent the spread of the disease from the infected infant to others; and finally, the treatment of the disease in the parents, so as to prevent it, as far as possible, from being transmitted to future children. With regard to the first of these indications, it may be asserted with confidence, that the effect of mercury in restoring the health of a syphilitic infant, in removing the rash, condylomata, snuffles, and other early symptoms, is one of the most certain therapeutical facts with which we are acquainted. The restoration which takes place where mercury is judiciously employed in such cases, is very remarkable. The senile, shrivelled, shrunken look, the hoarse, plaintive cry, the spots and ulcers, all gradually disappear, to be replaced by the wonderful softness and freshness of infancy—and this without any ill effects appearing from the use of the remedy. Inunction is the only method by which mercury should be employed in infancy; the objections against the other methods hold here with double force, while there is no objection to inunction, and it is most efficient. Ten or fifteen grains of ung. hyd. may be rubbed round the infant's abdomen and back, every day after its bath; after this a flannel binder should be carefully applied, by which means every movement made by the infant will assist in rubbing in the mercury during the day. Next morning, the old ointment is to be carefully washed off in the bath, and then the fresh rubbed in again. There can be no doubt that the early symptoms, when they do not prove fatal to the infant, tend to spontaneous disappearance before the end of the first year. This appears to be used by some* as an argument against all, but especially against mercurial treatment—which latter is supposed to be followed by serious injury to the child. That injury might result from the injudicious or reckless use of mercury, as well as of any other powerful medicine, may be admitted; but there is absolutely no proof whatever that any injury is inflicted upon a syphilitic infant by the inunction of a sufficient quantity of mercury to remove its symptoms; but there

* Report of Ven. Com., p. 530.

is palpably a plain proof to all who see its effects, that the health is thus restored; and who shall say how many lives are thus saved? We are asked to substitute chlorate* of potash for mercury in the treatment of syphilitic children, upon no better ground than that some infants who have been treated with this drug have survived; the advocate of this treatment being himself very doubtful whether it did any good or not, apparently having no confidence in anything except taking abundance of food, which is exactly what the syphilitic infant cannot do, until its system is relieved by the action of mercury on its disease, when it does begin to feed, without the aid of chlorate of potash or "tonics" either.

There seems good reason to believe, from the recoveries which take place under a judicious mercurial treatment, that the visceral lesions yield to its influence, as well as the more apparent symptoms. Many children get well in whom disease of the liver or other organs cannot be doubted. When during the period of latency, condylomata appear, as they frequently do, I think a local mercurial treatment, such as is proper for the same symptom in the adult, is all that is required; while at the same time, some preparation of iron† is administered internally.

The second duty of the medical man who is called upon to treat a syphilitic infant, is to protect others from being infected by his little patient, who, if care be not taken, may become a focus of infection to the household and neighbourhood. We must remember "Colles's law":—The mother alone can nurse the child with safety. If she cannot nurse it, it must be bottle-fed. No healthy nurse should be allowed to take it under any circumstances. In addition to this, we must remember that a common mode by which the syphilitic infant spreads the disease, is by being kissed by the girl who carries it, or by others; even if no sores at the time exist about the mouth, still we must forbid this; and we must also take care that the spoons, mugs, &c. which the child uses are kept strictly for itself. These rules are obvious; but as the surgeon would, very

Ev dence before Ven. Com., p. 553.

† Syr. phosphatis ferri—Syr. iodidi ferri—or Carb. ferri sach.

justly, be much blamed if he has not done all in his power to prevent the spread of the disease, they are specially worthy of attention.

A syphilitic infant having been born, or an abortion the result of syphilis having occurred, the surgeon is appealed to, to prevent by treatment the recurrence of either of these disastrous consequences of the poison which exists in the parents. What should be done? Symptoms of the second or early tertiary stage will almost certainly be found in one or other, if not in both parents. The rule laid down by Colles in all such cases—the wisdom of which has been verified by more recent experience—was that *both* parents must undergo a mercurial course. A gradual but continued mercurial treatment in the manner already recommended,* should be perseveringly carried out until every symptom in both has disappeared. The effect of this treatment will be to protect, for a time at least, the offspring from infection. Cases related by Beatty and Colles,† and by Diday,‡ prove this; but at the same time they show that the protective effect of the best conducted treatment wears out, and will consequently fail, if a considerable interval elapse between the treatment and the conception, and may require to be repeated, to protect future children, one child having been born healthy, after the first treatment. The surgeon, bearing these facts in mind, will be very careful not to raise undue expectations of the result of the treatment, which at the same time he advises as the only one likely to succeed in preventing abortion, and holding out a prospect of the birth of healthy children.

The treatment of late hereditary syphilitic symptoms has been but recently attempted. As might be expected, these symptoms have proved to be much less amenable to treatment than the tertiary lesion of the acquired disease. Interstitial keratitis tends, according to Mr. Hutchinson, to recovery without treatment; but the other lesions, such as ulcers of the skin, disease of the ear, liver, &c., tend to permanent disorganization of the part attacked. As far as

* See page 224, &c.

† Obs. on the Ven. Dis., p. 267.

‡ Infant. Syph., p. 143 and 219.

we yet know, the very gradual and cautious use of mercury, with counter-irritation near the diseased part, and tonics such as the iodide or phosphate of iron, and cod-liver oil, constitute the most suitable treatment in such cases; while a bracing air, and a nourishing and full diet, without stimulants, will at the same time be required.

The question of the protection afforded by inherited syphilis has already been referred to; (page 69;) there can be little doubt that some degree of protection from acquired disease comes with the hereditary disease, rendering the disease less likely to be taken, and milder if it is taken. The question as to whether inherited syphilis can be again transmitted to the next generation, has been raised by Mr. Hutchinson,* who remarks:—

“There is no doubt that persons of marriageable age often present heredito-syphilitic lesions in an active stage—such as keratitis and nodes. I have repeatedly seen patients of various ages, from twenty to eight-and-twenty, become the subjects of keratitis for the first time. We might conjecture that such persons would be likely to transmit to their offspring some degree of taint, seeing that the taint is in full activity in their own bodies. I am not aware that any facts have as yet been published on this question. Conjectures abound; and several surgeons have expressed their belief that the influence of syphilis, once acquired, is felt through several subsequent generations. About eight cases have come under my own observation in which persons undoubtedly the subjects of inherited disease have become parents. With one exception, I have never been able to discover any evidence of disease in the offspring. In several instances the offspring appeared to be in excellent health. I have always made a point of seeing the children for myself, never relying upon the parents' statement, a precaution which is essential, as I have here occasion to illustrate. The exceptional case just alluded to is strongly in favour of the belief that the third generation may suffer. As no parallel case is on record, I think its details worthy of brief mention. A respectable young woman came to me about six months ago on account of an inflamed eye. She had interstitial keratitis in a typical form; her teeth were notched, and her physiognomy characteristic. She told me she was suckling her first child, an infant of ten months. I inquired if

* Reynolds' System of Med., p. 300.

it were healthy ; she said it was a fine baby, and ailed nothing whatever. I asked her to bring it with her at her next visit ; she did so, and on having it stripped, I found it covered with coppery blotches, with condylomata at the anus, and snuffles in the nose. Under subsequent treatment by mercury, all these symptoms disappeared. There remains, of course, the source of fallacy that this child's parents, one or other of them, may have had acquired syphilis. As to its father, I may state that he has long been under my treatment for sycosis, and that I have made the most detailed inquiry of him as to any venereal disease. I believe strongly that he has never had any. A fact which, perhaps, is of more value than his own statement is, that his sycosis has not been in the least benefited by iodide of potassium. Of course I have not ventured to insult him by inquiring as to his wife's antecedents, but there is no reason to entertain suspicion in that quarter, whilst the fact that she is the subject of inherited disease, makes it probable that she would not be liable to the acquired disease. Having, therefore, carefully balanced the evidence, I incline to believe that we have in this instance an example of the transmission of syphilis to the third generation."

More extended and specially careful observation is required to settle this interesting question, as well as to establish the amount and duration of the protection afforded by inherited taint—questions the importance of which is much increased by the indirect light which their satisfactory solution would throw upon effects of other specific fevers. If syphilis may be handed down from generation to generation, why not other blood-poisons also? And if protection to a greater or less extent follows with such hereditary poisoning, to what an extent disease may be thus modified or changed thereby it is difficult to say.

The modification which syphilis undergoes in passing from parents to their children, is a subject of much interest and importance. This will be best seen by briefly contrasting the symptoms produced by the acquired and by the inherited disease, which will, at the same time, bring prominently forward the distinctive features in the course of each, and form a suitable conclusion to the study of both.

ACQUIRED DISEASE.

First Stage.

A local sore where inoculation has taken place, with hard, indolent enlargement of deep lymphatic glands; sore contagious.

Second Stage—General Symptoms.

Commences within six weeks or two months of the inoculation; ushered in with febrile disturbance, accompanied by anæmia. Characterised by engagement of lymphatic glands; a cutaneous rash, most frequently dry, being either erythematous or papular in the majority of cases; sore throat; sometimes iritis or retinitis. Varies in intensity, being sometimes *mild*, sometimes *severe*; will disappear, without treatment, after the lapse of five or six months. Some symptoms contagious. Certain to be transmitted to offspring. Affording protection against a second infection.

Intermediate Stage.

Stage of latency, and partial relapse of some of the symptoms of the previous period. Continues until either tertiary symptoms appear, or the poison is altogether eliminated from the system.

HEREDITARY DISEASE.

No local stage, the sufferer's parents having received the poison from a few months to twenty years or more before the infant's birth.

First Stage—Early Symptoms.

May have commenced in utero; most commonly does not begin for from two weeks to three months after birth. Characterised by "snuffles," a hoarse cry, an eruption on the skin, (frequently moist, being vesicular or pustular,) by condylomata, by wasting, a senile aspect, an earthy colour, fretfulness; sometimes by iritis and arachnitis. With these, occasionally nodes and caries of bone occur also; and at the same time, inflammation of the periosteum, disease of the liver, lungs, lymphatic glands, and brain, with great blood deterioration. This stage ends either in the death of the child, or the spontaneous disappearance of the symptoms before the end of the first year. Symptoms highly contagious. Affording partial protection against acquired syphilis.

Intermediate Stage.

Stage of latency. The patient is generally wholly free from active symptoms, but shows by retarded growth, by palor of skin, a protuberant forehead, a sunken nose, and by ill-developed incisor teeth, the damaging effects of the poison.

ACQUIRED DISEASE.

Tertiary Stage.

Commences sometimes one year after inoculation, most frequently not for three or more years, and sometimes not for ten or even twenty years. Characterised by cutaneous eruptions, not symmetrical; by chronic inflammation of subcutaneous or submucous tissues, and of glandular and other organs, including the brain, cord, and nerves; which inflammation produces the deposit of lymph, sometimes firm, fibrous, and contractile, at others soft and granular, and with a tendency to slough. Extends indefinitely, very often to the end of life.

HEREDITARY DISEASE.

Second Stage—Late Symptoms.

Commences with the second dentition, at the time of puberty, or not till even later. Characterised by symptoms which are symmetrical; interstitial keratitis, producing more or less complete blindness by opacity of the cornea; deafness, which is either cerebral or from inflammation of the inner or middle ear; cellular nodes occasionally, and sometimes disease of periosteum and bone. The duration quite indefinite.

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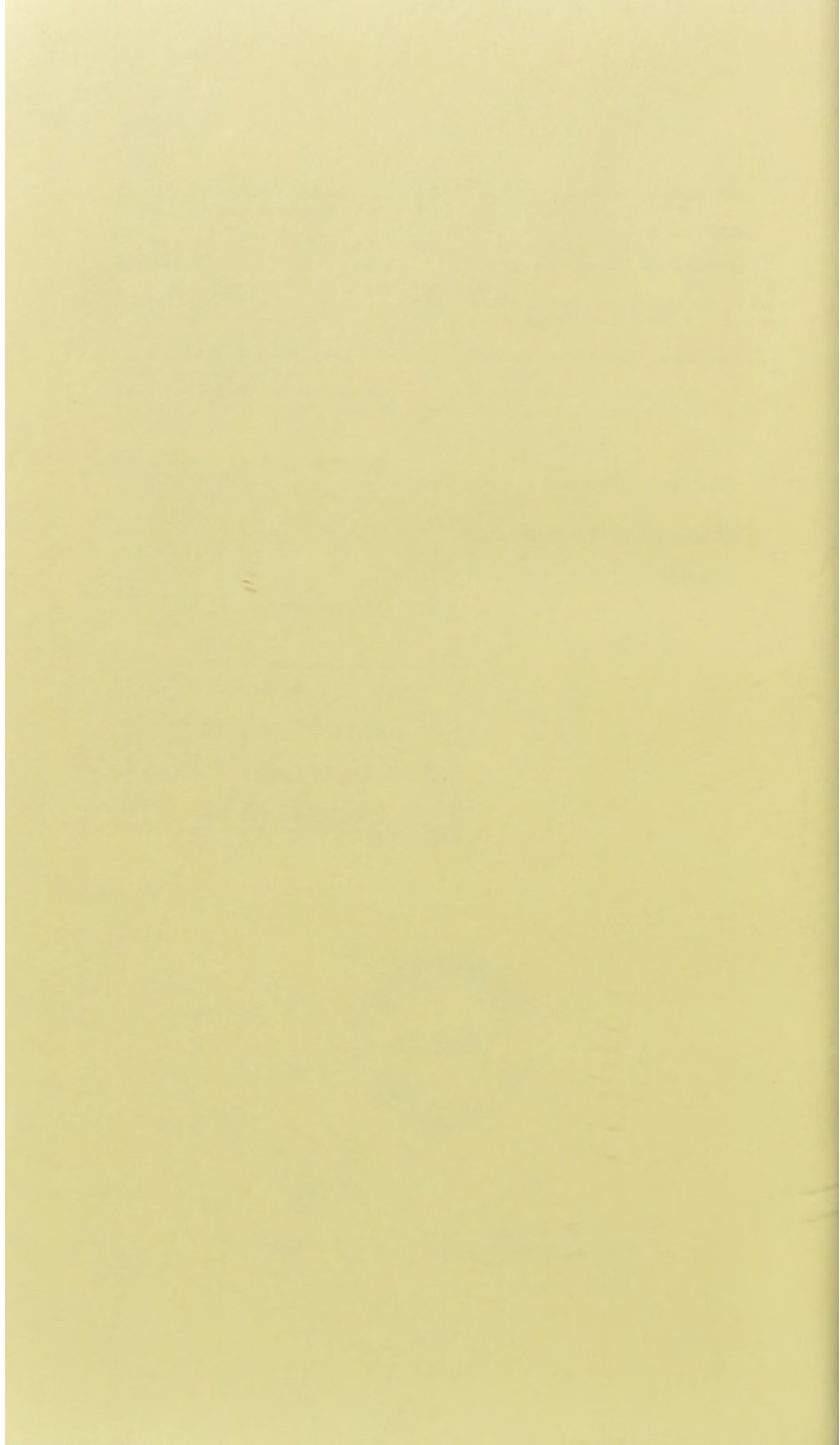
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