Some aspects of infantile syphilis : being the Hunterian lectures delivered at the Royal College of Surgeons in 1896 / by J.A. Coutts.

Some Aspects of Infantile Syphilis

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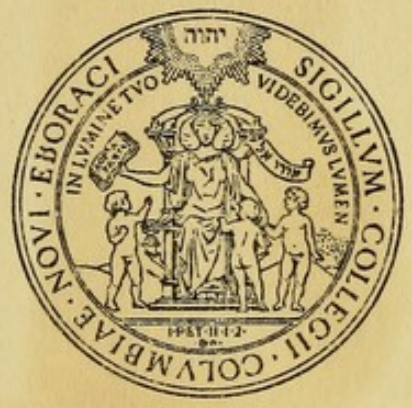

INFANTILE SYPHILIS

SOME ASPECTS

OF

INFANTILE SYPHILIS

BEING THE HUNTERIAN LECTURES

DELIVERED AT

THE ROYAL COLLEGE OF SURGEONS

IN 1896

BY

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RIVINGTON, PERCIVAL & CO.
KING STREET, COVENT GARDEN
LONDON
1897

TO MY SENIOR COLLEAGUE,

DR. EUSTACE SMITH.

AS HE HAS BEEN MAINLY RESPONSIBLE FOR THESE LECTURES BEING DELIVERED AND REPRINTED IN THEIR PRESENT FORM, IT IS FITTING THAT HE SHOULD INCUR THE ADDITIONAL RESPONSIBILITY OF DEDICATION.

PREFACE

THESE lectures deal with only a limited portion of the subject of "Infantile Syphilis." This being the case, I was for some time unwilling to publish them in a permanent form, preferring to await the opportunity of attempting a treatise dealing with the subject in a more complete manner. I have, however, received such pronounced assurance that their publication, even in the present incomplete form, would be useful, that I reluctantly forego my scruples. These lectures, then, remain in practically the same shape in which they were delivered at the Royal College of Surgeons. Their publication at least gives me the opportunity of expressing my indebtedness to my cousin, Dr. A. M. Gossage, for much invaluable help and criticism.

J. A. COUTTS.

54, UPPER BERKELEY STREET, W.

LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—In the first place I have to acknowledge my indebtedness to the Council of this College for allowing me to occupy this present position. I feel, however, that I can best fulfil the trust imposed on me by not elaborating this acknowledgment, but by proceeding at once to the subject with which I have to deal.

That syphilis can be transmitted from parents to offspring few will have the hardihood to deny at the present day. Long after the recognition of the symptoms of inherited syphilis in the infant, however, there would seem to have been a minority of observers who doubted this transmission. Hunter, it is well known, was induced to deny it; but in this College we may fairly claim for the great Scotch surgeon that

with him "error was but opinion in the making." During his lifetime and for years after his death his teaching was widely accepted and believed in. Further experience and knowledge, and especially the works of Colles, had shown that much of Hunter's writing on venereal disease was erroneous, and I fancied that, with the refutation of his mistake, the non-belief in the parental transmission of syphilis had been universally abandoned. It was then with surprise that I learnt from Kassowitz that in 1875, more than three centuries after the general acceptation of the fact of hereditary syphilis in the infant, there were still "authorities" who doubted this transmission. As late, indeed, as 1882 Hermann of Vienna published a work in which he endeavoured to prove that the assumption of such a complaint as hereditary syphilis was entirely a fallacy. Considering the recent date of this work, and having regard to the manifest differences between the inherited and acquired complaints, it needs but slight powers of prophesy to foretell that other "authorities"

will in the future come forward to support Hermann and their predecessors in Kassowitz's time in the denial as to the identity of the disease in parent and infant. It is easy to predict, moreover, that the grounds of their unbelief as to the hereditary form of syphilis will be based on the theory that the latter is a germ disease, and that what is really transmitted from parent to offspring is not the living germ itself, but merely a toxine or some other product resulting from it. But in the light of our present knowledge doubts as to the transmission to the infant are not within the range of practical controversy, and if there still lingers any smouldering scepticism as to this transmission it is of little import, and I feel I can fairly ignore it without further comment.

I assume, then, as proven the fact that syphilis can be transmitted from a parent to the infant. I feel I may also take as proven that syphilis in the infant can be derived from the complaint in the father alone or the mother alone, or may be a joint heritage from parents who are both

affected. It is true that within comparatively recent times authorities have doubted the power of the father to transmit except through the previous contamination of the mother, and others who have doubted the pregnancy resulting from a tainted ovum proceeding as far as the birth of a living child. Proofs in abundance, however, are forthcoming where, the father alone being infected, the mother has borne a syphilitic infant without presenting the least sign of the complaint herself, and others where a syphilitic mother has produced a tainted infant and the father undoubtedly been free. Any attempt, then, to refute the views of those who have argued otherwise would be superfluous on my part, and I will proceed to attempt an investigation as to whether there are any differences in the frequency and severity with which the infant is affected dependent on the parental source from which the complaint is derived.

Apart from the consideration of disturbing elements introduced by such factors as the length of time elapsed from primary infection and the amount of treatment,

there are other inherent difficulties in the way of estimating the paternal influence as regards the frequency of transmission of syphilis and its severity in the infant. One such difficulty lies in the fact that the mother may possibly have been affected in the ordinary manner, although she may exhibit no signs of the disease, and then it becomes a matter of impossibility to rightly assign to either parent his or her due share in the production of the complaint. Another difficulty arises from the assumption that every mother bearing a syphilitic infant has herself contracted the complaint from the fœtus *in utero*—a contingency that will be considered later when dealing with the question of "syphilis by conception." On one point bearing on the paternal influence, however, all observers are agreed. This is that a very large proportion of the mothers of syphilitic infants exhibit no outward evidences of the complaint themselves even after prolonged and careful search. It is only in such cases as these that any estimation as to the paternal influence in syphilitic heredity

can be attempted. When writers such as Fournier, who believe in the doctrine of "syphilis by conception," give statistics as to the paternal influence, they simply refer, I take it, to cases where there is certain proof of the disease in the father and where there is an entire absence of the ordinary signs of it in the mother. Fournier's statistics as to the paternal influence, subject to the reservation I have stated, are as follows. From notes of 1127 pregnancies in his private practice where the father alone was manifestly syphilitic, he places the mortality amongst infected children at 28 per cent. In his hospital practice, from notes collected by Mademoiselle Krikus, he places the mortality where the father alone was syphilitic at as high a figure as 48 per cent., an increase fully accounted for by the difference of surroundings of the parents in private and hospital practices. Kassowitz, who denies the doctrine of syphilis by conception, gives the following figures: out of 105 pregnancies where the father was syphilitic, there were 26 abortions, 21

children who died early, and 58 who survived. This gives a percentage of mortality of 26·5, a result closely in accord with Fournier's record from private cases. I have collected notes from my out-patient practice at Shadwell of 100 families where the mother presented no signs of syphilis and the disease in the infant was presumably derived from the father alone, and a similar number where the mother was unmistakably syphilitic. They are, of course, subject to the disadvantages attaching to notes gathered from patients actually brought for inherited syphilis, and that they refer to infants born at widely differing periods from the times of primary infection. Subject as they are to these sources of vitiation, they are still not without interest. In the first set, where the mother was apparently free from syphilis, there had been 563 pregnancies, resulting in 187 abortions, 193 children who died early, and 183 children still living. This gives the high mortality of 56·6 per cent., but poverty and other factors are probably as much responsible for it as syphilis when

dealing with East-end babies. But the mortality amongst affected infants by no means adequately gauges the evils of syphilis on the offspring. Its responsibility for death of the fœtus *in utero* and the harm wrought by it in infants who survive must also be taken into account in this respect. Fournier, reckoning up the number of abortions and the number of infants attacked by inherited syphilis, and comparing their sum with the total number of pregnancies, has deduced what he terms "indices of harmfulness" (*nocivité*) for parental syphilis. This "index of harmfulness" when the father alone is syphilitic he places at 37 per cent. But a true "index of harmfulness" is only to be arrived at by following out the whole of the child-begetting histories of numerous syphilitics; an opportunity, however, for doing this is never likely to fall to any one observer. Were it possible to gain such statistics I cannot but think that Fournier's "indices of harmfulness" would be materially lowered.

The marked effect of time in decreasing

and annulling the power of the father to transmit cannot be gainsaid. But it is difficult, or rather impossible, to give any definite limit of time beyond which this power of transmission is entirely lost. Mr. Hutchinson is probably right in the main in limiting the time during which the father can infect the mother at five years from the date of his own infection, and also in his statement that such an eventuality is rare even after the lapse of only three years. That the power of infecting the offspring, however, may long outlast that of directly infecting the mother cannot be doubted. Kassowitz from his own experience would give the limit of time during which transmission to the offspring is possible at from ten to fourteen years after primary infection, and he also propounds the important aphorism that if there is even a remote chance of the mother being contaminated in such a case inheritance by her offspring is a certainty. That the power of transmission can be retained by the father for a longer period than that assigned by Kassowitz is

sufficiently proven. Henoch quotes a case from his own experience where syphilis in the infant was due to disease contracted by the parent more than twenty years before. Dr. George Ogilvie has published a case in which amongst other interesting facts was the one that nineteen pregnancies, spread over nineteen years from the date of infection of the father, all resulted in syphilitic infants or abortions, and this in spite of prolonged and vigorous treatment. Dr. Colcott Fox mentioned at a meeting of the Royal Medical and Chirurgical Society that he had known a case where the transmission from parent to infant took place more than twenty years after primary infection. Dr. Eustace Smith, too, tells me of the following case. A medical man married fifteen years after contracting syphilis; his wife during the first five years of her married life had several abortions. Dr. Smith saw the first living child, born more than twenty years after the contraction of the disease by the father, and it was deeply syphilitic, although the mother was apparently a

strictly healthy woman. I have personally known a case where the fourteenth pregnancy, sixteen years after the incurrence of syphilis, resulted in a tainted infant. Happily, such cases of long retention of the power of transmission are rare. In very exceptional instances, however, it might well be, judging from the cases given, that the power of transmission is only limited by the child-bearing or child-begetting capacities on the part of the parents.

That time alone, independently of any treatment, may abolish the capability of the father to transmit is undeniable. Before finally annulling the power of transmission lapse of time engenders the quality of rendering transmission less certain. When this stage is reached at which transmission is uncertain, though possible, it becomes a mere matter for surmise what determines the infection of the infant in one case and freedom from it in another. That such infection is dependent upon any fresh outbreak of symptoms in the father is not proven. All

the same, I should consider the father more likely to transmit the disease at a time when he had outward manifestations of the complaint than he would at a time when all symptoms are latent. At whatever period of the disease the father transmits, if he transmit at all, he probably does so with the same intensity as he would do at the beginning of his syphilis when transmission was almost certain. The case of an infant in this respect is identical with that of a woman. When a man late in his syphilis, having reached the stage at which transmission is uncertain, contaminates a woman, there is no proof that such a woman acquires a milder form of the disease than she would have acquired at a time when his syphilis was recent and transference certain. In other words, there is no proof that lapse of time brings with it attenuation of the virus. And so with regard to the infant. When a syphilitic man and a healthy woman bear a succession of infants, I grant the gradual lessening of the severity, and tendency to eradication, of the

complaint in each succeeding infant. This diminution of the symptoms in successive infants by the same couple, where the father alone is syphilitic, is not, however, necessarily dependent on the assumption of any progressive increase of attenuation of the virus in the man. In fact, I believe that such lessening severity in the successive infants is independent of the father, and due entirely to the presence of some product in the mother, this product being by her absorbed from the fœtus *in utero*, and in amount proportional to the number of syphilitic conceptions she has carried. When a syphilitic man, by the same woman, has begotten a succession of infants in the latest of whom the syphilis has decreased to the vanishing point, we have no proof that, if he still retain the power of transmission, he would not in other women beget infants with syphilis as virulent as that in the initial conception by the first woman. Indeed, such slight evidence as we possess would tend to prove that he would. Plenty of cases are on record where men, many years after

infection, have begotten infants with syphilis as virulent as in any born within a short period after the primary disease. Diday's law of decreases I hold to be true in the main, but only as regards infants from the same couple.

The effects of treatment in limiting the power of transmission are still more marked than those of time alone. But again we have no proofs, where the man alone is affected, that treatment any more than time can furnish an attenuated virus; and, however fully a man may have been treated, if he transmit at all, he probably transmits in full to woman or infant. Obviously such a rule does not apply in the case of the woman, for the mercury taken by her may help to mitigate the disease of the fœtus *in utero*. What would seem remarkable about mercury is not its power of attenuating the virus transmitted, but its power of temporarily preventing transmission altogether, and especially if it be administered about the times of procreation. A case recorded by Fournier is a striking example of this: "A young

man, against the advice of the last-named, married in the first year of his syphilis, but continued his treatment. His wife conceived and bore him a healthy infant. Thinking, by this latter fact, that he was absolutely cured, he left off his mercury; he then infected his wife, whose second pregnancy resulted in a deeply-infected infant." Diday, too, quotes cases where by the administration or withholding of mercury healthy or infected infants were alternately produced. There, is however, a mathematical precision about some of these cases that makes them difficult of acceptation. All the writers, however, in dealing with this power of mercury describe the infants born under the conditions in question as "healthy," and not as merely suffering from a mitigated form of the disease.

Time and treatment are concerned in another question of great practical importance—viz., the date at which marriage should be sanctioned in a man after the incurrence of syphilis. A definite answer, applicable to all cases, is, I think

impossible and unadvisable. The age at which the disease was contracted, the varying degrees of severity of the symptoms, the amount of treatment and the lapse of time over which it has been spread, are all factors which must largely qualify the answer in every instance. As it may be of interest, I will give the dates after primary infection at which some modern authorities consider a man is justified in marrying, with a fair prospect of not transmitting the complaint to wife or offspring. Schuster of Aix-la-Chapelle, who has written a *brochure* on the subject, places the date at two years after primary infection. Mr. Hutchinson finds the same period, and says he has only once had to regret his sanction to marriage after this interval. This is, perhaps, more a tribute to the results of his treatment than a warrant of justification for others to follow his example in sanctioning marriage at so early a date. Mr. Hutchinson, however, is emphatic on the point. "Probably," he writes, "in the vast majority of cases the risk of transmission to children is over

long before the end of two years." With this favourable view of the matter I cannot but think that he will find many authorities to disagree. Mr. Cooper would allow marriage three years and Fournier and Otis four years after first infection. Kopp and Lesser would extend the time to as long as five years. Personally I am in most cases in favour of the longer interval. The responsibility of sanctioning a marriage with any risk of imparting syphilis to others is not to be lightly undertaken. Diday's sarcasm, "that the extreme caution displayed by some authorities on the matter would soon depopulate the earth," I think can be ignored. If treatment has been thorough, and delay of marriage in any way detrimental, I would shorten the interval to one of two years after the disappearance of all active symptoms, or to one of three years after primary infection. In no case would I sanction marriage until at least three months after the disappearance of active symptoms, no matter how long a time had elapsed between their appearance and the incurrence of the complaint.

That syphilis in the mother can be transmitted to her infant when the father is healthy is now placed beyond all manner of cavil of doubt. It was the mother alone that Hunter accredited with the transmission of the complaint in the days whilst he yet believed in the reality of hereditary syphilis. As the father is the introducer of syphilis into the household in the vast majority of instances, it is somewhat difficult to meet cases of hereditary syphilis where there is a positive guarantee of the mother's sole responsibility for the transmission, and on this point I have to rely on the statistics of others. Fournier has recorded the cases of 13 syphilitic women whose husbands were free, and 28 pregnancies in these women resulted as follows: 7 children living, 4 syphilitic; 15 infants died at birth or soon after; and 6 abortions. Fournier gives the percentage mortality amongst infants born alive of syphilitic mothers as 60, but it reaches as high as 68·1 if calculated from the figures last given. Kassowitz records the results from his

own practice of 40 pregnancies where the mother alone was syphilitic, and they gave 18 abortions, 5 children died early, and 17 living children. This gives a percentage mortality of only 22·7 as compared with Fournier's 60, but the percentage of abortions is incomparably higher in Kassowitz's figures than in Fournier's. Elsewhere, too, Kassowitz gives the mortality amongst syphilitic infants, inheriting from the mother alone, as 80 per cent. Fournier's index of harmfulness for maternal syphilis is 84 per cent.; but as he probably formed it on statistics drawn from mothers bearing infected infants, it is in all likelihood much too high if intended as applying to the whole community of infected mothers. Two other questions concerned with syphilis in the mother—the effect on her offspring, of her contamination during pregnancy and "syphilis by conception"—I purpose dealing with later.

In attempting to estimate the influence of syphilis in both father and mother upon the offspring, the disturbing elements of time and treatment have redoubled force,

as here they have to be reckoned with in each parent instead of one only. Fournier, from statistics gathered under conditions as identical as the case permits of, places the mortality of infants where both parents are syphilitic at 68 per cent., as against 28 where the father alone and 60 where the mother alone is syphilitic. Kassowitz, out of 76 pregnancies where both parents were affected, found 28 abortions, 24 infants that died early, and 24 infants that survived, this giving a mortality of 50 per cent. The same author, however, in another series found the mortality as high as 69 per cent. From my notes of 100 families where the mother was syphilitic, and in the vast majority the father syphilitic also, I gather the following statistics. In these 100 families 539 pregnancies resulted in 189 abortions, 203 infants who died early, and 147 living children. This gives a mortality of exactly 58 per cent., a result not differing greatly from that obtaining in my cases where the father alone was affected. Fournier's index of harmfulness rises to 92 for the mixed type of inheritance.

Statistics such as I have given as to the parental influences in transmission are subject to many faults and discrepancies. For a due and reliable estimation of these influences, and their effect upon the progeny, we want more detailed statistics than have as yet been furnished us. Thus, it would be of value if we had the result of pregnancies tabulated according to the number of years elapsing from the dates of primary infection. As an example of this, Kassowitz gives the figures for 90 pregnancies of women contaminated by their husbands and conceiving in the first year of their syphilis, and these resulted in 50 abortions, 38 infants who died early, and only 2 infants who survived. Further statistics of a like character and others giving details as to successive pregnancies, independently of the times elapsed from infection, might be of great practical utility and interest. Rough and imperfect as the statistics are that I have given, I think that they indubitably show that maternal syphilis is more deleterious as regards the offspring than a paternal one, and that the mixed type is

the most serious of the three. The extra severity of the one type over the other, however, is, I believe, entirely exercised upon the fœtus *in utero* and has no influence after birth. The greater severity upon the fœtus of a maternal syphilis over a paternal one is due, probably, to the reason unusually assigned for it, the deleterious influence of the vitiated maternal fluids upon the fœtus *in utero;* and the slight increase in the mixed parental type over the maternal one is possibly owing to a greater certainty and frequency of transmission. Mr. Hutchinson writes: "There is no reason for believing that the infection from the mother (germ transmission) produces more serious results than sperm transmission, or that the child who inherits from both parents suffers more severely than he would if one were free." Exceptions to this rule, he admits, occur in cases "in which children are born with syphilitic lesions actually present or with traces of intra-uterine disease." If I interpret these sentences correctly, Mr. Hutchinson would seem to agree with me as to the extra

severity of one form of inheritance over another being entirely exercised during intra-uterine existence. As a practical point, in any infant brought at the usual age for treatment, I know of no facts that would justify any qualification of prognosis depending on the parental source from which its syphilis might be derived.

I turn now to a subject of practical importance and interest, the effect upon the fœtus of a syphilis contracted by a mother during her pregnancy. For many years one set of authorities strongly asserted that in this contingency the fœtus was usually infected, and another set as strenuously denied it. Even at the present day, in fact, it cannot be claimed that the dispute is settled to the satisfaction of all, although the possibility of infection of the fœtus is commonly accepted. Diday, who is much quoted on the point, lays down the curious rule, and defends it on the anatomical relations of the placenta, that if a mother is infected during the first forty days, or after the seventh month of her pregnancy, the child will escape, but the

latter will be syphilitic if the mother be infected in the interval between these times. Kassowitz justly asks, however, if a mother infected during the first forty days of her pregnancy is not syphilitic also in the interval during which Diday claims transmission is probable? Ricord writes: "If the infection of the mother takes place during the last three months, it is not certain that transmission is possible." Mr. Hutchinson, again, doubts whether a woman would be likely to go to the end of her pregnancy who had suffered from constitutional syphilis in the early part of it. Most of the facts in his own personal knowledge occurred in cases in which the disease was incurred by the mother late in pregnancy. There is, then, great discrepancy among authorities as to the time during pregnancy when infection of the mother can occur with the production of a syphilitic infant. Fournier, who believes in the infection of the infant through a syphilis incurred by the mother during pregnancy, follows Cazenave and Diday in adopting the name of "congenital

syphilis" for the type of complaint in the infant under these conditions, restricting that of "inherited syphilis" for the class of cases originating at times of conception. He, moreover, claims that the symptoms of this "congenital syphilis" are easily distinguishable from those of inherited syphilis. Mr. Hutchinson will not admit of any possible differentiation of symptoms in the two classes, and throws the onus of proving any difference between them on those who assert it. There is, then, as great a contention amongst leading authorities as to the symptoms in the infant as there is regarding the times of pregnancy at which a mother can be infected with transmission to the infant. Kassowitz and other German authorities deny the transmission to the infant at whatever period of pregnancy a mother may be infected. There is no proof, Kassowitz argues, that in any one of the cases where a mother was infected during pregnancy and produced a syphilitic infant that such syphilis was not derived from the father at the time of conception. But

if he admitted the possibility of the carrying of a syphilitic fœtus for several months in her uterus, and the subsequent contamination of the mother, Kassowitz in this way allowed the possibility of what is in reality an equivalent of a breach of the first part of Colles' law, a deduction from his belief that would seem to have escaped this astute observer. Personally, I have no experience in the matter; but in all the cases of this nature, under the care of my friends, the infants escaped. I have, moreover, met with twins born of a syphilitic mother, where the one infant was deeply affected and the other apparently free, and I know of similar cases under my colleagues. This circumstance would seem to show that there is no imperative necessity for the inoculation of the fœtus by a syphilitic mother's blood, and also that infection of the fœtus is probably most often effected through the ovum. Henoch has never known a case of a mother contaminated during her pregnancy, but he deems transmission to the infant likely under such conditions. Birch

Hirschfeld knew three instances where a mother was infected during pregnancy. The infants born from these pregnancies died soon after birth from some complaint other than syphilis, and the necropsies revealed no trace of the last disease, not even the characteristic changes so generally found in the epiphyseal cartilages. Birch Hirschfeld, nevertheless, believes that transmission is possible to the infant under the conditions in question, but that such transmission is not possible so long as the integrity of the endothelial barrier between the maternal and fœtal circulations is maintained. He claims to have proved that any affection of this endothelial barrier, permitting of the passage of micro-organisms from the mother to the fœtus, is secondary to serious vascular disease in the maternal portion of the placenta. If his views are correct, then contamination of the fœtus under the conditions in question must be allowed as possible, but abortion or the entire escape of the fœtus would seem much the most probable result. When writers like Mr.

Hutchinson and Fournier cite cases where the infant has inherited the disease incurred by its mother during her pregnancy, I take for granted that they have satisfied themselves as to the freedom of the father at the times of conception, and I accept the possibility of the transmission to the infant. Nevertheless, I believe that what is possible has unwittingly been exalted into what is probable. To thoroughly settle several of the points concerned in the question, we want the publication of further cases giving details as to the freedom of the father at the time of conception, the date of infection of the mother in her pregnancy, and a full description of the symptoms in the child.

The converse of the preceding question, the effect upon the mother of the blood returned to her through the placenta from a syphilitic fœtus, may appropriately be taken here. This, amongst others, involves the much-debated subject of "syphilis by conception." First prominently promulgated by Ricord and Diday, the doctrine of "syphilis by conception" has been

alternately advanced and denied by every eminent writer on syphilis since their time. Some of the uncertainty and contention on the subject has undoubtedly arisen from a want of due appreciation of what is really implied by "syphilis by conception." It is not very uncommon to find the term used in connection with the disease in the infant—a strange confusion of ideas. Under these circumstances I trust it will not be deemed superfluous if I define what is implied by the term. "Syphilis by conception" is the syphilis supposed to be acquired by a healthy mother by means of the tainted blood, returned to her through the placenta, from a syphilitic fœtus infected by the sperm of the father—a "syphilis by return shock," as Diday calls it. The term, of course, implies an escape of direct infection of the mother by the father, and that her syphilis is solely and entirely due to the fact of her conceiving. It is claimed by many eminent authorities that if a woman cohabit with a man incapable of directly contaminating her, but who is still capable

of transmitting to the fœtus, such cohabitation may be harmless to the woman unless she conceives, but that this last condition of necessity leads to her impregnation with syphilis. More than this, the syphilis, such writers allege, which had lost much of its virulence in the man, is, merely from the fact of conception on the part of the woman, regenerated in her with all its initial virulence—"*vires acquirit eundo*," as Diday quotes. Such are some of the principles underlying the theory of "syphilis by conception." It is a syphilis, its upholders claim, agreeing with one acquired in the ordinary way in all secondary manifestations and sequelæ, but nevertheless possessing certain characteristics peculiar to itself. Fournier, the most able advocate of the doctrine at the present day, has styled it a "syphilis decapitée," inasmuch as with it there is an entire absence of primary chancre and enlargement of the corresponding glands, and the periods of primary and secondary incubations are abolished. For the establishment of "syphilis by conception" in any

particular instance, its upholders allow that proofs of the following essentials must be forthcoming: (1) That the father was free from any innoculable lesion at a time when the date of the mother's syphilis was consistent with the direct acquirement from him; and (2) that the mother has always been free from any primary chancre and any enlargement of glands resulting from the presence of one. The first requisite for the establishment of "syphilis by conception," the absence of innoculable lesion in the father, is absolutely incapable of proof in any instance. It is impossible for any one of us to guarantee the freedom of any patient in this respect at all times and seasons. In many of the published cases, too, of syphilis by conception, it is recorded that sores on the scalp, palmar psoriasis, and such like trifles were missed; and, this being so, how much more readily might a slight abrasion of the penis be passed over by a layman? Such a lesion might, moreover, be easily missed by a medical man even with ample opportunities of examining his patient. The history, then,

of the freedom of the father from innoculable lesion is in no case a partial proof of the possibility of syphilis by conception.

The second requisite—the establishment of the absence of a primary chancre and enlargement of the corresponding glands in the mother—stands on an equally unsatisfactory basis as the preceding one. In a large number of syphilitic women who have never been pregnant the site of the primary lesion is impossible to locate. There are admitted difficulties in this respect applying to women that do not obtain in men. But even in men a careful observer like Mr. Hutchinson has to admit that "in not a few cases he has been unable to ascertain the original site of innoculation." The absence of proof, too, of any glandular enlargement is not conclusive of its non-existence or of that of a primary sore. Where the latter is high in the vagina or on the cervix uteri the demonstration of enlargement of the corresponding glands may be physically impossible. How, then, can it ever be proven that the syphilis of a pregnant woman is

acquired through the agency of conception, when there are such insuperable difficulties in establishing her non-acquisition by the ordinary channels ?

If we turn to the descriptions furnished by the upholders of the doctrine, we find a marked discrepancy amongst them as regards the times of onset of the complaint after conception. Fournier would seemingly place the time at as early a date as three weeks after this latter. He gives the case of a young woman who developed syphilis soon after marriage, and in whom he could find no primary chancre or trace of inoculable lesion in her husband. At the woman's monthly period, however, shortly preceding her syphilis, the menstrual flow was attended with more pain and some firmer clotting than usual. Fournier gravely argues from this that, as there was no proof of primary contagion, this undue clotting and pain were owing to the expulsion of a three weeks' fœtus, and that the short sojourn of this last *in utero* was sufficient to account for a syphilis in the mother. Most of us would,

I fancy, however, find a less subtle explanation of such a syphilis. If Fournier is correct in his interpretation, and syphilis by conception can manifest itself after so short a period as three weeks after impregnation, then in other cases the pregnancy should never be far advanced before the appearance of symptoms. Diday, however, who is chiefly responsible for the doctrine of "syphilis by conception," suggests parturition, or shortly after, as the time at which symptoms of such a syphilis are most likely to appear. There is, then, seemingly a most marked disagreement amongst the upholders of the doctrine on one of its most vital points. Diday is, however, quite clear in his teaching as to the frequency of such a syphilis. "If a woman bear a syphilitic infant," he writes, "I say she has had the complaint herself." Fournier is equally emphatic. According to him, pregnancy with a tainted fœtus, however short a time it may last, implies the certain acquisition by a woman of "syphilis by conception." If there are none of the outward signs of syphilis in

such a woman, then, according to Fournier, she has it in a latent form. As a proof of the reality of this last condition, cases have been instanced where women have borne infected infants by syphilitic husbands, and although presenting no early symptoms of the disease themselves, have in later years appeared with tertiary ones. That such cases do occur will be readily granted, but they are not restricted in occurrence to fertile women. Cases of sterile women, and of men also, in whom the presence of tertiary symptoms is accompanied by an absolutely negative history as regarded primary and secondary manifestations, are far from rare. Charrier's case of this nature, quoted by Fournier, Messrs. Cooper and Cotterell, and others, is to me an ordinary one of a woman in whom, owing to the mildness of the secondary symptoms, the complaint had been missed until the supervention of gummata. Such cases, were they infinitely more common than they are, go but a slight way to prove the reality of "syphilis by conception," latent or manifest.

The preceding are not all the arguments that can be adduced against the theory of "syphilis by conception." Diday, as I have already stated, is generally credited with being the founder of the doctrine. Most of those, however, who have accepted his teaching on the point would seem to pass unnoticed the deductions he drew from it. This is what he terms the "law of increases," and it would seem to me a fairly logical outcome from the establishment of this "syphilis by conception." By this law, Diday asserts, every conception on the part of a woman by a syphilitic partner adds to her syphilis, and these additions tell in their turn upon the fœtus, and thus each succeeding pregnancy results in a product more syphilitic than the preceding one. The "law of decreases," the lessening severity upon the fœtus in each successive pregnancy, only applies, he asserts, to cases where the mother or both parents are affected. When the father alone is affected, which applies to by far the greatest number of cases of inherited syphilis, this "law of increases" condemns

each successive infant in a family as more syphilitic than the last—a dreadful state of things to contemplate if true. But fortunately, I think, all experience proves its falsity and that of the theory that gave it birth. It is repulsive enough that a woman should be compelled to bear syphilitic infants against her will. This repulsiveness would be vastly increased if "syphilis by conception" were proven, and that such a woman could be tainted from her unborn infant. The one slight tittle of evidence in favour of the possibility of "syphilis by conception" is that afforded by Ricord and Diday, and Henoch quotes Fournier and Mr. Hutchinson to the same effect, that they have known women to have lived long with syphilitic partners and escaped contamination as long as they remained sterile, but conception brought syphilis in its train. But cases such as these, where proof of infection by the ordinary methods is wanting, are not sufficient in number to free them from the class dependent on mere coincidence.

I have stated my disbelief in the theory

of "syphilis by conception" and have given the reasons for that disbelief. The theory no doubt arose from the immunity to syphilis displayed by mothers bearing affected infants. That such mothers do enjoy immunity, partial or complete, would seem almost universally accepted at the present day. But immunity to syphilis by no means entails the necessity of having passed through an attack of the disease itself. In accordance with all modern teaching there is every justification for the supposition that syphilis is a disease dependent upon a specific micro-organism. It is true that hitherto attempts at identification and cultivation of the responsible organism have not met with a success universally acknowledged. Notwithstanding the failures, or perhaps partial successes, of Lustgarten, Klebs, and others, the prevalent opinion that syphilis is a germ disease has not been shaken. If, then, syphilis be a germ disease, the termination of an attack in the individual is brought about by the evolution by the germs themselves of some chemical principle

antagonistic to their own growth and existence. By analogy with other complaints this chemical product is possibly an antitoxin, the syphilitic equivalent of that occurring in diphtheria. Now, if the syphilis in an infant, inherited from the father, is ever a contagious disease, this last of necessity implies the transference of active micro-organisms from the father to the fœtus. Once implanted in the fœtus, the evolution of these micro-organisms could be as active *in utero* as in extra-uterine life, and with their growth would ensue a corresponding production of the "syphilitic antitoxin." Now, the possibility of the passage of such a substance as this "antitoxin" into the maternal circulation no one would contest, although many would do that of the germs themselves, with the consequent syphilization of the mother. Chauveau has recorded some observations with a close bearing on this point. He claims to have proved that when gravid sheep are inoculated with "symptomatic anthrax" the lambs they drop are immune to that complaint. This immunity, too, Chauveau states, is not due

to the direct passage of the anthrax germs themselves to the lambs, but to that of some product generated in the mother and absorbed by her progeny by means of the placental vessels. In an exactly analogous manner to this last, although the direction of the stream is reversed, I would suggest that a mother may absorb the antitoxin from her syphilitic fœtus and so gain immunity for herself, partial or complete. In this way such a mother, without having incurred the actual complaint herself, may have gained the position of one who has passed through and recovered from an attack of syphilis. In this last deduction from the germ theory of syphilis I am seemingly supported by many. For a further deduction—a wild speculation it may be called—I fear I must charge myself with the sole responsibility. It has occurred to me that if the immunity in the mother has been gained by the absorption of some "antitoxin" from the fœtus, this substance may in its turn beneficially react upon the fœtus *in utero*. In the case of a first conception the absorption of the

"antitoxin" by the mother, and its consequent diffusion through the two circulations, may be detrimental to the fœtus and to some extent explanatory of the more untoward results of first syphilitic pregnancies. But in succeeding pregnancies the mother's "antitoxin" would act upon the fœtus from the start and with much more marked effect. With each pregnancy the amount of antitoxin in the mother would be increased, and it may be that its accumulation would be sufficient to cure the disease in later conceptions, although all the time the father transmit in full. Such a theory would seem to me fairly explanatory of the extra severity of the complaint in the first infant in a family, the lessening severity in each successive infant, and the final disappearance of the complaint in the latest ones. It would also account for the greater severity *in utero* of a mixed parental or maternal syphilis over a paternal one. By the theory, too, the later infants in a syphilitic family, although presenting no signs of the complaint, should be immune to it,

and possibly also the earlier infants by a second husband, who is free, of a woman who has borne infected infants by a former partner. In conclusion, I would suggest that if the serum treatment of syphilis is deemed worthy of further trial, such serum should be taken from mothers who have borne affected infants and themselves remained free, rather than from persons broken down with tertiary symptoms.

LECTURE II.

MR. PRESIDENT AND GENTLEMEN,— In my last lecture I dealt with the parental sources of inherited syphilis. I now proceed to treat of the symptoms of the complaint in the infant. These symptoms are so numerous and varied and affect so many parts of the body, either separately or simultaneously, that any elaborate treatment of any single one of them is incompatible with the time at my disposal. In fact, I feel that instead of attempting to deal with such a controversial subject as infantile syphilis in its entirety, it will be well to restrict myself to a more thorough consideration of a selected number of the chief manifestations of the complaint. Even as it is I must pass over many parts of the subject, not on account of their lacking either consequence or clinical interest, but because time will not allow

me to deal with them in a manner at all commensurate with their importance. Some others of the less debatable points I also ignore, lest I incur the charge of "demonstrating the obvious and expatiating on the commonplace."

That the symptoms of inherited syphilis may be apparent in the dead-born fœtus or in the living child at birth must now, I think, be conceded by all. The word of obstetricians, who are the only persons with any great opportunities of experience on these points, is unanimous in this respect. It is true that such symptoms as maceration of the fœtus and the like—a necessary consequence of its retention *in utero* after death—were formerly too often and falsely ascribed to syphilis. The proof that such symptoms were not necessarily dependent upon syphilis, however, in nowise detracts from the testimony of the better informed, who have found uncontrovertible evidences of syphilis in the viscera, bones, and other organs of still-born infants. It is unnecessary, however, to dwell upon such cases; equally

unnecessary, too, is it, I consider, to linger on the cases of infants presenting signs of unmistakable syphilis at birth. Such infants, in the vast majority of instances, are only foredoomed to die after the briefest span of life, even under the most skilful treatment and care. If recovery has taken place in infants presenting unequivocal signs of syphilis at birth, such recoveries are so exceedingly exceptional that any lengthy discussion on them would be unprofitable at the present place and time.

I have just said that infants born with unmistakable signs of syphilis speedily die. So short is their existence that few, if any, find their way to children's hospitals and kindred institutions. There is, however, one symptom of syphilis often present or commencing at birth that may appropriately be dealt with now. This is the marasmus or wasting that forms such a prominent feature in many cases of inherited syphilis. Now, marasmus in a new-born child is far from being a certain proof that such a child is syphilitic. More

than this, as a rule it does not manifest itself in syphilitic infants before other symptoms have cleared up the diagnosis, and in many syphilitic infants marasmus may never supervene. But still wasting may be the earliest symptom of inherited syphilis in the infant. I have known numerous infants brought to me at the East London Hospital for Children for wasting dating from birth develop other unmistakable evidences of syphilis whilst under observation. These infants have almost invariably died. Other marasmic infants whom I fancied were syphilitic have died before unequivocal signs of syphilis had possibly had time to develop. With these facts before my eyes, I have on numerous occasions placed infants, in whom wasting was the only objective sign, on a course of mercury, where the family history was suggestive of syphilis. This treatment has, I think, been attended in some cases with success, although the measure of success is not a great one. Some of these infants both gained flesh and developed syphilitic manifestations under the mer-

curial treatment. Others, whilst improving under mercury, developed no further syphilitic symptoms, owing possibly, I thought, to their abeyance under treatment. But early marasmus in syphilitic infants is of such grave import that treatment, let this be as early as it may, can claim but few successes.

The marasmus I have just mentioned is that present at birth or commencing soon after it. Such cases form but a small minority of those where marasmus plays a prominent part in inherited syphilis. Most syphilitic infants are plump and well nourished at birth and usually exhibit no trace of their complaint until a month or so later; then marasmus is apt to develop simultaneously with snuffles and rash. These last may disappear under mercury, but the marasmus is prone to persist, and death may result from it at a period when all the more characteristic symptoms of syphilis have passed away. In other cases of undoubted syphilis, a fatal marasmus may delay its appearance until months after that of the specific symptoms proper.

It is in hand-fed infants, however, that marasmus has its most frequent and pronounced occurrence. Breast-fed infants, if specifically treated, usually escape it. It is only in such marasmic infants, I am inclined to agree with Henoch, that the peculiar *café-au-lait* tint of skin appears which Trousseau described as characteristic of cases of inherited syphilis in general. With Henoch and some other writers, too, I am at one in regarding marasmus as the most important factor in prognosis in the complaint. Other points that have been laid stress upon by some authorities, such as the early appearance, amount, and character of the eruption, the extent of the involvement of the viscera in the complaint, are, in my opinion, but seldom of the same prognostic significance as wasting. Henoch practically sums up the question of prognosis with the assertion that wasting infants die, but well-nourished ones recover. Many wasting syphilitic infants, if they do not actually die from an obstinate and progressive asthenia, are very apt to do so from some intercurrent disease, such as

collapse of the lung or diarrhœa, which they might have escaped or recovered from had they possessed greater vitality.[1]

Thus far, except when it was present at birth, I have only treated of marasmus in connexion with syphilis in cases where the diagnosis of the latter was confirmed by the more unequivocal symptoms of the complaint. Cases where these last can be adduced in confirmation, however, in my opinion are far from being the only ones where an association between infantile syphilis and wasting can be traced. I have seen numerous infants in whom the only objective sign has been an obstinate wasting, and where the family history alone has been inferential of syphilis. Such cases occur in infants of any age, from that of three or four months upwards. The question arises as to how far it is justifiable to regard such cases of wasting as syphilitic

[1] In connection with this part of the subject, I may mention that my colleague, Dr. Dawson Williams, has made the important observation that the mortality amongst the later children of syphilitic families is unduly and excessively high, even when such children have not exhibited any of the ordinary signs of the inherited complaint.

where there are no direct evidences of that complaint beyond, possibly, the family history. The majority of authorities would, I believe, protest against such an assumption as unjustifiable from the absence of the more characteristic symptoms, and as unduly and unnecessarily extending the domains of syphilis to unknown limits. Accordingly, whilst in most descriptions of inherited syphilis wasting is mentioned in connexion with other symptoms, it is in but few that it is treated as possibly the only manifestation of the complaint. For my part I can see nothing unreasonable in the diagnosis of syphilis in many wasting infants in whom there is an entire absence of specific symptoms, and in this contention I am happy in being supported by the majority of my colleagues. Snuffles and rash and other symptoms may be very evanescent, occasionally missed, and even when marked may disappear with doses of mercury totally inadequate for the cure of the complaint. Again, the first appearance of specific symptoms may not occur for many months later than the majority

of text-books allow. Nowadays, moreover, we are even told that the manifestations of inherited syphilis may be retarded until puberty or many years later still. In numerous ways, then, it may well happen that one may be frequently called upon to treat a case of syphilis in an infant in whom the only noticeable symptom is obstinate wasting, and in whom there is a totally negative history as to more unequivocal manifestations both in the present and the past. Dr. Donkin is, as far as I know, the only writer who has deemed such cases worthy of separate description, and he has done it so graphically that I need not go over the ground again. These cases of syphilitic atrophy are peculiar, he considers, in that they are not attended by any noticeable amount of diarrhœa or vomiting, and I agree with him in this and in his estimation of them as a large and important class that has not received sufficient attention at the hands of the profession.

The result of specific treatment cannot be applied as any fair test as to the

syphilitic nature of such cases. Syphilitic infants with atrophy generally die, whether such atrophy date from birth or many months later, and whether treated with mercury or not. In some few cases I think I have succeeded in checking the wasting by means of that drug. In one or two younger infants, moreover, the use of mercury seemed to bring out other and more certain signs of syphilis beyond the wasting. The improvement in nutrition produced by the drug appeared to allow the production of these other syphilitic symptoms in infants previously too reduced in vitality for their manifestation, but their appearance with the administration of mercury may have been mere coincidence. The failure of mercury in infantile syphilis where atrophy is a prominent feature is readily accounted for by the post-mortem revelations in such cases. These show that the atrophy is by no means limited to the external parts under observation, but that it involves the internal organs at the same time. In many such cases the small intestine is found to be

almost practically deprived of its mucous and muscular coats, being little more, in fact, than a semi-transparent tube of peritoneum. To a less degree the stomach and large intestine suffer from the same destructive change. With this atrophy of the secretive and absorptive surface of the intestinal tract it is evident that no satisfactory digestive processes could possibly take place. The liver, too, in many instances is found markedly fatty, and this probably assists in maintaining the failure of nutrition. The condition of intestine I have just alluded to is found in other cases of atrophy besides those arising from syphilis, but it is in these latter, I believe, that it finds its most frequent and pronounced appearance. Dr. Donkin alludes to it in his work on Children's Diseases, but I know of no satisfactory account of it in the leading pathological treatises.[1] Here I may say that this is the only abnormal

[1] Since this was written, Dr. Soltan Fenwick has published an interesting article on "The Pathology of Infantile Marasmus" in the *British Medical Journal* of September 26, 1896, in which atrophy of the intestine is dealt with at some length.

condition of intestine that I am personally acquainted with in inherited syphilis. At numerous necropsies I have seen nothing resembling the gummatous indurations of the mucous and muscular coats or of the condylomata and ulcerations occurring in Peyer's patches, described by Oser, Jürgens, and others. The atrophic condition I have mentioned is amply sufficient to account for the mortality in such cases. Mercury may be capable of combating the syphilitic diathesis accountable for the condition, but it cannot replace the wasted glandular intestinal structures on which nutrition depends.

In an apparently healthy infant, presenting as yet no signs of the parental disorder, I think it will be admitted that a mercurial course as a preventive or precautionary measure is inadvisable, if not unjustifiable. This being so, then the limit of time of possible onset of symptoms is no unimportant question, not only on account of relieving parental anxiety, but of releasing the infant from the stricter forms of medical supervision. A great diversity of opinion

as to the limits of time in which initial symptoms are possible occurs amongst authorities. On two points, however, all observers are agreed, these being that in the majority of cases symptoms appear in the second month of life, and that their primary manifestation is exceptional after the third month has expired. All experience agrees on these points and statistics amply confirm them. Kassowitz, indeed, would seem to doubt whether the primary manifestation of symptoms is ever deferred beyond the third month. Dr. Radcliffe Crocker asserts that the initial symptoms are never delayed beyond the sixth month. Henoch writes: "After the second, or still more after the third month, it is rare for them to appear for the first time; and when they occur still later it is always doubtful whether it is not a case of recurrence or of direct transmission." With these last-named writers I cannot agree. I have not infrequently seen infants where snuffles and rash had primarily manifested themselves much later in the first year of life than the sixth month, and one or two

where symptoms had been delayed until the second year. Of course, I may be told that such cases were those of a relapse, and that the first appearances of the complaint had been missed. Such an assertion is equally easy to make as hard to disprove. I would only say that in my experience relapses of the skin affection are somewhat rare in the later months of infancy, the common expressions of a relapse at such times being the presence of mucous tubercles or condylomata. If we may believe, moreover, in the reality of a "syphilis tarda," so commonly accepted now, then I can see no inherent improbability in the first manifestations of the complaint occurring at a much later infantile age than is usually taught. Dr. Donkin has already written to the same effect, and I gather that others are now inclined to extend the limit of time during which initial symptoms are possible to at least twelve months from birth.

The first obvious manifestation of inherited syphilis is usually the well-known snuffles. This generally precedes any

affection of the skin, and in only a small minority of cases is the skin eruption simultaneous with, or anterior to, the snuffles. It is only in very exceptional instances, too, that the swelling of the nasal membrane causes distress and difficulty in sucking before the snuffling develops. Snuffles, which usually precedes all other symptoms, may also long outlast them. A few doses of mercury may cause the disappearance of all skin eruptions, but snuffles may persist for many months as the sole evidence of the complaint.

The prominence of snuffles in hereditary syphilis has often led, I fancy, to an erroneous diagnosis of that complaint from the presence of this one symptom alone. When it is marked and persistent in character I would admit a justification for the suspicion of syphilis in a large majority of cases in which it occurs. But the extreme sensitiveness of the nasal mucous membrane in infants leads to a minor degree of snuffling from many causes in cases where syphilis is out of the question. This sensitiveness of the nasal membrane

persists for about the first year of life, and any undue exposure to cold may bring on a greater or slighter degree of snuffles in many infants. Its temporary character and the absence of other signs ought to be sufficient to dispel the suspicion of syphilis in the majority of such cases. There is, however, one complaint peculiar to infants where the presence of marked snuffling may mislead even the more wary. This is what Henoch has aptly named the "acute coryza of infants." In this an infant, generally after exposure to cold wind, is suddenly seized with high temperature and acute nasal obstruction, followed shortly, in most cases, by laryngitis or bronchitis. If seen for the first time towards the end of an attack, when all acute symptoms have subsided, the combination of hoarseness or voicelessness along with intense snuffling is very apt to lead to a confident, although erroneous, diagnosis of syphilis. The acute nature of the attack ought to prevent mistakes in any one acquainted with Henoch's description of the complaint. In one case of this kind I knew dire offence

given by an incautious catechising of the father which a short delay would have served to prevent.

The syphilitic affection of the nasal structures in infancy responsible for the snuffles generally leads to some broadening and depression of the root of the nose, more apparent, perhaps, than real. In most cases this is entirely recovered from, and the child grows up with a nose as well shapen as in those who are non-syphilitic. In a minority, however, a nasal deformity incurred in infancy persists throughout life. I have never in such cases noticed any undue fœtor in the nasal secretion suggestive of active bone destruction, nor have I ever learnt of the discharge of palpable portions of bone and cartilage which Diday and others write about. The explanation of the permanent nasal deformity incurred in infancy lies rather, I think, in changes occurring in the cartilage which interfere with its nutrition, and this defective nutrition is followed by arrested development. But beyond infancy there is no doubt that active destruction of the

nasal bones can occur from inherited syphilis, and the usual time for this is generally from the age of four years to that of puberty. Not very infrequently, I believe, cases treated for strumous ozœna, with bone destruction, have their origin in inherited syphilis rather than struma, and I have known mercury and iodide successful in such cases where other measures have failed. In one interesting case I saw through the kindness of Dr. Julius Jacobson, active nasal bone trouble occurred as late as the age of thirty-four years in a woman who was undoubtedly the subject of inherited syphilis.

The affection of the nasal membrane has little, if any, tendency to spread to neighbouring parts, and in the early stages of infancy the pharynx generally appears perfectly normal. Diday dissents from this, as he states that repeated examinations only resulted in his finding insuperable difficulties in the way of pronouncing with any certainty as to the freedom of the pharynx in very young infants. At any rate, his repeated examinations did not

enable him to find any frequent affection of the pharynx in such cases. What has been said as to the pharynx applies equally to the mouth in very young infants. Any shallow ulcerations of the mouth found in them are generally due to aphthous conditions, which are common enough in babies with no suspicion of syphilis. Henoch agrees with this, and gives useful warning against mistaking ulcers along the middle line of the palate in young infants for specific manifestations. Although in early infancy the mouth and throat are free, yet in infants some months old, whether with a relapse or not, the tonsils, fauces, palate, and buccal membranes may be the sites of a few scattered ulcers unmistakably specific in character. These affections of the mouth only occur in a minority of cases, and the infants in whom they appear are seldom less than four months old, and generally some months older than this. Fissuring of the lips, too, is a later symptom than some of the text-books allege. The infrequency of sores about the mouth and their late appearance

in the disorder have, I believe, important bearings on the spread of the disease from infants to others.

Along with the sores in the mouth I have usually found mucous tubercles at the angles of the lips and often on other parts of the body where there is a combination of moisture and warmth. These mucous tubercles have been often described as one of the earliest symptoms of inherited syphilis, but this I am certain is a decided fallacy. Their real place is amongst the later signs that may occur in infancy. They are the commonest symptoms of all in relapses, and may recur from time to time, as the sole evidence of the disease, until the child is five or six years old. Henoch has pointed out the much greater luxuriance of the growth of mucous tubercles and condylomata in the acquired syphilis of children than in the inherited form, and in this my experience fully tallies. I have seen cauliflower masses of condylomata in acquired syphilis in children such as I have never seen approached in inherited

cases. These mucous tubercles afford the surest evidence of syphilis where other signs are doubtful. I quite agree with Mr. Hutchinson that one well-formed mucous tubercle or condyloma is pathognomonic and an incontrovertible proof of the complaint.

The skin eruptions have been so frequently and fully dealt with by others more competent than myself that I feel any lengthy description of most of them uncalled for. My former colleague, Dr. Radcliffe Crocker, whose experience was largely gained from the same sources as my own, has indeed rendered any attempt in this direction superfluous on my part. All I would propose to do, then, is to take the arrangement and classification laid down in Dr. Crocker's treatise on Diseases of the Skin, and to briefly deal with the different eruptions with such comments as personal observation may seem to warrant. The most frequent sites of the eruption are admittedly the buttocks and adjacent parts, the chin and upper lip, the eyebrows, and the skin behind the ears. In

exceptional and generally fatal instances the eruption may be universal over the body. Of the parts mentioned the buttocks and their neighbourhood are those most frequently affected, and very commonly, indeed, the only ones. I cannot recall a case where there was any very decided eruption where the buttocks remained free. These parts are usually also the first to show the eruption, and are the ones most deeply affected even when it is fully developed on numerous other places. Next in frequency to the buttocks as sites for the eruption come the upper lip and chin. It has been assumed that the reason for these situations being the commonest ones for the syphilitic eruption is that they are the ones most subject to irritation from contact with wet napkins and saliva or mucus. To this view I have never altogether assented. Some of the other parts commonly affected by the syphilitic eruption are subject to no irritation that would explain their prominence in this respect over others of the body. In the acquired syphilis of infants, moreover,

the eruption shows no preference for the parts most affected in the inherited form, although the sources of irritation are the same in each. Other eruptions, too, confessedly owing their origin to some source of irritation, show no special preference for the sites most commonly affected in inherited syphilis. I cannot help thinking, then, that there is some selective influence at work beyond mere irritation that determines the eruption to its favourite sites, the reason of the selection lying deeper than our present knowledge can explain.

Syphilitic roseola, far and away the most common form of eruption in adult acquired syphilis, is extremely rare in the inherited disease. I have never seen an example of it in the latter. Cases are, however, related by Bassereau, Cullerier, Dr. Crocker, and others. The record of single cases by these last-named is sufficient testimony to the rarity they place upon it. Although I have never seen this form of eruption in inherited syphilis, I have several times seen it in the acquired

variety in both infants and elder children. When seen in these last, it differs in no respect either in situation or appearance from that occurring in adults.

Although syphilitic roseola is extremely rare, another of the erythematous eruptions is the commonest of all in the inherited disease. The following account by Dr. Crocker so graphically describes it that I prefer to give it in his own words: "It consists of erythematous patches of various sizes which usually commence on the buttocks and round the anus. They may be well or ill-defined at the edge, bright coppery or yellowish red, tending to coalesce into large sheets of eruption, but generally patchy on the borders. This erythema may extend uniformly on the back and inner side of the legs quite down to the feet, including the soles, which are bright red and peeling. On the front and outer side it is still generally patchy, upwards it often extends to the loins and abdomen, and in a few cases all over the body in patches which coalesce; the whole surface is then red and

desquamating on the dry parts, while on the buttocks or where it is exposed to moisture the scales are soaked off and the surface is left raw or brightly glistening. These generalized cases are very likely to die." As to the fatal nature of these cases with extensive erythema, my experience fully tallies with that of Dr. Crocker, and Henoch writes to the same effect.

A papulo-squamous eruption corresponding to that of acquired syphilis is the next most common one in the inherited complaint. The following description, like the preceding one, is taken from the same source, the work of Dr. Crocker. "It consists of round superficial patches, from one-eighth to half an inch in diameter, very slightly raised above the surface, delicately scaly, with a pink or reddish-brown colour at first, but after a few days of a pale fawn tint. It may be limited to one or more regions, such as the limbs, forehead, or round the mouth, or occupy the whole body surface, usually in discrete patches, and commencing upon the buttocks, where the superficial ulceration is

apt to occur from the irritation of the urine and fæces. A variety of this is a crescentic squamous eruption with a raised border, which in one of my cases began on the buttocks a week after birth and then spread over the thighs and then all over the body, forming map-like outlines on the skin, most marked on the lower part of the body and legs."

Besides this last Dr. Crocker describes three small papular forms of eruption—the acuminate, convex, and flat. The first two may be crowned with a scaly cap, a small bead of pus, and less seldom with a clear vesicle. All these forms occupy the usual sites of the other eruptions, run the usual course, and are not significant of any particular import in prognosis or severity of the disease.

Vesicular eruptions are rare in inherited syphilis, and are usually preceded by other forms of eruption. The skins of syphilitic infants, too, are more prone than those of others to respond to external irritation. In this way eczema and other inflammatory eruptions may break out in syphilitic

infants independently of the constitutional complaint.

Pustular eruptions are much more common than the vesicular, but, like the last, are seldom the primary ones in the complaint. Any of the previously mentioned forms under continued irritation are liable to take on a pustular character. Besides these, however, others may be pustular from the onset. Thus ecthymatous sores are far from uncommon, covered with a greenish crust, concealing sharp-edged spreading ulcers or simple excoriations. They show no preference for any part of the body, and are seldom numerous; but they generally denote a profound cachexia, and are of bad prognosis.

One of the pustular forms is deserving of further notice. This was first described, I believe, by Dr. Barlow, and is known as the "syphilitic furuncle," although a more appropriate name could possibly be found for it. It is of importance as being often the sole manifestation of the later stages of inherited syphilis, and its significance in this respect is, to my personal knowledge,

only too often overlooked. In its typical form it consists of an elevation of the epidermis of the size of half a hazel nut, the raised epidermis being generally of a deep purple colour. There is very slight hardening of the surrounding and underlying skin, and under the purple epidermis is a scanty secretion of ill-formed pus. If left to itself it may persist for long without the skin giving way, but under mercurial treatment it rapidly disappears without scarring. Without treatment it is apt to leave a small nodular thickening in the subcutaneous tissue, with a corresponding slight depression in the overlying epidermis. The same small nodular thickening in the subcutaneous tissue may occasionally be found preliminary to the formation of the cutaneous pustule. These "syphilitic furuncles" are most common, perhaps, in children two or three years old, and are rare before the eighth or ninth month. They may appear anywhere on the body, but are most frequent, in my experience, on the upper and outer aspects of the thighs. As an indication of syphilis,

when other signs are wanting, I consider them of prime importance. On two occasions my diagnosis of syphilis from their appearance alone was confirmed by the discovery of unsuspected mucous tubercles. At one time I looked upon them as pathognomonic of syphilis, but in one case I came across "furuncles," undistinguishable from those described, where syphilis could with certainty be excluded. They indicate syphilis, however, in the majority of instances, and the non-recognition of their significance by many observers is matter for regret.

Bullous eruptions are more common in inherited than in acquired syphilis. Pemphigus is one of the best recognized forms of eruption in the former. It is usually either present at birth or commences a few days later, seldom later than the first week. Dr. Crocker, however, mentions a case where it first appeared in an infant a fortnight old. It is usually confined to the hands and feet, and here more especially attacks the palms and soles. The nail beds, too, are generally affected with

destruction of the nails. The situation of the eruption, mainly the palms and soles, is sufficient to distinguish it from another infantile form of pemphigus, arising from bad hygienic surroundings, which shows no preference for these sites. The bullæ, too, in the syphilitic variety are flaccid, and contain pus or blood; in the other variety they contain clear serum. The almost fatal prognosis attaching to pemphigus in inherited syphilis is disputed by none, and I have never known a case recover. Pemphigus in the later stages of infancy is not uncommon, but when occurring then has no connection with syphilis in particular.

Although gummata are not, of course, confined to the skin, yet they may appropriately be dealt with now, as completing what I have to say on the cutaneous eruptions. All observers are agreed as to the rarity of gummata in the skin in inherited syphilis. My personal experience is limited to perhaps half a dozen cases. In only two of these did they break down, forming the well-known characteristic

ulcers, and even in these two there was a doubt in the history as to whether the syphilis was inherited or acquired. In the others they persisted for a long time, in spite of treatment by iodide, and this increased resistance to that drug would seem, in my limited experience of them, one of the peculiar features of gummata in the inherited form of the disease. The youngest of my patients was about two and a half years old, and the rest several years older than this. What has been said as to the rarity of gummata in the skin applies equally to gummata elsewhere in the inherited complaint. The cases I have seen of older children with destructive lesions of the palate and adjacent parts are not more numerous than the ones where gummata occurred in the skin. In more than one of these, again, the history was doubtful, and I was uncertain whether the disease was inherited or acquired. Gummatous infiltrations of the skin are of interest as being, in the opinion of Dr. Crocker and others, the only skin eruption found in the latest stages of inherited

syphilis. Of this nature are probably the lupus-like conditions described by Mr. Hutchinson as occurring along with interstitial keratitis and allied disorders. These later skin eruptions are certainly rare, but I have seen one or two examples of this syphilitic "lupus" in children near the age of puberty.

One peculiarity about all the skin eruptions in early infancy is the rapidity with which they disappear under treatment, and the little tendency they have to recur provided this last have been at all adequate. Mr. Hutchinson writes: "If an infantile eruption due to inherited syphilis have once disappeared under treatment, it but seldom, in my experience, shows any tendency to recur. The relapses so frequently seen in adults who have acquired the disease find no place in infants." With this opinion of Mr. Hutchinson I agree, provided, as I have said, that the treatment be efficient. During the first year I should not consider it very uncommon for the skin eruptions to disappear and relapse where the treatment had been little or none.

After the first year, however, eruptions of any kind, except mucous tubercles or condylomata, are exceedingly exceptional under any circumstances whatever.

One of the most marked characteristics of inherited syphilis, as compared with the acquired form, is the early and frequent involvement of the viscera in the former, leading to their enlargement. The recognition of the affections of the abdominal viscera in inherited syphilis is not of modern origin, many of the older writers being as fully cognisant of them as those of the present time. The viscera most affected are admittedly the liver and spleen. It is, indeed, in only a minority of cases in my experience that the latter is of normal size. In 100 cases of inherited syphilis under my care I found the spleen enlarged in 62, and in 19 others its size was probably above the normal. Dr. Gee, however, only found the spleen enlarged in 45 per cent. of his cases. The splenic enlargement generally dates from birth, and may certainly exist before any other symptom has manifested itself. In 92

examinations of macerated syphilitic fœtuses, Mewis, cited by Mr. Hutchinson, found the spleen enlarged in 72—*i.e.* about 78 per cent. The fact of its occurrence *in utero* accounts for the early enlargement of the spleen to be found in living infants. In some few cases I have found the spleen enlarged in later months where I was unable to do so in the earlier ones, so that I am not inclined to regard the affection as necessarily a congenital one. The enlargement of the spleen in inherited syphilis is, I should say, very rarely carried to any great extent. In uncomplicated syphilis I have never known the hypertrophy of the spleen so great, at least in the first year of life, as to suggest any connection between it and an associated condition of blood change, although such a connection has been described by others. But anæmia is so common in inherited syphilis—and, indeed, in infants generally of the age in question—that it can seldom be necessary to assume any causation for it in the splenic affection. The profound anæmia and changes in the blood and

bones which are sometimes found along with splenic enlargement in syphilitic infants in their second year are, in my opinion, more fairly ascribable to rickets, which almost invariably complicates the former complaint at that period. It is only in exceptional instances, moreover, that the hypertrophy from syphilis persists beyond the first year.

As far as present knowledge attains, there is nothing specific in the changes in the splenic tissues that lead to its hypertrophy. The resulting pathological condition is a simple hyperplasia of all the splenic elements, and there is nothing, microscopical or otherwise, serving to distinguish this hyperplasia from that occurring in rickets and other infantile disorders. There may be, perhaps, some greater tendency in the syphilitic affection for thickening of the capsule to accompany the other splenic changes. Any conditions allied to gummata I have never seen in the spleen in syphilis. It is true that in one or two post-mortem examinations in children I have seen scarring of the

splenic surface, but this fact in no way necessarily implies the former existence of anything like gummata in the organ.

After the spleen the liver is the viscus most frequently affected. The difficulties attaching to the recognition of the slighter degrees of enlargement of the liver may possibly lead to an under-estimation of the frequency of its affection. Writers of the time of Diday would seem to have regarded it as of almost universal occurrence, the last-named, indeed, somewhat fancifully suggesting that induration of the liver in the inherited form corresponded to the primary chancre of acquired syphilis. Mewis, in the statistics before referred to, in 92 syphilitic fœtuses found the liver diseased in 52 instances. The frequency with which it is found in the dead fœtus would suggest its early occurrence in the living subject, and most cases of syphilitic affection of the liver, I believe, date from birth. The changes in the organ are those of an interstitial hepatitis. Along with the increase of the interlobular tissue there is a certain amount of atrophy

of the cells with destruction of the blood-vessels and thickening of the capsule. The interstitial hepatitis, as a rule, affects the whole organ, but in some cases certain lobes, or parts of them, entirely escape or are less affected than the rest. Even with extensive disease of the organ gummata of the liver are exceedingly rare, if not unknown, in infancy. In older children I have seen them post mortem, and in two cases have known them diagnosed during life with some degrēe of certainty. Considering what an important part the functions of the liver play in infancy, it is reasonable to suppose that such a marked change in its structure as this interstitial hepatitis entails cannot be without serious detriment to the patient. The older writers, then, were possibly right in the importance they placed on the digestive disturbances arising from syphilitic liver disease in infants, and it may be that we do not sufficiently regard them. Marked enlargement of the liver and spleen is certainly an unfavourable factor in prognosis. But symptoms directly

chargeable to the affection of the liver are extremely rare. A case recorded by Depasse is, as far as I know, the only one where ascites was clearly connected with syphilitic disease of the liver in an infant. Jaundice is much more frequent, but still a rarity, considering how frequently the liver is diseased. Such jaundice, I believe, almost invariably dates from birth, and is generally slight in amount, but if the bile vessels be involved in the liver changes may attain a high degree of intensity. Whether slight or intense, jaundice in infants arising from inherited syphilis is generally fatal. I have known several instances of it, all fatal, and Henoch records others where, along with the jaundice, he found hæmorrhage into the stomach from obstruction of the portal vein. Henoch, too, mentions the case of a syphilitic woman who bore three infants, who all died soon after birth from congenital jaundice. As the effect of treatment, or independently of it, the enlargement of the liver disappears or largely diminishes during the first year

of life. In some instances, however, the enlargement lasts for years. I have known two children eight or nine years old, with a clear history of inherited syphilis, in the East London Hospital for Children, in whom there were ascites with the enlargement of the liver, and where what were taken to be gummata in the latter could be felt through the abdominal wall. One case required repeated tapping, but both finally recovered under treatment with mercury and iodide.

Since Dubois first described a syphilitic affection of the thymus gland in 1850, many, if not most, writers have concurred with him in recognizing a similar disease of that viscus in inherited syphilis. It is claimed by some that the thymus gland is the earliest of the viscera to be attacked, and that it may even be the only one to show the syphilitic taint. Dubois described two varieties, or rather grades, of this syphilitic affection of the thymus. In the first the organ is but little, if at all, enlarged. On section it is found studded with cavities varying in size from that

of a pin's head to that of a pea, from which a yellow, pus-like fluid exudes. In other cases no visible cavities are found, but the same fluid can be made to exude in drops by squeezing the gland. In the second class of cases the organ is considerably enlarged, and cavities as large as a walnut may be found containing the same yellow fluid as in the first class. This fluid, Diday states, had been carefully analyzed, and was found to bear all the physical properties and microscopical tests of pus. Without at all wishing to deny a syphilitic affection of the thymus, I would beg to state that a further proof of its reality is needed than that furnished by Dubois and his successors. I have seen the condition of thymus described by Dubois in syphilitic infants, but more often in infants in whom there was no reason to suspect such complaint. In one infant who died from croupous pneumonia, and who had been perfectly healthy until the commencement of the fatal illness, I saw the thymus immensely enlarged and containing a cavity filled with about half

an ounce of the yellow fluid. I have never analyzed this fluid, but to me the naked-eye appearances of it are not identical with those of ordinary pus. Since preparations of the thymus, too, have found a therapeutic use, I hear that the manufacturers have to reject a fairly large percentage of the glands supplied to them owing to the presence of these fluid-containing cavities. It is in cases of inherited syphilis, possibly, that necropsies on very young infants are most often performed, and where special attention is paid to the state of the thymus. Were necropsies as regularly made on very young infants dying from other causes than syphilis, and equal attention paid in them to the state of the thymus, I have a suspicion that the cavities in question would be found as often in these cases as in the syphilitic ones. On these grounds, then, I feel justified in my belief that up the present the involvement of the thymus in inherited syphilis is at least not proven.

What has been stated as to the thymus

applies also to the pancreas. Many writers describe a syphilitic affection of this latter in the inherited forms of the complaint. As far as I can gather, the chief reason for the belief in such an affection has been an unnatural hardness in the pancreas. Now, I have seldom attended a necropsy on an infant a few months old without being struck with the much firmer consistence of the pancreas than that obtaining in the case of older children. It is, I believe, a physiological and not a pathological condition, and due to the active developmental and functional changes taking place in the viscus in early infancy. Before assuming, then, the reality of a syphilitic affection of the pancreas, I consider that further evidence is necessary beyond a mere increase in the consistency of the organ.

LECTURE III.

MR. PRESIDENT AND GENTLEMEN,—The lesions of the osseous system in inherited syphilis are of great clinical interest. The due appreciation of their frequency and importance may fairly be claimed for modern observers. As late, indeed, as 1858, Diday writes that "the annals of science offer at most five or six well-authenticated instances of them." These words of Diday and the reticence on the subject by the authorities of his day would seem inexplicable, in the face of our present experience, did it not appear by their writings that almost the sole affection of the osseous system Diday's contemporaries regarded as syphilitic was the presence of suppurating nodes on the long bones. Now, nodes on the long bones, whether leading to suppuration or

not, are rarities in infants with inherited syphilis, and the non-discovery of them no doubt led to the erroneous impressions of Diday and others. Mr. Hutchinson states that he met with a few instances of nodes on the long bones in infants early in his career, and, I gather, does not regard them as so very uncommon. Other writers, too, describe them as not infrequent, but that, being evanescent, they are often overlooked. This is as it may be, but careful and prolonged search has not enabled me to come across an instance of them in a child younger than eighteen months. In older children they are occasionally found in association with Hutchinsonian teeth and interstitial keratitis. They usually occupy the same situations as the nodes of the adult acquired form, but have seemed to me less tractable to the influence of iodide than these last.

If nodes are rare on the shafts of the long bones, they are far from being so on the bones of the skull, for the researches of Parrot have clearly established the periosteal origin of the well-known cranial

bosses occurring in inherited syphilis. These may appear in many places on the skull, but are certainly more frequent on the frontal and parietal bones, close to the margins of the anterior fontanelle. With regard to the contention as to what really constitutes a syphilitic type of skull in infants, I would state my conviction that the natiform skull of Parrot, with the four bosses closely surrounding the anterior fontanelle, is undoubtedly syphilitic, and in this I am happy in being confirmed by Dr. Eustace Smith. The subsequent changes in the skull brought about by rickets being superadded to syphilis have led, I believe, to a confusion amongst observers. But the cranial bosses in rickets are confined to accentuations of the frontal and parietal eminences. Mr. Macnamara has, moreover, in his interesting work on the bones and joints, shown that in extensive syphilitic disease of the bones of the skull the frontal and parietal eminences are the only parts that escape. In early cases, then, we have the means of distinguishing the syphilitic from the rachitic

type of skull. But rickets is so frequent a complication of inherited syphilis that after the age of six months we are apt to get a mixed type of skull, with corresponding difficulties as to the part played by the different factors in its causation. If I ventured to criticize the classical description by Mr. Hutchinson of the later stages of inherited syphilis, it would be that the type of skull he associated with this complaint is really due to rickets following upon it. The cranial bosses in syphilis do not often last beyond the first year of life, and leave no traces of their former presence, and, moreover, do not affect the situations of the frontal and parietal eminences.

As with the type of skull, the connection between inherited syphilis and rickets has been one of discussion. The explanation of the frequent association of the two complaints would seem to me a natural and simple one. Rickets is a disease of malnutrition which may own many causes for its production. Amongst these, possibly, no factor is more powerful in this way than syphilis, and thus the vast majority

of syphilitic infants incur a greater or less degree of subsequent rickets. The contention of Parrot, that every case of rickets has a foundation in syphilis, is to me, as with most others, inexplicable and utterly untenable. In only one case have I seen suppuration ensue upon a node on the skull. Here a tender swelling over the frontal bone occurred in a syphilitic infant about six months old, with redness and infiltration of the overlying skin. The skin gave way in a short time, and the bone beneath rapidly necrosed away, opening up the cerebral membranes; mercury, iodide, and the cautery alike failed to arrest the progress, and the child died from abscess of the adjacent brain. Dr. Barlow lately mentioned that he had seen two cases of a like formidable character, but I am not aware whether he has published them or not.

By far the most important and frequent osseous affection in inherited syphilis is the inflammatory one occurring in the epiphyses and in the junctions between them and the rest of the bones. First

described by Wegner in 1870, his researches have been confirmed and extended by Taylor of New York, Dr. Barlow, Dr. Lees, and many others. According to Wegner, there is found in the bones of new-born syphilitic infants and young children a morbid process taking place at the point of junction of the cartilage of the epiphysis with the diaphysis. This consists of a proliferation of the cells of the cartilage along with a retardation of ossification in its already calcified structure. At the same time this proliferation of the cartilage cells interferes with the existing blood-vessels, and the formation of new ones takes place imperfectly or is altogether arrested. As a consequence of this interference with the blood-vessels, the cartilage cells themselves suffer in their nutrition and undergo atrophy or fatty change. The result of this morbid process is seen on section as a narrow, somewhat jagged line of yellowish or orange colour running along the line of the epiphyseal cartilage. This appearance, according to Wegner, is due to necrotic tissue separating the diaphysis from the

epiphysis, and a further suppurative complication may lead to a complete detachment of the latter from the shaft of the bone. Taylor of New York confirms this appearance, but he—and in this he is supported by Waldeyer and Köbner—regards the yellow zone, not as a necrobiosis due to deficient vascularity, but as a gummatous process due to the enormous proliferation of new cells, which by compressing the vessels lead to the destruction of the intervening tissues and the consequent separation of the epiphysis from the diaphysis. Whether Wegner's or Taylor's is the correct interpretation of the epiphyseal change is of minor moment; both are agreed as to the frequency and importance of the result produced. Along with the other changes just described, the ossification of the epiphyseal cartilage proceeds irregularly, and the cartilage cells, which in health are arranged in rows, are disarranged, or are completely disintegrated and replaced by groups of smaller cells.

Such, in brief, is a summary, mainly

from Henoch, of the pathological disturbances occurring in the epiphyseal cartilages upon which most modern German writers lay especial stress. It is claimed that the morbid process always appears in several places simultaneously, particularly often at the lower end of the femur, in the bones of the legs and forearms, and in the ribs; sometimes in all the long bones together. It is not necessarily confined to the larger bones, however, for it is now known that syphilitic dactylitis in reality commences with disease of the epiphyseal ends of the phalanges. Wegner, who first described this epiphyseal disorder, says it is almost constant in the bodies of infants suffering from inherited syphilis. Kassowitz, who admits its extreme frequency, had nevertheless met with a few cases where it was absent. Waldeyer, Köbner, and Fränkel describe it as being present without exception in every case of inherited syphilis, and the first two state that even when there are no naked-eye changes in the epiphyses, these may be recognized with certainty by

the microscope. Birch Hirschfeld, too, writes as if the absence of epiphyseal disorder were the surest proof of the freedom of the infant from syphilis. Most of the modern German authorities, in fact, would seem to regard this affection of the epiphyses as pathognomonic and distinctive of inherited syphilis, and to regard its non-discovery as conclusive evidence of freedom from it. In the English textbooks much less attention is paid to it. This possibly arises, however, from the subject not having received the general notice that its importance deserves, owing to a non-appreciation of its prevalence.

Whether it be as frequently present as a pathological condition as some German writers allege or not, there is a consensus of opinion that this epiphysitis only calls for consideration as a clinical symptom in exceptional instances. In its milder forms it can sometimes be diagnosed by the pain elicited by pressure over the epiphyses of the long bones, more especially the lower ones of the humeri and bones of the forearms. But pain is no necessary

accompaniment of syphilitic epiphysitis; and there may be considerable swelling of the epiphyses of several bones with no obvious sensory disturbance. This swelling of the epiphyses, with or without pain, as the lesion giving rise to it is a congenital one, may appear in infants of any age. When the enlargement of the epiphyses is of any considerable size, however, it usually occurs in infants of from three to six months old, but is rare after the latter age. Some writers give criteria by which syphilitic enlargements of the ends of the bones are to be distinguished from rachitic ones in the same situation, but I cannot think confusion between the two conditions can often occur. The younger age of the syphilitic patients, the want of symmetry in the distribution of the bony lesions, the greater prevalence of the lesions in the bones of the upper extremity, and even here very often a predominance in one side over the other, along with the presence of other signs of syphilis, ought to be sufficient to prevent errors of diagnosis. Still, in children over the age of six months syphilis

and rickets may occur together, and here it may perhaps be an impossible matter to duly apportion to each disease its share in the causation of the epiphyseal swellings.

Suppuration as a result of epiphyseal disease of the long bones is rare in infants under a year old, and I have only known two or three examples of it. In older children suppuration over the ends of the long bones is, perhaps, commoner than in young infants, owing possibly to walking and other uses of the limbs proving prejudicial to a previous epiphysitis not entirely cleared up. A symmetrical suppurative epiphysitis in children between one and three years old is to me sufficient to warrant a strong suspicion of syphilis for its causation. In contradistinction to the case of the long bones, suppuration arising from epiphysitis of the phalanges, "syphilitic dactylitis," is not very rare. Like Mr. Hutchinson, I have only seen it in connection with the bones of the fingers, never with those of the toes. Dr. Colcott Fox has, however, published a case where it occurred in the foot. On all these points

regarding suppuration I speak with some diffidence, as such cases come more appropriately under the care of the surgeon than that of the physician. Like suppuration, separation of the epiphyses of the long bones is rare, and my experience of such cases is an extremely limited one. Dr. Barlow has lately called attention to the deformities of the limbs that may result from it owing to the awkward angles at which the epiphyses may rejoin the shafts.

By far the most interesting condition associated with epiphysitis is the anomalous one known as syphilitic "pseudo-paralysis," in which one or more of the limbs lie cold, wasted, and flail-like by the sides of the body. I have associated this "pseudo-paralysis" with epiphysitis because the generality of writers have ascribed the muscular wasting to disuse, owing to the pain ensuing on motion from the presence of epiphyseal swellings. Henoch has thrown doubts on this origin of the disorder, however, and with these I agree. It is quite possible to have marked wasting

and complete immobility of the limbs in a syphilitic infant without any obvious epiphyseal swellings and with an entire absence of pain. In two cases of "pseudo-paralysis," moreover, having a perhaps exaggerated fear of epiphyseal separation, I had the affected arms confined in splints. Under the use of mercury the infants concerned recovered power and muscular tone, although their arms were rigidly fixed. I cannot, then, hold mere disuse accountable for the muscular wasting and paresis. As a possibility I would suggest a peripheral nerve origin for this "pseudo-paralysis" due to the epiphyseal disease, and its being, perhaps, akin to the nervous disorder Dr. Ord has shown may arise from primary joint trouble. Bednar, who would seem to have been exceptionally fortunate in meeting with "pseudo-paralysis," for he found it in nineteen out of sixty-eight cases of inherited syphilis, ascribed it to a syphilitic myositis. It is essentially a complication of the earlier stages of inherited syphilis, the limits of age during which I find records of its occurrence being one week and

eight months. At the first-mentioned age it was noted in a case under Dr. George Ogilvie's care, and at the latter in one under Henoch's care. It is possible, however, that more careful search would enable me to find it recorded at a later age than the one mentioned. My own cases, amounting to perhaps a dozen, all occurred in infants under the age of three months, most of them, indeed, in infants less than six weeks old. In several the paralysis was the earliest symptom of inherited syphilis, and preceded the more unequivocal ones by an appreciable interval. In all my cases the arms alone were affected, and in only three did the complaint attack both limbs; in these three, moreover, the one arm was affected before the other. In Bednar's nineteen cases the arms were affected sixteen times, the legs once, and all the limbs twice. All observers are agreed as to the special tendency for the arms to suffer, and that these suffer first even in the cases where other limbs are subsequently affected. What other factors besides syphilis are necessary for its

production and its pathology are still problems requiring solution.[1]

Turning from the symptoms of the inherited to those of the acquired forms of syphilis in infancy is to enter upon a subject about which there have been the most ardent debate and controversy. That accidental syphilis is rare in infants, as they are not exposed to the ordinary channels in which infection is incurred in adults, will not be denied. Much of the uncertainty and contention regarding its manifestations undoubtedly arise from the lack of clinical material necessary for forming more definite conclusions. No one observer has seen a sufficient number of cases to entitle him to speak dogmatically on the question. Notwithstanding this, there has been dogmatism more than sufficient on the part of most writers on

[1] Cases of relapse of this "pseudo-paralysis" are extremely rare; indeed, good authorities have dogmatically stated that such relapses never occur. Dr. Gossage has, however, published a case of relapsing syphilitic "pseudo-paralysis" in vol. x. of the *Westminster Hospital Reports;* but, as far as I know, this is the only one on record.

the subject, and I fear that only recently I may have laid myself open to the same charge. In what follows, then, I should preliminarily state that any conclusions I may draw have been formed on a limited experience of eight cases of acquired syphilis in infants under a year old, although this experience has been supplemented to some extent by a larger one of acquired syphilis in children of older age. It may well be, then, that further opportunities may lead me to largely modify my present views concerning the acquired forms in infancy. The only difference Colles recognized between the acquired and inherited forms in infancy was the liability of the mother, as well as the nurse, to contract the former. In fact, he gives cases where healthy infants were contaminated by infected nurses, and makes no distinction between the syphilis so acquired and that inherited from the parents. Most writers before and since his time have concurred in making no distinction between the acquired and inherited forms in infancy. Diday, however, would

seem to have recognized a difference in the two forms, for he writes: "Congenital syphilis does not assume either the behaviour, the progress, or the concatenation of symptoms of the syphilis of adults. A little observation suffices to show that we have here two diseases, analogous but not identical; that if their prognosis differ, it is less on account of the age of the subjects they attack than from the nature and character peculiar to each of them. Producing previous to any characteristic symptom a kind of atrophy or stunted condition of the whole economy, breaking out afterwards at a hundred points at the same moment, accompanied from the first by visceral lesions foreign to acquired syphilis, contagious by its slightest symptoms, congenital syphilis can only be compared to itself, and it is from its energy, much more than from the weakness of its victims, that we must ask the secret of the special dangers which it involves." Further, again, Diday writes: "Syphilis, so often fatal in new-born children when inherited from their parents, scarcely ever compromises

their existence when it has been accidentally innoculated from a primary chancre in an adult." Whilst not agreeing with Diday as to the special virulence of infection attaching to congenital syphilis, I am at one with him regarding the differences between it and the acquired form, and especially so as to the much-diminished constitutional disturbance in the acquired form in infancy. Mr. Hutchinson has no separate description of the symptoms of the acquired form in infants, possibly because he deemed it unnecessary, but in writing of the inherited variety he says: "Excepting in the addition of 'snuffles,' these secondary symptoms are much the same as those observed in the acquired disease." It is not a just assumption from this last that Mr. Hutchinson denies the presence of "snuffles" in the acquired syphilis of infants, as his description of the acquired disease was drawn from that presenting in adults. If, however, his description be intended as universally applicable to the acquired form, whether in adults or infants, then the absence of

snuffles in the last must be considered as a valuable criterion in differentiating them from cases of the inherited variety, where "snuffles" plays such a frequent and conspicuous part. According to Dr. Radcliffe Crocker, "Acquired syphilis in children and infants presents much the same symptoms and runs much the same course as in the adult, except that in very young children the bones at the junction of the epiphyses to the shaft are very likely to be the seat of inflammation." With regard to the similarity of the acquired form in infants to that in adults, Kassowitz is in accord with Dr. Crocker, although he goes further in this direction than I gather the latter is inclined to follow. "When a healthy infant," Kassowitz writes, "is infected shortly after birth, its syphilis does not differ from that of an adult, *but does so most markedly from that of a child of the same age with the inherited complaint. The difference between them, then, one not merely due to age.*" Kassowitz has tabulated the differences between the inherited and acquired forms in infancy, and his

enumeration is briefly as follows: 1. In the inherited form there is early involvement of the abdominal viscera, which involvement is often intra-uterine, and may precede the skin eruption by months. In the acquired form any affection of the viscera is always a late symptom and seldom occurs. 2. In inherited syphilis there is a peculiar and characteristic affection of the calcifying cartilage and growing bone; this "epiphysitis" occurs early, and may be intra-uterine. The early appearance and extensive distribution of this "epiphysitis" in inherited syphilis have no analogy in the acquired complaint. 3. In inherited syphilis there is frequently diffuse infiltration of the skin, especially of the face, soles, and palms. In acquired syphilis there is no such infiltration observed either in infancy or later age. 4. In inherited syphilis there is a peculiar characteristic appearance and distribution of eruption different from those obtaining in acquired syphilis in infancy. 5. In inherited syphilis vesicular eruptions are frequent, but are never observed in the acquired form. 6. In

inherited syphilis prodromal coryza is almost universal, but is absent in the acquired complaint. Such are mainly the criteria by means of which, such a judicious and experienced writer as Kassowitz asserts, a distinction can be clearly made between the inherited and acquired forms in infancy. With most of the distinctions drawn by Kassowitz between the two forms of the complaint in infancy I personally agree. As minor details, however, I cannot regard a vesicular eruption as a common occurrence in the inherited form; nor can I, after reading Dr. Crocker's cases, lay the same stress as Kassowitz does on the difference between the manifestations of "epiphysitis" in the two varieties of the complaint. As far as my experience goes, the commonest eruption in acquired syphilis in infants, as in adults, is the well-known roseola and its usual distribution, the same at all ages, viz. the front of the chest, the abdomen, and to a less degree the flexor aspects of the limbs. This syphilitic roseola, admittedly rare in inherited cases, was the form of

eruption in seven out of my eight cases. In the remaining one, an infant that had acquired a chancre on the back of the neck from kissing by a syphilitic aunt, and that had in its turn given its mother a chancre on her breast, a universal small pustular eruption broke out all over the body. Along with the rash, too, in most of my cases I found a condition of throat identical with that occurring in adult syphilis; this is in marked contrast with what happens in the inherited form, where the throat remains, as a rule, unaffected. The chief peculiarities of the symptoms, however, in acquired syphilis in infancy are the scantiness and evanescent nature of the eruption, which may be easily missed, and the subsequent early and luxuriant growth of condylomata. These peculiarities of acquired syphilis in children were pointed out by Henoch, who apparently did not deem its manifestations identical with those of the inherited form. Dr. Barlow informs me that he has found a difference in the appearances and distribution of the eruption in acquired syphilis

in infants from that occurring in the inherited variety, and that his experience tallies with that of Henoch with regard to the appearance of condylomata in the former complaint. My colleague, Mr. R. W. Parker, too, emphatically asserts the resemblance of the acquired form in infancy to that in adult age, and the manifest points of difference in the symptoms to those occurring in the inherited form. In very rare instances it may be that the eruption of inherited syphilis may imitate that of the acquired form, so that a reliable opinion as to which of the two is concerned must be formed from other considerations than the mere rash and its distribution. In contrast to this, in no instance have I seen or learnt of the symptoms of the acquired complaint approximating to those of the typical ones of the inherited variety. I would freely admit, however, in spite of the evidence and authorities I have given as to the differences between acquired and inherited syphilis in infancy, that there is perhaps no one single symptom which would serve as an absolute mark of

distinction between the two complaints. When all the symptoms are, however, taken into consideration, I would contend that sufficient criteria exist in most cases to prevent confusion between them.

Of the primary chancre, a fundamental necessity for the existence of acquired syphilis in infants, I have as yet said nothing, preferring an attempt to point out the differences between the complaint and the inherited form apart from its consideration. There is, of course, no need to insist upon a chancre as the primary factor in the acquired syphilis of infants, as in adults, before my present audience. Only too often, however, within my personal knowledge, owing to reckless charges against public vaccinators and others, has occasion arisen for the insistence of a chancre and of the necessary incubatory periods in acquired syphilis in infants. When the fact is firmly grasped that such syphilis in infants runs the same course, both in its primary and secondary manifestations, as in adults, most of such charges will cease to be brought or

seriously entertained. The vast majority of chancres in infants must, from the nature of the case, be situated on the skin or other external part of the body, and present the same conspicuous features in them that chancres do in adults in the same situations. With the minute examinations that infants undergo for "spot or blemish," usually twice a day, there is small chance in them for a chancre to be passed over by even the most careless mother, no matter how frequently they may be missed in adults. Even when a chancre has passed away, moreover, it leaves visible and tangible traces of its former presence, lasting for months or perhaps years, which are generally easy to find in an infant's tender skin. The sticklers for the rigidity of Colles' law universally allege, when supposed exceptions to it are brought forward, that such exceptions are cases of acquired syphilis in which the primary chancres have been missed. It is to me a remarkable coincidence that it is mainly in such cases, where a presumption of acquired syphilis is made

to uphold the law, that such conspicuous objects as infantile chancres are missed, and leave no traces behind them, and that there is a total lack of evidence as to the source of infection. In each one of my eight cases there was no difficulty in ascertaining the original site of inoculation.

Another special point about acquired infantile syphilis is its power of infection. This I propose to leave until I have dealt with the infectiousness of inherited syphilis, which I now proceed to do.

On no other point in syphilis has there been more contradictory teaching than on that of the infectious nature of the lesions of the inherited form. Whilst some authorities have described inherited syphilis as exceptional in the contagious property of all the lesions it engenders, others have denied the contagiousness of inherited syphilis at all. Since the works of Diday, however, his teaching has apparently been accepted as the standard one, and the extreme virulence of the contagion of inherited syphilis has been promulgated by most writers, many of whom I suspect in

this instance were more influenced by the authority of accepted doctrine than by the result of their personal experience. The opinions of the older writers on the point are difficult to gauge, as they classed cases of transmission from infant to nurse with those of transmission from nurse to infant, and seemingly deemed any discrimination between the two classes as of little moment. Hunter, in the days when he still believed in the reality of inherited syphilis, denied the possibility of transmission from the infant to another person. The elder Cullerier and most authorities up to the time of Colles would seem to have agreed with Hunter on this point. When Colles, however, published his book in 1837, he rudely upset the prevalent belief in the non-contagiousness of inherited syphilis. It was, according to him, the peculiar virulence of the contagion of infantile syphilis that distinguished this last from the adult type. It was not necessary, he wrote, for a woman to suckle a syphilitic infant to acquire the complaint from it—it was sufficient for

any one to do so merely to dress, handle, kiss, or fondle such an infant. In fact, he would seem to have imagined the mere presence of such an infant as a menace to the unprotected, and to have believed in a real "aura syphilitica" emanating from it. More than this, he again writes: "The members of the nurse's family may also contract the disease, and more easily than she, for this disease seems to acquire more force the further it becomes removed from its first origin." Most of Colles' personal observations are of little value now, as he indiscriminately mixed up cases of acquired and inherited syphilis in infants, and drew deductions from them as though they were of identical nature. He did not, moreover, acknowledge a primary chancre as a necessary part in the contraction of syphilis by an adult. For him to diagnose syphilis in a woman suckling an infected child, it was sufficient that she had ulcers or other sores about the nipples, and he remarks the curious fact that in such cases the disease often limited itself to these manifestations on the breasts. Diday, following in the

same steps as Colles, went even beyond the last, if possible, in his estimation of the power of contagion of inherited syphilis. "I have already stated," he writes, "and hope to prove it, that the lesions of congenital syphilis differ from those of ordinary syphilis by an infinitely greater power of contagion. And what is at the same time remarkable and deleterious in them is that they transmit the same property to the person who receives the disease from them." He considers this virulence of contagion so well established that, if he saw a woman presenting signs of constitutional syphilis transmit them to her husband, the suspicion would at once arise in his mind that they were congenital in character, and derived from a child with inherited syphilis nursed by her. If, moreover, he learnt that a nurse had given syphilis to several men, he would consider that there were sure reasons that she had acquired the disease, not by coitus, but from suckling an infected nursling. He writes of the infection of nurses as being of daily occurrence, of thousands of

examples of it being readily adducible, and he gives accounts where the presence of a single case of inherited syphilis has produced in healthy rural communities outbreaks of syphilis that can only be described as "volcanic," from the suddenness of their incidence and the numbers that were attacked. Notwithstanding the confidence and dogmatism with which Diday wrote, there were even in his own time authorities who differed strongly from him, and Ricord, the younger Cullerier, Bassereau, and others would seem to have regarded the contagion of inherited syphilis as a chimera. Maissoneuve and Montanier, too, declare that "doubt is no longer permitted" as to the non-contagiousness of inherited syphilis. Diday quotes all these last named, and, in the face of their writings, it is difficult to appreciate the following remark of his: "All observers have pointed out the propagation of the symptoms by the slightest contact with the new-born child to the nurse, and it is not uncommon to see two or three families victims to the presence of a single syphilitic suckling." As to the

reliance and value to be placed on Diday's opinion on the point, the following controversy is both instructive and interesting: "Remark well," Ricord writes, "that I do not absolutely reject this mode of transmission from the foster-child to the nurse, and from the nurse to the foster-child. I only say, without leaving the field of strict observation, and of the exact analysis of facts, that this mode of transmission is not yet proved." Diday rejoins, "I have no difficulty in acknowledging with him (Ricord) that among the clinical facts advanced in proof of this mode of contagion there is not one which is thoroughly demonstrative, there is not one in which the daily observations of the symptoms—on the one hand in the nurse, her relations, and those around her, on the other, in the child, its father and mother—render it evident that symptoms really constitutional have passed from the one to the other; but—and in this I regret to differ from Ricord—I am inclined to think that if the conclusive fact be wanting, probable facts abound, and that to such an extent as to

make up by their number for the absence of the former." In the face of his "thousand histories of infectious lactations furnished daily by experience," Diday's inability to adduce one single conclusive example is both startling and inexplicable. His evidence of the conveyance of syphilis by nurslings, too, is not convincing in the light of our present knowledge. "Primary chancres," he writes, "exist in a very small minority of cases of nurses infected by infants. Mucous tubercles form the earliest symptom in each." It is significant, too, in his cases, as in those of Colles, that the syphilis contracted by nurses from infected infants very often remained confined to the affected breast, and never manifested itself by symptoms elsewhere. But the disparity between the dogmatism of Diday on the virulence of the contagion of inherited syphilis and the proofs he adduces for it is only one amongst many inconsistencies that are to be found in his writings. It may be said that, feeling as I do regarding some portions of these writings, I have devoted too much time to their consideration.

But as Diday's views are still commonly held, and he is largely quoted, no one can afford to lightly ignore him. I will proceed to discuss at less length some more recent opinions on the important point at issue.

Henoch considers the occasional transference from infant to nurse as proven. In his own vast experience, however, he had never known an instance of it. Fournier writes as if the contraction of syphilis from cases of the inherited disease were extremely common and of daily occurrence. An infant with this complaint, he asserts, would not infect its mother, but would almost infallibly infect a healthy nurse. In fact, Fournier would seem to be a living exponent of Diday's views as to the virulence of the contagion of inherited syphilis. Mr. Hutchinson says that if an infant suffering from inherited syphilis be suckled by a nurse free from taint, "the risk is great that a nipple chancre will result." But as he further says that he has only known "perhaps half a dozen" nipple chancres altogether, his words would seem

to me to exaggerate the risk incurred, more especially when his large experience is taken into consideration. Most latter-day writers are in accord with Mr. Hutchinson, and in recent text-books inherited syphilis is described as "eminently contagious," or in kindred words to the same effect.

At the present time there would seem to be a growing opinion that the virulence of contagion of inherited syphilis has been vastly exaggerated both in text-books and by authorities, and that the contraction of the complaint by a healthy person from a tainted infant is an extremely rare occurrence. Some two years back I published a case of supposed exception to Colles' law, the weak points in which were justly and forcibly dealt with by Dr. George Ogilvie. His latest description of it as "not absolutely conclusive" I think a decidedly appropriate one for the case. If this case be rejected, however, and the supposition that the infant was really suffering from acquired and not inherited syphilis be maintained, then I have personally

never known an instance where syphilis was contracted from an infant with the inherited complaint; and this in spite of many thousands of healthy children and adults having been exposed to infection from cases under my care. To ascertain if my experience was in any way exceptional in this respect, I have made inquiries of present and former colleagues at the East London Hospital for Children, all of whom have had a large acquaintance with cases of inherited syphilis. The results of my inquiries are so much at variance with prevalent belief that I feel it incumbent upon me to give the names of the gentlemen I consulted, and this, I may state, is done with their full consent. My senior medical colleague, Dr. Eustace Smith, has only known one instance where syphilis was contracted from an inherited case, and this was one where an infant infected its own mother. The case was seen by the late Mr. Berkeley Hill, who demonstrated to his own satisfaction, but not to that of Dr. Smith, that the infant was suffering from acquired and not

inherited syphilis. Dr. Smith still believes that the case was one of exception to Colles' law, and apart from it has never known syphilis contracted from the inherited disease. Dr. Donkin, Dr. Dawson Williams, Dr. Arnold Chaplin, and Dr. J. A. Hayward have never known an instance where an infant with inherited syphilis has infected another person. Dr. Johnstone Campbell has known one case of exception to Colles' law, which he proposes to publish when at greater leisure, but no other example of infection from inherited syphilis has come under his notice. Dr. Radcliffe Crocker has known one instance where an infant with inherited syphilis contaminated its foster-mother and her daughter. Mr. R. W. Parker has stated that he had seen a case of exception to Colles' law, but no other example of infection from inherited syphilis. Messrs. L. A. Dunn, W. H. Battle, and H. Betham Robinson have never known syphilis contracted from a case of the inherited disease, and present and past resident medical officers — Messrs. P. C. Phillips, Scott

Battams, and Dr. E. E. Ware—reply to the same effect. Now, the experience at the East London Hospital for Children of the gentlemen I have named added to my own represents a joint experience of some thousands of cases of inherited syphilis. These syphilitic babies in the East of London, too, are indiscriminately suckled by other women besides their own mothers, and are freely kissed and fondled by numerous persons, who thus expose themselves to infection from this presumedly eminently contagious disease. That the sole result, as far as could be ascertained, of many thousands of exposures to infection should be only five examples of the incurrence of syphilis, and that of these four should assume the form of exceptions to Colles' law, seems to me noteworthy and surprising in the extreme. If, as usually happens, these four examples of exception to Colles' law be curtly rejected as unreliable, then I can learn only one instance where syphilis has been contracted from a case of the inherited complaint at a large children's hospital where

inherited syphilis is rife amongst the infantile patients, and where adult women are frequently treated for the acquired disease. I have no reason, either, to suspect that our experience at Shadwell is peculiar. Dr. Barlow and many others of large experience tell me that they have never known the contraction of syphilis by any one from an infant suffering from the inherited complaint. Lately I have pestered all my friends with questions on this point, and as the outcome I have learnt of two other solitary examples of its occurrence. My friend, Dr. John Thomson of Edinburgh, tells me he knows a case where a lady contracted a chancre upon her lip from kissing a grandchild with inherited syphilis, the father of the infant having incurred the disease about three years before marriage. Dr. W. S. Colman, too, tells me he knows a case where a baby with inherited syphilis infected its nurse. But three cases go but a little way to justify the descriptions usually applied to the power of contagion of inherited syphilis, especially when the experience

and standing in the profession of those from whom I inquired are taken into account. That inherited syphilis is occasionally contagious is certain, but it is equally certain, I would contend, that the virulence of such contagion has been grossly and vastly over-estimated. It is impossible to reconcile the experience of certain French writers in this respect with our experience in this country, even when the greater frequency of wet nursing in France is fully admitted.

There are certain reasons, or suggestions rather, by which I think the infrequency of the contraction of syphilis from infants suffering from the inherited complaint can be partially explained. The syphilis in such infants, it must be remembered, dates from conception and not from birth, and at the age at which symptoms appear such a syphilis is generally of about a year's standing, and may have lost some of its pristine virulence during both uterine and extra-uterine existence. If the views I expressed in my first lecture, too, be considered as worthy of

any consideration, then it may be that some product absorbed by the mother during her first pregnancy may influence the succeeding conceptions, and thus largely modify the disease in the infants resulting from them and its power of contagion. In this way I should expect a first infant more likely to convey the disease to others than succeeding ones, and I have a general impression that the histories of recorded authentic cases of such infection confirm this opinion. That the power of infection is possibly in some measure confined to the first infants in a family may help to partially explain the rarity of infection. Another reason, and a much weightier one, for the infrequency of infection from inherited syphilis is the rarity of specific sores about the mouths of infants, a fact which has been pointed out by Dr. Colcott Fox, Henoch, myself, and others. Even when such sores do appear they are a comparatively late manifestation, seldom occurring before the age of six months, and by this period, in the vast majority of instances, both

treatment and time have probably so modified the complaint that conveyance to others is either in abeyance or annulled. It may be that the nasal secretion and that of mucous tubercles are infectious, but as the latter are a late manifestation the same reasoning applies to them as to sores in the mouth, and there are obvious reasons why the nasal secretion is not often encountered. The reasons I have given are, I admit, totally inadequate for a full explanation of the extreme rarity of infection from inherited syphilis; and, whilst I consider that rarity established, other grounds for it than those I have suggested are still to be sought.

In marked contrast to the rarity of infection from inherited syphilis is its frequency from the acquired form in infants. Only one instance is within my personal knowledge where a syphilis acquired by an infant was not communicated to one or more persons brought into contact with the child. Numerous instances are on record, from the time of Ambroise Paré onwards, where infantile acquired

syphilis has been the cause of severe outbreaks amongst relatives and friends. Recently I learnt of one in the East of London where acquired syphilis in a child spread to five others in the same family besides strangers. Some of the best authenticated cases, too, recorded by Colles and Diday, who contended for the greater virulence of the inherited form, occurred where numerous persons contracted the disease from an infant with the acquired disease. In fact, it would seem to me that what these writers really contended for was more the extra virulence of infantile syphilis generally than for any difference between those of the acquired and inherited forms. Although the presence of acquired syphilis in an infant is the more dangerous to the community at large, there is, I need hardly say, no difference in virulence between such a syphilis and that acquired by an adult. But the presence of the dread disease in an innocent-looking baby is so seldom suspected that generally one or more persons are contaminated before the truth

is discovered—a condition of affairs that does not often occur in the case of adults. So nearly constant, however, is the infection from an infantile acquired case, and so extremely rare that from one of the inherited form, that, in the lack of criteria, a diagnosis between the two varieties might almost be made from the presence or absence of infection in most instances.

The few minutes remaining at my disposal I will devote to some brief considerations of Colles' law. This law in reality consists of two separate parts, the one that the mother of an infant with inherited syphilis cannot contract the disease from her own child, and the other that such an infant would almost infallibly contaminate a healthy wet-nurse. The fact of the inclusion of this second proposition is generally forgotten by writers contending for the absolute validity of the law. In dealing with the contagiousness of inherited syphilis, I endeavoured to show that this part of the so-called law is far from true. It may well be, then,

that the main safety of the mother lies in the little liability of the infant to transmit the disease rather than in some protective quality residing in herself, due to the fact of her having borne a syphilitic infant. For my part I think both such factors possibly conduce to the safety of the mother. Is the first part of Colles' law absolute? Has an infant with inherited syphilis never contaminated the mother? In Colles' own practice, and in those of others since his day, cases have from time to time occurred which were apparently exceptions to the law. Some of these cases are so imperfectly recorded that discussion of them is hardly called for. Others, on the contrary, Dr. George Ogilvie writes, "are as conclusive as any recorded clinical facts can be." Fournier, somewhat grudgingly it would seem to me, admits the validity of some such cases, and he would appear to regard the subject of exceptions to Colles' law as of little practical importance on account of the extremely exceptional character of such exceptions. Mr. Hutchinson has lately

stated that he not only admits the possibility but the probability of these exceptions. I am the more pleased at this admission in that it places him in accord with Fournier and other authorities in the matter, and that it is also in some sense a further justification for the belief in myself and others that we have actually met with exceptions to Colles' law. Mr. Hutchinson's sole contention is, I believe, that as yet no exceptions have been recorded worthy of trust. I am unwilling to differ from him, but I must state my conviction that Dr. George Ogilvie's admirable paper at the Royal Medical and Chirurgical Society is conclusive on the point. Granted the possibility of exceptions to Colles' law, ought such eminently infrequent occurrences to largely modify our practice in allowing apparently healthy mothers to suckle tainted infants? Personally, I should say decidedly not. In my second lecture I emphasized the importance of maintaining the nutrition of the infant, and for this purpose no factor is more essential than the mother's milk.

If ever legislation for the many to the detriment of a limited few is justifiable, the case in question calls for it. Following in the same path as Henoch, the only limitations I would place on suckling by mother or wet-nurse would be the presence of excoriations on her nipples, and that of ulceration or fissures about the mouth of the infected infant.

In conclusion, I have to apologize for the disjointed and fragmentary character of these lectures. In reality they deal with only a very limited portion of the subject of infantile syphilis. Important questions, such as diseases of the nervous system, vaccinal syphilis, prognosis, treatment, and many others, I have preferred to altogether omit rather than to attempt to treat in a perfunctory manner. In fact, my selection has been manifestly based on controversial grounds rather than any other.

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