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LECTURES ON DISEASES OF CHILDREN

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This is the only Copy I have of the 1st Edition of the Lectures. So far as I can judge the views expressed have been confirmed since they were delivered

R. Lee

LECTURES

DELIVERED AT THE

HOSPITAL FOR SICK CHILDREN,

GREAT ORMOND STREET.

BY

ROBERT J. LEE, M.A., M.D. CANTAB.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS.

1883—1884.

Contents:

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PREFACE.

One of the three objects for which the Hospital for Sick Children, in Great Ormond Street, was founded was the improvement of our knowledge of the Diseases of Children. This has always been urged as entitling the Hospital to the favour and support of the Medical Profession. While this claim exists the members of the Medical Staff cannot well avoid the responsibility attaching to it, and must endeavour to justify the claim to the best of their ability.

I have always regarded clinical teaching as of the greatest importance and value to students. Whether the publication of Clinical Lectures is likely to prove of any value is another question, and I should have hesitated to publish this very simple contribution towards the claim above referred to, if I had not been requested to do so by some of those who attended these Lectures.

ROBERT JAMES LEE.

6 SAVILE ROW, W

ERRATA

Page 20, line 7, for "cortal" read "costal."
Page 31, line 22, omit "erupting."
Page 36, line 15, for "exceptions" read "symptoms."

LECTURE I.

Introductory.

The question is often asked "What is the best book on Diseases of Children?" It is not an easy question to answer. A good book is a great help if, along with reading, it is possible to see examples of the maladies described. Without assistance in clinical study, even with a good supply of examples, it is a long time before the difficulties of diagnosis are overcome, and some grasp is obtained by the mind and the senses of the differences between the exact description of the text-book and the varying features of disease.

The study of Medicine is like the study of a language. A text-book may be a dictionary, or it may be a grammar. Our text-books try to combine the two, with more or less success, according to the amount of knowledge possessed by the student himself. A full and complete work is what the advanced student desires; a simple, clear, well arranged and convenient book is what is generally wanted by those who ask the question, "What is the best book on the subject?" We are all students, students of the language of nature, some more proficient than others, but all anxious to know and understand more and more of the infinite variety and subtlety of this language.

That book is the best which describes most truthfully and most intelligibly the characters of disease. If we read a description and easily recognise the specimen, or if we see the specimen and find it well described in the text-book we are satisfied. The book may be good so far as the description of symptoms and diagnosis are concerned. Something more is required however to make a work practically useful, namely proper directions for the treatment of different diseases.

We must be content if we find in a text-book not a variety of methods, but some few clear instructions founded on experience, and which, in a majority of cases may be applied with average success.

In this room there is, as you see, a large collection of books, a library of works on the diseases of children. It will give you some idea of the literary labour, which Dr. West must have bestowed upon his well-known lectures. It will also show you what an amount of work has been done by others who have studied, and written upon this subject. You see, therefore, how difficult it is to answer the question, What is the best book to read? In our own language the works of Dr. West, Dr. Meigs, and Dr. Smith are comprehensive and almost sufficient for all the requirements of ordinary practice.

The recently published work, by Dr. Henoch, if you read German, will certainly be found superior as a text-book to those I have mentioned; while in Dr. Gerhardt's handbook we have the most complete and valuable work yet published, though rather a work of reference, and useful to the advanced student, than a book to be read by those beginning to study the subject.

I think that in method and style the French authors surpass both the Germans and the English, and if I had

to select one book in preference to others for the use of a student I should take the volume on the Diseases of Children of the Bibliotheque du Medecin Practicien, an old work, but most excellent.

I may assume that most of you have passed beyond the stage of text-book reading, a period the termination of which is anxiously regarded in the form of an examination. If there are any who have not passed that period, I would say to them, be content with the general works on medicine, and the knowledge contained in them, for all the best works treat largely of the diseases of children. It will be better I think to defer any particular mention of special treatises on some important diseases, and to direct your attention to them when treating of the subject to which they refer.

One of the works on general medicine which contains information of great value is the Lectures of the celebrated Dr. Trousseau, which have been so well translated into English. His great experience as physician to a children's hospital qualified him to speak with authority, equally when expressing general views, as when laying down rules of treatment.

Now it is not my intention to do more in these lectures than to show how the diseases of children may best be studied by those who are preparing very shortly for practice, if not already engaged in it. That is to say, we shall study together the phenomena of disease by clinical observation of cases selected from the out-patient department, and at the same time that the special features of a case are examined and noted, the typical character of the disease which it illustrates will be remarked upon.

At this hospital, for good reasons, children under two years of age are not generally admitted, so that the

diseases of infancy proper must be studied in the out-patient departments; therefore, in directing most attention to the maladies of infancy, I shall be able to supplement to some extent the teaching of my colleagues who have the care of the in-patients.

There is one great advantage in this method of clinical study. It is this, that while learning a good deal of the general character of a disease, we learn something more than is likely to be found in text-books—some particular point of interest which will be impressed upon the memory, and which will not only be valuable for future purposes of diagnosis, but suggest some ideas which will exercise original thought and observation.

So far as the subject of treatment is concerned—and perhaps some will attach more importance to this than to anything else—I shall limit my remarks almost entirely to personal experience. To arrive at definite plans of treatment is naturally the chief object we all have in view, but since the results of experience seem to differ so greatly as they do in respect to treatment, the limitation I propose appears to me necessary.

There is a right and a wrong method of treatment for every case, and most certainly if treatment is not founded upon experience, either personal or otherwise, we are extremely likely to do positive harm instead of good.

There are some diseases which must be studied in groups or in large numbers; others which from their rarity must be studied from individual cases. The table of out-patients printed at the end of the annual report of this hospital shows this clearly. In the year 1882 between twelve and thirteen thousand cases were treated as out-patients, and these are classified under sixty different heads. But half of these twelve thousand cases are

included under five heads, each numbering more than a thousand cases. Between twelve and thirteen hundred (1,258) were entered as debility and atrophy; between eleven and twelve hundred (1,187) as diseases of the skin; nearly the same number (1,184) as inflammation of the lungs; about the same (1,174) as whooping-cough; and between one thousand and eleven hundred (1,059) as rickets. Thus you can form a good idea of what are the most common diseases of young children. Next in order come diseases of the stomach, intestines, and peritoneum; then diseases of bones, and next the cases of syphilis, of malformation, and of abscesses. The three last are numerically not very different—that is to say, they varied between 217 and 275.

Out of a total of 10,000 cases in hospital practice, you will find that about 8,000 are included under the ten heads just mentioned, and the rest are divided among the fifty different heads to which I have alluded. Any further analysis, however, would occupy time to but little purpose.

Now, there is a remark which I think as well to make at once regarding the general character of children's diseases. It is that there is a want of definiteness about so many cases that a feeling of disappointment seems to oppress the mind at times, and induce a sentiment of doubt whether any real progress can be made and certainty arrived at in diagnosis. In our annual report there are more than 1,500 cases in about 12,000 entered as not classified by my colleagues and myself, or about one in eight cases to which we cannot give a name, and where the diagnosis is more than difficult.

A case may be clearly a serious one, and we may listen to the accounts given by the parent or nurse, and make

the most exhaustive examination, and yet be uncertain what is the cause of the symptoms, what organ is affected, —in short, what is the matter with the infant.

This dissatisfaction will not be felt so keenly if we reflect upon the nature of children's diseases, and try a somewhat different mode of study from that adopted for adults. We must fully realise the fact that we do not know what is the true pathology of many diseases in early life, and that even post-mortem examination does not at present explain many symptoms. Take the question of the cause of rickets, and see how different are the opinions as to its true pathology ; or, take the "wasting diseases" which Dr. Eustace Smith has grouped under this convenient term, and follow them to their origin if possible. Let us recognise this difference between the study of disease in adults and children, and be prepared for it, and see whether by other methods we may not arrive at results accurate enough for the practical purposes of prognosis and treatment.

Do not suppose that physical diagnosis should be neglected in the case of children, but what I want you clearly to understand is this, that with all the care and exactness possible, and with the skilled aid of instruments, we are far more often at a loss to explain symptoms than is the case in adults. For this reason, therefore, we are obliged to study symptoms very closely, and with this advantage, that our senses are quickened and our diagnosis of disease in adults is thereby improved.

Not long since I was discussing with a friend whose knowledge of children's diseases is recognised by all, the different mental phases through which we pass when making a special study of the subject. We agreed that, at first, knowledge seemed to come fast, and difficulties

were easily surmounted; then progress was arrested, as it were, suddenly and rather violently by one or more cases of unusual difficulty, where our diagnosis was worse than uncertain; where, in fact, it was utterly wrong—or, at least, if the diagnosis was not wrong, the opinion expressed of the course of the disease was as far from the result as it could be. As time goes on, we agreed that this feeling of disappointment subsides as we learn to appreciate the value of symptoms which we had previously hardly noticed, and certainly had not interpreted properly, and the subject grows in interest, and every case, however simple, affords something new for observation and reflection.

Here, for example, is a child, a little girl, twelve months old. There is apparently nothing particular the matter with her. She sits quietly all day; eats, drinks, and sleeps; and there is only one thing the mother complains of—that she cries when she is moved. If she is left alone she is happy in her way, and amuses herself; but as soon as she is moved she cries. My assistant says he can find no cause. The case is a simple one. Its details are familiar enough. Now how are we to connect this condition with that common disease, rickets, unless through the experience gained by clinical observation. We know that the evolution of the characteristic signs and symptoms in such a case is merely a matter of time unless by treatment the progress of the malady is arrested; but the changes in the bones and the epiphysial cartilages are not yet perceptible, and we have really nothing to guide the diagnosis but a symptom or two. Such a trifling one apparently as the child putting its hand frequently to its head. You would probably not attach much importance to such a slight symptom, and that is

why I chose the case to illustrate the necessity of attention to symptoms.

You will see a large number of cases of rickets where there are no signs, except the bending of the bones, that is, no particular derangement of the health. In others again, the question will arise whether there is any connection between laryngismus or convulsions and this disease, and though at first you may be doubtful on this point yet observation will gradually teach you that they are very intimately related.

Thus we work on, accumulating facts, until they bear arranging, and teach us principles; and then there is a special interest in studying the more delicate features of disease, and in regulating treatment with a refinement only to be acquired by practice.

In my next lecture I propose to consider more fully the subject of rickets.

LECTURE II.

Rickets.

To-day we will consider the subject of rickets, taking some further details in the condition and history of the child you saw at the last lecture. The chief symptom stated by the mother is pain when it is touched or moved. The way in which the chlld sits, shows that the spine is weak and slightly curved. The head is sunk between the shoulders. She turns it slowly and with some little difficulty from side to side. The head is rather square and is depressed in the central line where the parietal bones meet. Her expression is grave and sad. Her skin is pale and flabby. There is nothing particular to notice in the arms except that they are small and wasted, and the skin loosely slides over the deeper tissues. The legs, like the arms, are wasted, and as she sits are bent so that the heels approach the buttocks, and the outer side of each knee touches the table. In this position she remains quietly for hours if undisturbed. If she is undressed you will see that the chest is small, the capacity of the thorax less than natural from the way in which the ribs are brought close to one another, partly by the curve of the spine, and partly as if they had been pushed up by the round projecting abdomen. These are the broad, and if I may use the term, mechanical features of the case; and they

are really the features most worth attention for reasons I will give you. So far as the peculiar signs of rickets are concerned they are not prominently present in this child. Generally, we examine the ends of the bones for evidence of the rachitic process; the lower ends of the radii, the femora, and the tibiæ, and the sternal ends of the ribs. In this child there is a slight enlargement of the costal cartilages, but the arms and legs show the condition of terminal enlargement so little as hardly to allow us to say they are affected. It is not to illustrate the deformities of rickets, however, that this case is here. When the deformities are well marked it does not require a professional eye to recognise them. It seems from historical accounts that the disease was named by the people, but not the disease as we see it in this child. It is here presented in an early stage, before deformities of bones have had time to arise, and when to a great extent it is in our power to arrest them. You would be quite certain to be asked in such a case as this What is the matter with the child? and if you were to answer without some explanation, the child has the rickets, the mother would not believe you. More than that, if she were in a class of life where she could afford to indulge in maternal vanity, she would not only disbelieve you, but she would be offended. If we want to answer the question what is the cause of such a condition we must inquire into the history; and not rest satisfied with the account of the mother that the child has had nothing much the matter with it. It was strong till it was nine months old, and was weaned three months before; thus there was no important change in its food to account for its present state. Some teeth have come through, three lower incisiors and two upper, so that dentition is

backward. It has not had any diarrhœa or acute digestive derangement. It has had a cough, but that the mother says is better. Now experience has taught me that if there is one cause of rickets more common than another it is some form of pulmonary or bronchial inflammation, and it is singular how much this is overlooked. On questioning the mother about this cough she says it began in the late winter when it was severe, but that it is much better now. I have examined the chest and find coarse râles almost universal. The child had probably an attack of capillary bronchitis, and the tissue of the lung has not recovered its normal condition. It is enough for our purpose to recognise the fact that for some time past the respiratory processes have been much interfered with, and nutrition has consequently suffered. It was only after observing many hundred cases of rachitis that I formed the opinion that the most common cause of rickets is bronchitis, or some form of pulmonary inflammation. After whooping-cough and measles, even in children above the age of infancy, rachitis is frequently met with. It may not be the same form of rachitis as in this child, but it is of the same nature. Let me explain this. A child three years of age, strong and well, whose limbs and spine are perfectly formed, may have an attack of broncho-pneumonia concurrently with whoop-cough or measles, from which recovery is satisfactory though the cough remains. In the course of a few weeks when the child is up and about the legs begin to bend and rickets are easily diagnosed. But there is a slight difference between such a case and that of this infant. In the one the cartilaginous ends of the bones are the points to which we look for the evidences of the disease, in the elder child the tissue of bones previously healthy

is affected, and weight or pressure produces curvature. Before we dismiss this infant what treatment shall we prescribe? There are two chief points to which we must attend. The one is the relief of the bronchitis, the other the simple mechanical treatment of the too yielding osseous frame-work of the body. For the former there is nothing better than codliver oil and some preparation of iron; the syrup of the phosphate or the iodide. There is no question whatever of the value of external applications to the thorax; the liniment of iodine, turpentine, or camphor, and with these, of protective covering for the chest and back by day and night. If there is anything to add to this it would be warm, dry, bracing air, but particularly warm and dry air. In the mechanical treatment the first point to attend to is to make this infant lie down as much as possible. If she sits up the weight of the head necessarily causes the spine to curve, and the thorax is compressed. Altheugh the bones are soft, they will not bend from the effects of muscular action. When the forearms of an infant are much curved you may be certain this has come from crawling. In three months time the infant will be in a very different state of health if our directions are followed, and will outgrow all present signs and symptom of the malady.

In taking notes of a case of rickets I would advise you to follow this plan: Register the age of the child, its sex, whether suckled or fed; how long suckled and when weaned; what the diet has been; the number of other children, if any; how many have been rickety; the state of the parents' health; and then short notes of the case.

I need hardly say that a great deal has been

written upon the subject of rickets. The literature is most interesting, for it begins with an account of the disease which is a masterpiece of its kind, the work of Dr. Glisson, Professor of Anatomy at Cambridge, one of the most esteemed and celebrated anatomists and physicians of his time. Between then and now the world is older by two centuries. They were troubled times for England, for the country was the scene of civil wars, and the life of Charles was approaching its unhappy end. In 1650 Glisson's second edition on Rickets was published, about twenty years after Harvey's work on the Circulation of the Blood. I say if you take an interest in such matters you will refer to Glisson's work, and briefly between that time and the present the most instructive matter may be obtained by reference to the Practice of Physic by Dr. Cullen, which brings us to the end of last century; the work of Dr. Schœpf Merei, published in 1855, which comes second in importance to Dr. Glisson's treatise; then the well-known lectures of Sir William Jenner, delivered in this hospital, and published in the *Medical Times and Gazette*, 1860, then a short summary of the results of extensive observation of cases by Dr. Gee, in St. Bartholomew's Hospital Reports (1868); and lastly a treatise by Dr. Baginsky published last year. I must not omit to mention the lecture by Dr. Trousseau, which is often referred to, and from a practical point of view is deserving of being read with great attention. But even after studying with care and thought the various symptoms of the disease, and after considering them severally and in combination, as well as in their mutual relations, and after having learnt all that is possible from the observation and experience of others, you will still find it difficult to answer the question What are rickets?

We may assume that the child at the age when rickets generally appears is in a peculiar condition, such as it is never in at any other time of its life; that certain processes of growth and development are taking place of which the formation of bone is one of the most important. This being granted, and I need hardly say that there is some reason in such an assumption, the next step is simple enough. Rickets may arise from any cause which disturbs or arrests this process. Now I wish to point out very clearly indeed that this is an old idea. Let me read to you what Cullen taught a century ago. After his excellent description of the disease, he observes:—

"There is, however, something still wanting to explain why these circumstances discover themselves at a particular time of life, and hardly ever either before or after a certain period, and as to this I would offer the following conjectures:—Nature having intended that human life should proceed in a certain manner, and that certain functions should be exercised at a certain period of life only, so it has generally provided that at that period, and not sooner, the body should be fitted for the exercise of the functions suited to it."

Most of the questions in connection with rickets which have engaged, and are still engaging, the attention of the physician and the pathologist were considered by Cullen. Its relation to syphilis, to tubercular or scrofulous tendencies in the parents are particularly mentioned by him, and disposed of in a very decided manner. He notices also the chemical theory and argues forcibly against it. Dr. Merei took a wide view of the subject and showed to what extent conditions of locality, of atmosphere, and temperature, had any part in its pro-

duction. There seems to be no point which has not been examined long since, and as far as possible decided. More than enough has been done to prevent erroneous and theoretical views, and we may save ourselves the trouble of going over well worked ground again. When we come to the subject of syphilis I shall have occasion to make some remarks upon its relation to rickets, and I shall give you evidence to prove that Cullen's conclusion was right. He says: "It has been frequently supposed that a syphilitic taint has a share in producing rickets, but such a supposition is altogether improbable." And then he gives the reasons which are most valid and conclusive.

Instead of trying to discover what is the cause of rickets in the hope of finding one in particular, let us recognise clearly the fact that the causes are manifold, and that each case has one or more to which the disease is due. There is a tendency to assume that because we cannot find one cause it is useless to do more in any case than order cod-liver oil and some preparation of iron. Every case of rickets requires special treatment as much as any other morbid condition, though it is true that pure air, warmth, and good food are of first necessity. In conclusion, let me say a word or two regarding the child whose case we have considered. It is clear that the chief trouble from which it suffers is the want of rigidity in the spinal column, and the consequent compression of the thorax. Consider how this can best be remedied. The weight of the head must be lifted from the spine, and we have to devise some plan to prevent the child from sitting up, as it does, all day in one position. The child prefers sitting up to lying flat, and to gratify its wishes in this respect some support

must be provided for the back. Therefore give support by an inclined rest to the spine, and arrange a pillow so that the weight of the head is to a great degree transferred to it. If the body be supported at an angle of 60°, or even less, the mechanical gain is great, and the capacity of the thorax much increased by the cortal intervals being thus extended. The bending of the back in young children is so often brought under notice, and so great a cause of anxiety to parents that I think the mechanical treatment of it is well worth attention.

LECTURE III.

Diseases of the Skin.—Dermatitis.

Before we examine some examples of the most common types of cutaneous disease in young children, let me make a few remarks upon this subject, which I think will be of practical use.

Diseases of the skin are very frequent in early life. In the annual report of this hospital, to which I have already referred, 1,187 cases in a total of 11,745 presented some form of cutaneous affection; that is about 10 per cent. They come second in numerical order, if cases of "debility and atrophy," which slightly exceed them, can be regarded as a special class. They exceed the cases of whooping-cough, of rickets, and of inflammation of the lungs, and, therefore, we may safely regard them as the most common disorders of infancy and childhood.

Dr. West purposely omitted to treat of this class, as he considered that they belonged to the province of the dermatologist; and the same view was expressed in another well-known work, namely, Dr. Vogel's, where he stated that the diseases of the skin in children are the same, in all important respects, as in adults.

Now, the first remark which must be made on this point is contradictory to such opinion. The diseases of the skin in children are very different indeed from those in adults. It is true they may resemble the latter in

certain anatomical characters, but, clinically, they differ to such a degree as to make it absolutely necessary for us to study them almost as a special subject.

Some diseases of the skin are nearly the same in early as in adult life. For instance, herpes only differs to this extent, that in children the eruption is not usually limited to the intercostal nerves, but is frequent in the suprascapular, humoral, anterior femoral, and other parts. In an analysis that I made a few years ago of a large number of cases of all forms of cutaneous disease in children, I found that about 67 per cent. were of a kind peculiar to infants and young children, and the others only differed, if at all, somewhat as herpes does. But these latter occurred in children above the age of infancy, and generally after the age of four or five years. Among them were the various forms of scrofulous disease of the skin, the true scaly eruptions lepra, and psoriasis, the parasitic diseases, the syphilitic, and some others, upon which I may have occasion to make a few remarks.

Let us confine ourselves to those which are peculiar to infancy and childhood. Their general characters are described by Trousseau in Lecture xiv., vol. ii. (New Sydenham Society), under the term Sudoral Exanthemata, a lecture full of interest and valuable suggestions. I would not venture to call in question the propriety of the term Sudoral Exanthemata if it were not that it rests upon a theory, the correctness of which is, to say the least, more than doubtful. There is no evidence to prove that the perspirations, common in infancy, are the cause of these eruptions, or that "the greater frequency of these affections in very young children arises from the manner in which they are clad." It is more probable

that the perspiration as well as the eruptions are due to one and the same cause, and that they are concurrent with, but not dependent on, one another.

It appears to me that the term dermatitis may be fairly used to include all the various morbid conditions of the skin, which Trousseau designates as sudoral exanthemata; and if it is objected that such a term is too general for accurate definition, it must be clearly recognised that the very fact of the multiplicity of forms assumed by these eruptions, makes it impossible to find any one term to include them all. This fact was fully recognised by Trousseau. "The number and variety," he says, "of sudoral eruptions associated together in the same individual, and their transmutations, even when produced by the same cause, is an important fact. My friend, Dr. Duclos, of Tours, in his excellent work on Sudoral Eruptions, shows most conclusively, though in opposition to the views of many dermatologists, that it is impossible to establish distinction of species upon anatomical characters alone, as these characters differ according to the epoch at which they are studied, merge into one another, and do not retain specific characteristics throughout their duration."

It is unnecessary to advance any further argument in favour of the term Dermatitis, for it is gradually being admitted by the best authorities, not only as a convenient term, but as a proper and scientific one.

The common diseases of the skin in infancy are truly due to inflammation. Sometimes the inflammation is slight and limited, producing only superficial changes; sometimes deeper tissues are affected, and surface discharges of serum or pus occur. Sometimes the inflammatory process arises in numerous small centres, as in

the very common affection popularly known as red-gum. Do not suppose that I would have you attach no importance to differences of anatomical character. I simply argue in favour of broad general views when treating skin diseases in infancy, and of relying much less upon anatomical character than is proper and necessary in the case of adults; and this for the reason that we find in the same child, one and the same cause capable of producing various forms of eruption. For the purposes of treatment, it is more important to determine the cause accurately than to decide upon the special name which ought to be given to the different cutaneous changes presented to the view.

Let us proceed at once to the clinical study of this subject. Our first case is a boy, aged one year and four months. His legs are spotted with small ulcers, which we should agree in calllng ecthymatous. There are some also on the left arm, but the rest of the body is almost entirely free from them. The backs of the legs, thighs, and nates are affected nearly equally on both side, and you can count about thirty separate centres of inflammation on each of them. This is a very common eruption, and in a case like this we can follow the changes through their various stages. The earliest stage which we can detect on close examination, is a minute red spot, slightly elevated above the surface, and which can just be felt as the finger is passed over it. In another spot we see a more advanced stage of the process. It is more raised, it is of yellow colour on the summit, and contains a minute quantity of pus. There is a wide area of redness around the base of this small pustule, which fades gradually into the surrounding surface. The ulcerated spots which we noticed at first are

in a stage much later. The surface has broken and covered itself with a crust of brown, varying in shades in different ulcers; the later the stage the darker the colour. The area of redness around some of the oldest ulcers is fading away already. Now, what is the history of this eruption? The mother states that these spots on the arms appeared only four days ago, the day after those on the legs; so that the life history of one of these centres of inflammation lasts but a few days. There are some of them which seem to have been arrested in their progress, and after nearly reaching the second stage the inflammation has subsided without rupture of the skin.

The history of the case is worth attention. The child has been under treatment for six weeks. It was brought at first for what the mother called "nettle rash," but was entered in the note-book as a case of strophulus (red gum).

It was well enough a fortnight ago for the mother to cease bringing it, and the present state has arisen since a week. The mother tells us the child had red gum when ten months old, but when she brought it the nettle rash was the chief trouble. I shall have occasion to make some remarks upon this form of urticaria. At present it is sufficient for us to recognise the fact that the child has been the subject of various forms of cutaneous disturbance, beginning with a papular eruption, which was associated with urticaria, and later assumed the form of ecthyma. The child was vaccinated at the age of ten weeks, and nothing followed to lead to the idea that vaccination was the primary cause of the cutaneous trouble. These ulcers are irritable, especially when he goes to bed. There has been no fever to speak of, and none of the symptoms of chicken-pox. In some cases

there is a good deal of fever, and that is a point to which I shall direct your attention presently.

The child's bowels are regular, he has four upper and three lower incisors ($\frac{4}{3}$); he is fed on bread and condensed milk, and beef tea; and runs about well. He has no sign of rickets, and is a well-grown child.

As far as treatment is concerned, it seems that good results were obtained very soon after he was brought here, and at the end of four weeks the cutaneous troubles subsided. On ceasing to take the medicines prescribed they returned in a different form. The treatment which think will be found most successful in such cases as this the administration of small doses of grey powder, or grey and Dover's powder, at bed time every other night; a combination of one of the salts of iron with sulphate of magnesia, repeated two or three times daily; and a hot bath at least once in the twenty-four hours. The skin should be dusted thickly with starch while still wet after the bath. If the surface is ulcerated, it is better to use a mixture, in equal parts, of precipitated sulphur and starch for dusting the skin. This is the routine treatment, if I may use the expression, which has been ordered in several hundred cases with satisfactory results. On this question of treatment, however, I shall enter into some details later.

Let us take the next case, a child of five months old, brought here for the first time this morning; a healthy looking, well nourished boy. The mother is suckling him, and there is no reason to think he is insufficiently nourished.

He was vaccinated three months ago, that is when two months old, on the right arm. The arm healed well. At the time of vaccination there was a little scurf on the

head, which began soon after to increase, and now there is general superficial inflammation of the whole scalp, the forehead, and the sides of the face.

There is a good deal of discharge of clear fluid, but the surface is not universally moist. If you look closely you will see that there are tracks where the surface is rather red, and is exuding fluid; but between these the skin is dry, smooth, and pale in colour. The fine rough scurf or scales, which are scattered chiefly over the back of the head, are formed from dried exudation and not from exfoliation of the cuticle.

The arms and legs are quite free from this affection, and the body also, except just on the back where the skin is very slightly scurfy, and on the right arm where, as you see, there is a very actively inflamed surface, from one and a half to two inches in diameter. It is an oval surface, red, very moist, and in some points bleeding, and we can just perceive the old marks of vaccination. This is a point of great interest, and worthy of consideration. This condition of the arm did not follow immediately on vaccination, for the arm healed and a month elapsed before redness around the vaccine spots appeared. The head and the arm became inflamed at the same time.

This is a typical case of superficial dermatitis of the head and face, or, if you prefer to call it so, of eczema capitis.

Here are two other children who have been suffering in almost exactly the same way, whose histories I will briefly give you, after which we will review the symptoms and discuss the pathology of dermatitis.

The first child is thirteen months old. Since the age of two months the head and face have been inflamed. The scalp has been red, moist, and irritable. The least pres-

sure caused abundant exudation of fluid. The forehead and cheeks were rather less inflamed. The case presented the most severe form of the malady, and, to use the mother's own expression, "the child was truly a sight to see." Vaccination was deferred till it was four months old, and when performed nothing happened in consequence. The arm took well and healed. The head remained in the same condition.

This was the condition which he presented when brought here five weeks ago. The head is now dry; the eruption has almost disappeared from the forehead. The irritation has greatly diminished, and the child is making a fair recovery. On the front of the left leg there are about a dozen minute papules, and on the right there have been a few similar, which the child has scratched and caused to bleed. These have appeared within the last week.

There is one fact in the family history to be noticed, namely, that two other children have had "sore heads." The only symptom of ill-health in this child was constipation, at least no other cause could be given for the condition of the head.

The treatment was almost the same as in the last case. Hot bathing for the head, then covering it with sulphur and olive oil; and the following medicine:—

Mis. ferri lax., ℥ij.;
Liq. arsencici, ℥j.

To be given three times a day. (Vide Hosp. Pharmacop.)

The fourth and fifth instances of dermatitis which we will take this morning are like the last but one. These two children, the one two years and two months old, the other four months old, were brought here seven weeks

ago. They were both in precisely the same condition as the second child we have seen.

The elder was vaccinated at the age of one month, and the head began immediately to inflame; and since then, that is for two years, the condition had remained the same up to the time the child came here. The younger child has not been vaccinated. There are four other children in the family, none of whom have suffered, but there is a hereditary tendency on the side of the mother, who tells us that ever since childhood she has been subject to "scurf" every spring. This fact must be taken into account, for the reason that occasionally we meet with very obstinate cases of dermatitis in children without satisfactory reasons for the chronicity of the affection, and it is only on inquiring into the family history that a probable explanation is afforded of the difficulty of obtaining the usual satisfactory results from treatment. The elder child is now pretty well. In the younger child the eruption is rapidly subsiding. It began to disappear on the back, where it was far less severe than on the head, and now only the summit and posterior parts of the head are affected. The face and forehead, like the back, are free from all signs of it.

The treatment has been the same as in the last case; hot baths, the application of sulphur and olive oil, occasional small doses of grey powder, and the internal administration of mist. ferri laxant., and liq. arsenicalis.

The common cause of dermatitis is some derangement of the digestion, due to improper diet, and though no particular allusion has been made to that point in treating these cases, the reason is that we have, as you probably know, a set of printed rules for feeding, a copy

of which was given to the mothers with orders to attend to them strictly.

I need hardly say that no soap of any kind is permitted, and great importance is attached to the use of the warm bath. The water must be as warm as the child can bear it, and the bathing must be continued for half an hour or more, and if this can be done night and morning the cure is accelerated.

Now do not despise minute details in the treatment of this class of cases, for success in treatment depends upon attention to details. I am surprised sometimes at the trouble and expense to which parents are put in consequence of the members of our profession, who are in fault by not considering these cases worthy of their attention. Let me quote a sentence from Trousseau's lecture—"Although the study of these affections is apparently of small importance, it really possesses a much higher practical interest than is generally supposed," and again, at the close of this same lecture—"I cannot sufficiently impress on you the magnitude of the services you may be able to render to your patients if you thoroughly realise the importance and frequency of sudoral exanthemata; and if, with a view to cure them, you have the courage to fight against the deplorable prejudices propagated by physicians of a former century, and which it is your duty to endeavour to eradicate."

This last sentence was not intended to apply so much to children as to adults, but I could easily prove to you that it does apply quite as truly. The only way, however, to remedy the defects of our profession is to study to gain deeper and more accurate knowledge. Ignorance is the cause of our deficiencies.

Now, where shall we begin to study this question of

dermatitis? If I were to put the question: "Do you think that vaccination is a common cause of dermatitis?" you would answer, probably, "there is a general idea that vaccination does cause it, but this is a popular fallacy." Tell me, then, what is the cause of this condition in the child which we have been studying this morning? Are you quite sure that vaccination has nothing to do with it? Do you not think it possible that if this condition follows a discharge from the ear, or the wound caused in the cure of a nævus, or after an attack of chicken-pox, when some of the pustules have inflamed; it might also follow vaccination?

Here is a subject worth study. It is because Trousseau saw it in this light that I said his lecture was valuable and suggestive. "There are some people whose blood—to use the common expression—is poisonous (venimeux). Under the dominion of a true suppurative diathesis, the smallest wound, the slightest excoriation, becomes the starting point of interminable suppuration in some people; an ophthalmia or coryza, resisting every kind of treatment. In patients of this diathesis—chiefly children, you will often see erupting eruptions, generally vesicular, and pustular, supervene, even after perspirations which are not very profuse." I have warned you against the sudoral theory, but putting that aside, you see how deserving of serious consideration this subject appeared to Trousseau. On some future occasion we will return to it.

LECTURE IV.

Whooping-Cough.

Let me direct your attention to this infant, aged only seven weeks, and suffering from whooping-cough. It is the first child. There were no other children in the house from whom the disease could have been contracted. It seems that four days after her confinement the mother was visited by a friend whose child was an out-patient here, and was under treatment for whooping-cough. Ten days after the visit of this friend, who did not bring her child with her, the infant showed the first symptoms of having been infected. The case is brought under your notice chiefly for one reason, to show the very infectious character of whooping-cough. Similar instances to this one have come under my notice, and will probably occur to you in the course of professional experience. It is in private practice that the best, indeed, almost the only opportunities of studying this disease present themselves; for, naturally, cases are excluded from our hospital, except as out-patients, and it is quite impossible from seeing a child once or twice a week for a few minutes, to become acquainted with the many and strange phenomena of this disease.

I am prevented, for this reason, from illustrating clinically the remarks I propose to make. Here are two more children, aged—the elder 3 years, the younger 3

months. The former caught whooping-cough at school, and has had the cough about a fortnight—that is, she had a dry cough for a fortnight, and whooped two days ago. The mother suspected what it was as her eldest child, æt. 5 years, had the disease when 9 months old. The infant has had a cough a week, but does not whoop. He is suffering very little. He throws his milk up, and has attacks of cough of considerable violence.

Here is another case. An infant, which was ten weeks old when it came here five weeks ago, was a delicate child wasted from improper feeding, or rather artificial food. He improved greatly on very simple treatment, and now he has caught whooping-cough. His mother calls it a cold, and says that he is scarcely less wasted than when he was first brought here: that is, the fever during the last fortnight has reduced him greatly. He has no diarrhœa. He does not whoop but has violent coughing, and is quite exhausted by it.

It is true that the one striking symptom of whooping-cough is exhibited daily in the out-patient rooms, and the ear becomes so accustomed to the peculiarities of the cough that it often requires no history of symptoms to aid diagnosis. That was the case with the first infant. I heard it cough, and though some probably would have detected nothing of a whoop in the sound, those who have seen many infants at this early age suffering from the disease know well that the whoop is a very rare symptom, the reason being simply that a young child cannot vocalise a whoop. It has neither the power nor the organs to do so.

I think that this fact is gradually being recognised by us all. At one time, and not long since, it was believed and taught, unless the whoop was heard, the case was

more than doubtful. This was a serious error; indeed, it would be difficult to find a single example of erroneous doctrine so serious as this for reasons which are self-evident.

The peculiarity of the cough is simply that it is due to laryngeal irritation. The cough of bronchitis differs from the cough of pneumonia; and when either or both conditions co-exist with whooping-cough, the character of the cough necessarily varies; but as far as whooping-cough is concerned, the cough is due to laryngeal irritation. You may hear the same kind of cough in children, with large cervical glands and possibly this fact may have led some to infer that in whooping-cough the glands are affected.

In the successive stages of this disease there are many symptoms quite as important, if not more deserving of observation than the whoop. There are, firstly, the symptoms of feverish disturbance which belong to the stage of incubation, the loss of appetite, refusal of food, rise of evening temperature, and wasting. There is nothing very definite, it is true, about these conditions, and for that very reason they deserve close attention. The study of them is necessary if we wish to understand the nature of the disease, and their diagnosis is sometimes of great importance.

If, therefore, in a family of children the symptoms of whooping-cough are well marked in one of them, but other children have not been infected, it is well to take advantage of the opportunity to study the early symptoms. If any symptoms are more striking than others, they are those of wasting and debility, which are caused by the fever. I think that these effects of whooping-cough are greater than those produced by measles or scarlatina.

There is one more symptom to which I would direct your attention—the symptom of diarrhœa; usually occurring in the hot weather, and not unfrequently diagnosed as the special disease, infantile diarrhœa. It is a very serious, and often fatal symptom. The only observation to be made respecting it is that the laryngeal and pulmonary symptoms usually subside when that of diarrhœa arises.

Rarely, very rarely, indeed, we may observe attacks of sneezing which are spasmodic in character, and are apparently somewhat similar in origin to the whoop.

On the subject of the complications of whooping-cough it is not necessary to make any particular remarks. Congestion and inflammation of the respiratory organs, and convulsions are frequent, and sometimes very serious or fatal. The history of all the diseases of the zymotic class is in my opinion very interesting, To go back to the earliest records of such a disease as whooping-cough; to read and study the descriptions given of it when it first began to attract the attention of the profession and the public, and then to trace its progress through a long series of years, is, I think, a highly attractive and intellectual literary occupatlon. More than that it is a very instructive one, for it helps us to understand the disease better than we can from simply studying the works of contemporary writers, and prepares us for those variations which time and circumstances or causes which we little understand, may have produced in the phases and features of the malady.

It is in the works of Dr. Willis, published in 1667, that we find the first clear account of whooping-cough. "This kind of convulsive cough is very frequent among children, and some years lays hold on so many that it seems to be

plainly epidemical." Those are the words of Willis as translated in the edition of 1684.

Some have endeavoured to find an earlier description of the disease in the works of Hildanus, published at Frankfort in 1646, but the account is too obscure to justify the opinion that he had formed any conception of the special nature of the malady.

Sydenham, in his remarks on the epidemic diseases of the years 1675 to 1680, refers to the prevalence of whooping-cough, and it is quite clear that in his day the symptoms were well known and diagnosed.

The bills of mortality for London, published by Willan in 1678, contain references to the disease, and from then till now but little has been added to our knowledge of its peculiar exceptions, except that within the past few years attention has been given to the far greater frequency of the disease than was formerly suspected, and to the correction of the error of supposing that the symptom of the whoop was necessarily and constantly present.

Much has been written on whooping-cough which is only to be read by way of warning against errors. I think that when an author treats a serious subject like this in any but the most serious manner he is undeserving of attention or respect. I confess that when I found Niemeyer condescending to mention the idea that a child could resist the spasm and that the rod was one of the remedies which might possibly be advised in some cases, a feeling of suspicion arose in my mind that Niemeyer's experience of the disease must be very limited, and that he knew little of the grave nature of the malady, when he could venture to trifle thus with its treatment.

When a disease like this prevails among us and causes

an immense mortality year by year, we are bound to study it in a serious and scientific manner, and not to indulge in hasty ill-considered opinions.

It is to be feared that experiments in treatment will not lead to any satisfactory results. It is better not to indulge in any idea of discovering a specific for this disease. Any one who expresses a strong view on the value of some particular remedy, may be reasonably suspected of insufficient observation and experience. In practice the best plan is to divide your attention between the general and the local symptoms, or rather to treat them separately. By the local symptoms I mean the laryngeal spasm, and for this the treatment must be chiefly local. Among the local remedies there is none which gives more decided relief than the inhalation of carbolic acid, a combination such as is used in this hospital, of carbolic acid, oil of pine, and tincture of benzoin. Alum is a popular remedy with honey, and this acts apparently locally. Bromide of potassium and tincture of belladonna iv. to v. grains of one with iv. to v. minims of the other, seem to diminish the laryngeal irritability for a time, but in severe cases no great benefit is derived from them. As regards the general treatment we have to consider the symptoms of fever, and wasting. Ipecacuanha, small doses of antimony, quinine, and cod liver oil are the chief agents which may be employed in the relief of these symptoms. The great value of change of air, particularly from London or inland to the sea, is well known, and in the latter stage of the malady is superior to any medicinal remedy.

I will explain the best method of obtaining inhalation of carbolic acid in another lecture, and I will conclude these remarks with the routine treatment, if I may use such a

term, which in the majority of a large number of cases I generally adopt. If the disease is in the early stage I prescribe from half a drachm to a drachm of the Mistura Potassii Bromidi et Belladonna of our Pharmacopœia with an equal quantity of Mistura Oxymellis Scillæ, and order the application of turpentine liniment every night to the thorax and back; and the inhalation when possible of the fumes of Stockholm tar, obtained by gently heating the tar or stirring it with a hot poker. This is an economical and effective plan of treating the spasm. In the later stage of the disease the bromide and belladonna mixture should be given only at bed-time, and during the day small doses of cod-liver oil and iron will best repair the condition of wasting.

As the mortality from whooping-cough is much greater in infants under twelve months than in children above that age, it is well to protect the former as much as possible from any risk of infection.

LECTURE V.

Defective Intelligence and Imbecility.

Idiotcy or imbecility is a subject of deep interest. If you wish to study it, or even to know only what every physician ought to know on this matter, let me advise you to visit the Asylum at Darenth, near Dartford, or at Earlswood, near Redhill. Many imagine that the subject is unworthy of much attention. That is the opinion of the ignorant and those incapable of taking the trouble to analyse the various phenomena of idiotcy.

What gives it so much interest is this: that in many cases we clearly see that the conditions of moral and intellectual defect are due to a distinct physiological or pathological cause.

In cases of insanity we are generally at a loss even to conceive what influence has disturbed the brain, and are obliged to confess that the phenomena are quite beyond our present powers of explanation.

It will probably occur to you, if you consider the subject of idiotcy, and observe several instances of it, that the study of its pathology ought to yield some good results, and might perhaps lead to the understanding of the more complex phenomena of insanity. Let me suggest this as one reason for inducing you to give some attention to this subject. In daily life, however, the chief demand which is made on our

professional knowledge is such as you can well estimate from the cases before you this morning.

Slowly the suspicions of the mother are aroused that her child is not as other children. At first this difference is thought to be simple backwardness, and the waywardness of disposition is attributed to what is commonly called "temper." Of course the time comes, sooner or later, when the parents seek advice and an explanation of the conditions, and we are required to answer questions of great difficulty if we have had no experience of such cases. We cannot satisfy these inquiries as readily as is generally possible in ordinary kinds of illness, where the parents possess sufficient knowledge to enable them to understand us easily. The reason is this, that they cannot discover the cause of the troubles. The cause is the most important point in their opinion. It is useless to try and make parents understand that the knowledge of the cause of the child's condition is of no practical importance, as far as the management of the child is concerned. You will not, however, persuade parents to follow your advice unless you can throw some light upon this question. You will generally find that there has been a good deal of discussion in the family circle on the reasons why one child should so differ from the others. To them it is a subject of deeper interest than you might imagine. It may be connected with painful associations to which their minds revert with feelings of sadness, perhaps of shame. Be careful, therefore, how you treat the question of cause, for you cannot tell what importance may attach to your opinion.

We will return to these points when we have examined the two children before us. Let us take the boy first, a typical case of idiotcy of a certain class. He is a well-

grown boy, 3½ years of age, able to run about, and is as active and strong as most boys of his age. He can hear well but cannot talk. He fears being separated from his mother. I won't attempt to describe the expression of his face. This would be best done by comparing it with some of our higher mammalian acquaintances at the Zoological Gardens. The child cannot understand you, and you cannot understand him. He looks at you in somewhat the same inquiring way as a highly intelligent monkey, who seems as if it could understand if one only knew better how, or in what language, to address it. He is not like the deaf and dumb child. He can hear and appreciate differences of sound. More than that he is, like most children of this class, greatly pleased by musical sounds. This fact has been well applied at the Darenth Asylum, where the children are made to move to different parts of the large class room in the most orderly way by the music of a piano.

Before we ask his mother any questions, let me draw your attention to the fact that the child squints. The right eye seems to be chiefly affected, but there is internal strabismus of both eyes. This adds something to the lack of intelligence expressed in his face. It does more than that; it aids us in our inquiries into the history of the case. I will venture to predict that some injury has happened to the child, a fit or a fall; probably before it was twelve months old. The mother says that this is not so, and that, so far as she knows, nothing occurred to herself to disturb her in any way during her pregnancy. The next question I will put to her is this: Were instruments used at the birth of the child? Yes. All her children have been born with instruments, and that of five only two survived their birth, this one, and one a few

years older, with whom there is nothing wrong. The brain of the child, without the least doubt, was injured at the time of birth by the use of the forceps, and these are the results. They are not uncommon, and are almost so well defined that you can say of one child this condition has been caused by some maternal influence transmitted to the infant in utero through the mother; while that is due to influences exerted on the child directly at the time of, or subsequent to, its birth, a fit, a fall, a blow, or injury from instruments. This boy is now beginning to be very troublesome. He is mischievous, and cannot be left alone in safety. For his own sake, and for his mother's, he ought to be placed in an institution, such as that at Darenth. For the convenience of parents who come to this hospital, we have had directions printed giving such information as they require for sending a child to Darenth. My friend, Dr. Fletcher Beach, the medical superintendent there, kindly arranged this for us. Unfortunately, children are not admitted under five years of age, so that a year and a half must elapse before this child can be sent, and by that time the mother will have overcome the objection she naturally feels to parting with her child, and will have realised the impossibility of managing it at home.

So far as the child's health is concerned there is no symptom which requires special treatment, and I shall dismiss the case without further remarks. The mother will come here again in a few months, and then, if not before, we will discuss the question, how far the conditions we have been observing are due to sensible changes in the brain.

The second case is also one of a class, but a class very different from the last. This girl is two years and

half old, and is a good example of microcephalism, that is to say, of smallness of the cranium. She cannot sit up, or walk, or talk. The legs and arms are wasted and partly paralysed, and they flap about when she tries to use them.

This is a more common case than the last; indeed, it is the form of mental defect to which the term idiotcy is commonly applied. There is no doubt, I think, that the size of the brain is the chief determinant of the mental power of the individual, and when there is no disease of the cranial bones or hydrocephalus, the measurements of the skull will enable us in this class of cases to estimate the degree to which the poor child is affected.

In this family there are three children older, and one younger, all of average intelligence; that is to say, they in no way resemble this child.

If you examine the head rather carefully, you will notice that the measure of the circumference is small, but more than this, the vault of the cranium is shallow and rather pointed, the forehead recedes, and the cranial cavity is clearly considerably less than is indicated by the simple measure of the circumference. It seems to me enough to point out these general characters of the microcephalic skull without entering more minutely into details. The weight of the brain has been ascertained in many such cases, and many interesting observations, anatomical and pathological, are recorded.

The circumstances under which the child is brought to the physician in this class of cases are much the same as in the class last considered. There is this difference that the mother attaches most importance to the want of power shown by the child to support itself, to sit up, or stand, or move. When the child is in its infancy, and up

to the age of twelve months or later this want of power is shown chiefly in the way in which the head hangs forward or otherwise, according as the child is held.

You will notice how the expression of this child's face is due in some degree to its small size, but much to the ill-developed and receding jaw. There is a sad, grave, listless look which alone is enough for diagnosis, and which you may recognise in the very young infant. We will let the mother leave now, and I will pass on and discuss the question of the cause of this misfortune, which greatly distressed her. It is a subject to be approached with tact and delicacy, much more so than in the last case. Some trouble happened to the mother of this child during pregnancy; not an accident to her person, but what was more serious, some purely nervous or mental shock. I have learnt this much, that during her pregnancy something happened in connection with her husband, but she refers to it with such evident pain and reluctance that I have not ventured at this first visit to push inquiries into the secrets of the family. It may be that he ill-treated her, or perhaps she had reasons to suspect his faithfulness, or some business misfortune may have happened, though this last is not probable, for as far as I have observed women are happily but little disturbed by this cause, or there would be many more idiots in this great city than there are. You will find if you pursue this line of inquiry that it will lead into the region of speculation in which the metaphysician likes to wander, and shall I say indulge his fancy to little purpose. There is nothing new to be noticed in respect to maternal impressions, except, perhaps, that what is true is unbelieved, and what is not true is imagined to be so. It is sufficient for us to

recognise the fact that idiotcy as presented by this child is more often due to some violent disturbance of the feelings of the mother than any other cause. When I asked Dr. Beach, whose experience at Darenth is very large indeed, what his opinion might be on this point, I found that we held the same views, though Dr. Beach told me when he first took office at Darenth he was more than sceptical upon it. You will probably ask by what means the infant in utero can be influenced in this way through the mother. Do not conclude hurriedly because we cannot explain a thing like this that it is not true. That is not the way to improve our ignorance.

This child's condition is more hopeless than that of the first. The physical powers will increase, and the time will come when it will be able to stand and move about; but there is no hope of its ever being able to take care of itself, or of being educated to any purpose.

As far as the physician's aid is of service, he has chiefly to treat occasional symptoms of cerebral excitement from which such children suffer. They have long spells of crying, or moaning, rolling or jerking their heads, passing into convulsions or coma, and these conditions succeed one another in such a way as to keep the parents, in constant anxiety.

These are the symptoms which we have to advise for during the first two or three years of the child's life. The remedies are few and simple. Bromide of potassium and tincture of belladonna, five grains of the former with five drops of the latter, may be ordered as occasion requires. Children are admitted into the Darenth Asylum at the age of five years, but in many cases it would be well to remove the child a year earlier, for its presence in a family where there are other children is a sad trial

to the mother, and is frequently the cause of her younger ones being similarly affected. An example of this I brought before you not long since. The eldest boy was under my care in 1878, that is six years ago. He is now nine years of age. He was much in the same condition as the boy whose case we began with to-day. The cause assigned by the mother was the sudden death of an elder child, an infant, two months before the birth of this boy. Now she is coming here with another child two years old, whose condition closely resembles that of her eldest boy. This child's state she attributes with good reason to the anxiety and distress occasioned by the elder one. Thus we see the absolute importance of removing the child afflicted as soon as possible.

I think that you will agree with me that the subject of idiotcy deserves careful study, and that serious responsibilities rest upon the family adviser whenever such cases as those above detailed are submitted to him for his opinion and advice.

LECTURE VI.

Vaccination. Vaccinal Eruptions and their Treatment.

We will discuss to-day the question whether any ill effects can reasonably be attributed to vaccination, and whether there are any grounds for the prejudices against it, which of late years have been gaining an influence over a certain section of the public. It is hardly necessary for me to point out the importance of this matter. It would be impossible to name a question in which the interest of the public is more greatly concerned; for if small-pox is ever allowed to prevail among us, we know well what we have to expect from its ravages. If the prejudices to which I have referred existed only in the minds of the ignorant and uneducated, we could afford to disregard them, but there are some educated and influential persons, who while admitting the value of vaccination, are inclined to treat very leniently, and as though they had good reason, the views of a considerable number obstinately opposed to it, and whose foolish convictions may lead them to injure their own children and society, if they are allowed freedom of action in respect to this matter.

It is our duty therefore, to examine these prejudices, both for professional and personal reasons; for professional because we should otherwise fail in respect for the memory of the great man to whom we owe the inesti-

mably valuable practice of vaccination; for personal reasons, because it is our duty to oppose ignorance, to spread knowledge, and to benefit our fellow creatures to the utmost of our power.

In the interests therefore, of truth and humanity, let us address ourselves to the serious consideration of this question.

I bring before you a case of recent vaccination. You saw the child fourteen days ago, when it was suffering from an extensive cutaneous eruption, the consequence of vaccination thirteen days before. Let me recall to you the conditions presented by the infant and the principal points in the case.

Its age was 8 months, it was born of healthy parents, and previous to vaccination was in good health, with this exception which must be borne in mind, that it had shown a slight tendency to skin eruption or dermatitis. For fear of this condition being increased the vaccination was twice deferred till the child was apparently in perfect health, and the cutaneous troubles had subsided. The mother took him to the calf-lymph station in this neighbourhood thirteen days before you saw him. We found five large brown crusts on the left arm where he had been vaccinated, and the skin of the body was extensively affected with a form of eruption common after vaccination. The arm was much inflamed; the tissue around the dried vesicles was red and swollen. In various parts, but specially on the head, face, and chest, the skin was irritable, spotted with vesicles of different sizes, and discoloured by broad areas of erythema. We examined the left forearm closely. There was one large patch redder than the healthy skin extending over a third of the outer side of the arm. The margin was distinct, slightly ele-

vated, not unlike the wheal of urticaria. Within this area were several vesicles varying in size and shape, some very minute, others well elevated, round, and containing clear fluid; some few long and rather narrow, but like the others in other respects. On the wrist there were a few red spots with minute central vesicles. On the face, head, and round the ears were sores which had resulted from broken vesicles, some drying up, others discharging pretty freely. The child was evidently much irritated and constantly tried to scratch itself. The back of the neck and the chest were like the arm, erythematous and spotted with vesicles. On the legs, abdomen, and buttocks, there was less to be seen, but from the mother's account, it was clear they were developing similar morbid conditions.

The first sign of any trouble from vaccination was on the third day after the operation, when the skin began to be spotted in different parts with erythema, and three days later numerous vesicles appeared. This at least was the account given by the mother. The symptoms have greatly changed under the influence of treatment. The skin of the face is free from eruption; the swelling and redness around the vaccine pustules has disappeared, and the ulcers have almost healed. A few spots of lichenous character appear on the forearms and on the neck from day to day, subsiding quickly without breach of surface, and attended with only slight irritation and redness. The treatment has been very simple, but it has been strictly followed out. The skin has been well bathed with hot water, that is with water as warm as the child could bear, night and morning, and then dusted while wet with sulphur and starch, fine precipitated sulphur mixed with

an equal quantity of starch. Small doses of sulphate of iron and magnesia have been administered internally.

You perceive what a marked improvement has taken place in the child's condition. It has gained flesh, and has a cheerful expression, the best evidence of improved health. Repose and sleep have contributed chiefly to this result. Previously they were impossible from the constant irritation of the skin. It must be allowed that improvement has been unusually rapid in this case, but it may be observed that an eruption of recent date is more amenable to treatment than when it has lasted for a longer period of time.

When we were engaged on the subject of dermatitis I made allusion to the connection between that affection and vaccination, and some examples similar to the one we have just been examining were brought under your notice. I referred you to Trousseau's Lecture on Sudoral Exanthemata for valuable remarks on this subject, and now let me ask you to read his Lecture on Vaccinia and Vaccination, in which he deals with the popular prejudices against the operation, and treats the subject in a way which impresses the mind with admiration of his extensive knowledge, and original powers of observation as well as of the philosophical and scientific spirit, which he brought to bear upon and explain the phenomena under consideration.

At the International Medical Congress, held in London three years ago, Dr. Behrend communicated observations on vaccinal eruptions. A translation was published of Dr. Behrend's remarks in the *Archives of Dermatology*, vol. vii., No. 4, October, 1881. On the occasion referred to a short discussion followed, in which only two dermatologists took part, but these were the two most distin-

guished in Europe, Dr. Von Hebra, of Vienna, and Dr. Hardy, of Paris.

It appears to me necessary, before we can hope to arrive at any clear conception of the relation between these eruptions and vaccination, that we should try and explain the more definite eruptions symptomatic of the specific fevers. Have we any reasonable explanation to offer for the difference between a typhoid and a typhus spot on the abdomen? In small-pox we find the mucous membranes are affected in the same way as the skin, and that points of active changes occur upon them which are evidently due to the same cause in cutaneous and mucous tissues alike. In fatal cases of variola the most striking pathological condition is the deep staining of the tissues with the colouring matter of the blood, and this is due, not to the escape of blood corpuscles from rupture of vessels, but from destruction of the corpuscles and transudation of the colouring matter. It would therefore seem probable that altered conditions of the blood are the causes of various eruptions or discolourations of the skin, at least in the case of the specific fevers. Seeing how the eruptions which follow vaccination are multiform in character, we must be prepared to admit that they are possibly due to different conditions, although apparently arising from one and the same cause.

In some cases the eruption appears very soon after vaccination—on the second or third day—and you might imagine that such an eruption might be due to specific vaccinal fever. The evidence is against such a view, as Trousseau perceived, and as Dr. Behrend makes a point of. An eruption appearing two or three days after vaccination has the character of a roseola, and is not vesicul ar like vaccinia.

My own experience agrees with Dr. Behrend, therefore, on this question. We come back, then, to what is the cause of these eruptions. You will probably have opportunities of observing that the occurrence of an eruption after vaccination depends very greatly—I should almost say entirely—on the amount of action in the locality of the operation. When the skin inflames around the punctures, then we see eruptions occurring. You will sometimes meet with instances of extensive eruptions exactly similar to those which follow vaccination where they have been due to a wound in the skin from injury or other cause, and where inflammation has followed in the part injured. On referring to my note-book for such examples I find the following of common occurrence. Within a period of a few months there were two cases of dermatitis of the head and face following herpes zoster; one of impetiginous eczema after the scratch of a cat; one of dermatitis following otorrhœa; one of ecthyma of the arms and legs from the same cause; another case of dermatitis from the scratch of a cat; one similar after ring worm; one of ecthyma after chicken-pox: one of dermatitis after an abscess in the arm; another case after chicken-pox. In three cases dermatitis followed the treatment of nævus with nitric acid. These last three cases occurred some years ago, and are not to be included among the former, which, as I have said, followed closely on one another, with intervals of only a few days between them.

I mention the three cases connected with nævus because the children were quite healthy before the operation, and the occurrence of the eruption led me to give some attention to this subject, and to suspect that the professional idea of vaccinal eruptions being only coincidences

might possibly be farther from the truth than the popular notion to which so much of the prejudice to vaccination was clearly to be attributed.

Let us now consider how we can apply these views in practice. In the first place we must fully and freely admit that certain effects—evils if some wish it—may follow vaccination; but if we go on to explain how these happen, what a different conclusion must an unprejudiced person arrive at respecting the relation of cause and effect from that which is ignorantly advanced by the opponents of vaccination.

The next question we naturally ask ourselves is this:—Seeing that the cutaneous disorders arise from a local cause, may we not possibly diminish, or entirely prevent the possibility of the operation of vaccination being attended with local disturbance?

It is quite clear from the case of calf-lymph vaccination we have examined to-day, that it matters not whether the source of the lymph be from the human subject or from the calf. The local inflammatory action around the vesicles being the determinant cause of the cutaneous eruption, it is clearly of first importance to take steps to prevent this as far as possible. Seeing, also, that in this case, as in many others, there may be a tendency to dermatitis, hereditary or diathetic, which would favour some form of eruption, may we not explain to parents the difficulty in which we are placed, and so escape the mistaken accusations which they might make against us or the operation?

In practice the following plan may be adopted:—Recognising the fact that lymph ought to be taken on the fifth or sixth day, and not later, for fear of any products of decomposition being mixed with it, vaccination should

be performed in *one point* only ; and, further, that in the introduction of the lymph only the slightest injury should be done to the surface—that is to say, only the superficial layer of epidermis should be removed. We know well that the inflammatory process has a tendency to spread along the subcutaneous tissue very readily, and when we recollect that the skin of the infant is far more delicate than in the adult, we ought to limit the depth of the incision just sufficiently to expose the vaccine lymph to the absorbent action of the superficial lymphatics.

By vaccinating in one point only, we diminish considerably the probability of local inflammation, and though it may be allowed that three punctures afford more certain protection than one, I have satisfied myself of the great advantages of the plan that I am now recommending to you.

There is another matter, however, of considerable importance, and on which I must say a word before concluding. After vaccination has been performed, and the lymph has been absorbed, local inflammation may be prevented to a surprising degree by local treatment. By fomenting the arm with hot water night and morning, dusting it with zinc oxide, starch, or precipitated sulphur, and then protecting it with a covering of lint and plaister, the vesicle will pass through its various stages with little irritation, pain, or trouble to the infant. Instead of the arm being inflamed, even to the extent commonly noticed, the great object which we ought to keep in view is attained, namely, the production of a certain constitutional effect, which, after all, is the purpose of vaccination, with the least amount of local injury, which is certainly no necessary part of the operation, but is the evil most distinctly to be avoided.

LECTURE VII.

Infantile Paralysis.

"I, who in a city had probably been condemned to hopeless and helpless decrepitude, was now a healthy, high-spirited, and my lameness apart a sturdy child —non sine diis animosus infans." (*a*) Thus Sir Walter Scott described himself at the age of four years. He tells his history from the age of eighteen months, when attacked with infantile paralysis of the right leg, in such graphic language, and with such truthful and exact detail that his account of this singular malady may be read with profit and pleasure, even by those who are studying the subject with a strictly professional object. There is no reason to believe that this accident of very early life is more common now than in those days, but if we compare the state of knowledge at that time with what it is now, we cannot but feel surprise and satisfaction, at the striking progress which has been made in medical science of late years, and especially in the class of diseases of the nervous system, in which infantile paralysis is included. It is unnecessary for me to give any general description of the malady, for its symptoms are generally so well known that only rarely they escape detection. Occasionally, however, cases present themselves to our notice where some

(*a*) "Memoirs of Life of Sir W. Scott, Bt." By J. G. Lockhart, vid. Cap. 1.

little care is required before we can make up our minds on the question of diagnosis. Such a case we have before us now. This boy is seven years of age, he is a delicate looking boy, and not well developed. He is thin and rather feeble, and nervous; yet he is intelligent, is in fairly good health, and manages to walk about well though with a slight, almost imperceptible limp with the right leg. He has been under treatment for some time for rickets, without improvement. If we watch him as he walks across the room the right leg seems to be weaker than the left. The limb seems to be shorter. The knee looks as if it bent a little inwards, so that the possibility of the boy being knock-kneed might well suggest itself; and we can easily understand why he has been treated for rickets.

The knees are certainly nearer one another than in well formed boys of his age, but there is a slight difference between the two knees. The right patella seems somewhat flatter than the left, and the knee-joint seems to bend a trifle backwards. Note this difference for it is important, and is enough to make us doubtful of the previous diagnosis. As the boy stands observe how he hangs his hands. The right is turned just a little more than the left, so that the back of the right hand looks more forward, and the palm more backward.

The next thing for us to do is to compare the measurement of the two legs. There is a difference as you see of nearly half-an-inch between the circumferences of the left and right calves; and the same between the measurements of the thighs. The difference is small, but important. If you let the boy grasp your fore-finger as tightly as he can, first with one hand and then the other, there is, I think, a difference in the tension [he can exert

in favour of the left hand. His mother gives no account, of anykind which would aid in the diagnosis, except that, he has been noticed to walk slightly on the right toe, and she tells us that his father has lately raised the heel of his boot about half an inch. There is no doubt in his mother's mind of the difference in size between the two legs. She has seen that for long past. We can obtain no account of infantile illness; there has been no fit or other symptom of nervous trouble.

The first sign of anything being wrong was when he began to walk at the age of eighteen months. Now, to make a mistake in diagnosis in a case like this, and treat it as one of rickets when the conditions are due to a central lesion of the nervous system would be a serious blunder though it might be a pardonable one. The child's health would be improved by general tonics; and so far as his lameness is concerned no great disadvantage would result from avoiding all special treatment, the difficulties arising from it being so slight. There are many cases like this. Well-marked infantile paralysis is easily diagnosed, but many cases of slight paralysis are not detected till the somewhat dull observation of parents is aroused by the remarks and solicitations of others more appreciative than themselves of the defects of the child.

You know that in certain cases of rickets there is a considerable loss of power, at least, the legs hang or dangle in such a helpless way as to make one hesitate for a moment in deciding the cause of the condition.

I can also conceive it possible to be in temporary doubt in certain cases of chorea, for now and then we see chorea assuming, in rather a striking manner, the features of a paralysis. I am speaking now from the remembrance of some uncommon cases which have come under my own observation.

Such possible mistakes however, can be avoided if we are properly careful. The well-known change which occurs in paralysed muscles, and their rapid atrophy enable us to apply the simple test of measurement; and by comparison between the healthy and affected limbs to decide the question.

Let me now explain why the paralysis of infancy is well worthy of our observation and attention. It is not because it demands care in treatment, and requires us to understand the mechanical principles on which that treatment so greatly depends; but because there are many nervous accidents which occur in early life, the effects of which as they are more or less permanent, so they influence to a degree you would hardly imagine the future of the individual. This undoubtedly was the case with Sir Walter Scott, and probably with Lord Byron, whose lameness was due, I imagine to some similar nervous lesion.

Recently the chief direction taken by those who have been interested in this subject has been that of pathological rather than clinical research. The pathological study of infantile paralysis is not possible however for those engaged in ordinary practice, and must be left to the few who are qualified by circumstances and special knowledge for such investigations. The clinical study of the subject is possible for all, I mean the independent and thoughtful observation of every case that comes under notice.

It seems to me extremely probable that the lesion of the nervous system which occurs in such a case as we have been considering is a much more common occurrence than is generally supposed.

More than a hundred cases have passed under my

personal notice at this hospital alone in all of which there were clear reasons for concluding that the lesion had occurred in the spinal cord; but when I reflect upon the histories of some of these cases, and particularly upon those details which were given of the attack which immediately preceded the paralysis, I am led to ask the question whether lesions in some part of the brain, very similar in nature to the spinal lesion, which causes paralysis of the muscles of extremities, are not generally the cause of that common form of paralysis which is indicated by strabismus, or of those rarer defects in the senses of hearing and of speech which we occasionally meet with.

Of course such a view as this must be advanced as only theoretically probable until supported by pathological evidence. At the same time we are fairly allowed to reason by analogy to a certain extent, and give proper weight to deductions drawn from clinical observation.

You are probably well acquainted with the valuable contributions of Prof. Charcot to our knowledge of the pathology of infantile paralysis. His lectures contain not only the result of his own researches, but likewise a distinct historical statement of the work of others. For this reason they should be referred to frequently.

The practical treatment of the deformities of the limbs which commonly occur in this form of paralysis, has been most ably dealt with by Volckman, whose lecture in Vol. lxvi. of the New Sydenham Society is deserving of careful perusal. Volckman has explained the reason for deformities occurring on correct mechanical principles; clearly showing that these must be understood and appreciated by those who would attempt to treat such deformities. I have derived so much interest, and so many

suggestions from Volckman's arguments and remarks, that I strongly recommend you, if you are not already acquainted with the lecture I refer to, to consider it with attention.

When reading Sir Walter Scott's account of himself, and recalling certain cases that have come under my observation, I have been struck by the fact that the total neglect of all kinds of mechanical treatment has in some cases at least, been attended by apparently little if any disadvantage.

Let me mention one case in particular. A short time ago a girl, 11 years of age, came here with her mother, who had brought her eight and a half years previously, with paralysis of the right leg. The hospital letters and my notes made at that time had been carefully preserved. We were able therefore to complete the history of the case which thus extended over a considerable period.

Soon after she began to walk, she went to bed one night, well as usual, and in the morning the right leg was found to be paralysed. Four months passed before she was brought here, and the leg was then much wasted. She remained under observation for some months, no special treatment being purposely adopted, as the child was unable to walk. Distinct, though simple directions were given for keeping up the temperature of the limb, such as gentle rubbing night and morning, douches of warm water, and extra covering both day and night.

At the age of eleven we found the limb somewhat wasted, but the girl walked with only a slight limp. The toes pointed outwards, but there was no turning outwards of the sole of the foot; in walking it was planted fairly down on the ground. The mother had been careful to continue the same general treatment of warmth and friction during

the interval referred to, of more than eight years, and to this I am inclined to attribute to a very great extent the fact that all the tissues of the leg had been prevented from more marked wasting. From this case and others like it I have come to the conclusion that we can promote the nutrition of all structures and tissues of a paralysed limb by simple artificial means, the most active of which is undoubtedly the stimulus of heat.

It is thought that electricity is of much value in the treatment of paralysed muscles. I have given it a fair trial in a large number of cases and have formed the opinion that no distinct benefits are obtained by it. When a child is brought for the first time, some months after the paralytic attack, we can use the battery to test the extent of the paralysis, that is to say, we can distinguish the muscles which are affected. It is useful, therefore, as an aid to diagnosis. But it seems to me that if electricity is to be used as a stimulus to nutrition, we must employ it in a different way. We might conceive it possible, that if a gentle current were kept up for several hours a day through a paralysed muscle, the nutrition might be stimulated, much in the same way that muscular tissue can be developed by exercise, but I do not think it reasonable to look for any decided effects from the occasional use of the battery, say once, twice or thrice a week for a few minutes at a time. And these theoretical considerations are certainly confirmed by clinical experience. I have watched carefully the conditions of a paralysed limb, during periods of three months and six months, when the ordinary method of electric treatment has been alternated with no treatment of the kind, and as I have said without obtaining any difference in results. Volckman's opinion of the value of electricity is very dis-

tinctly expressed. "Little," he says, "is to be gained with the much belauded electricity, whether you use the induced or constant current."

I have something yet to say about the use of the battery which has not been considered as carefully as it deserves, and my remarks will apply to some extent to the use of instruments and other mechanical appliances. You will generally find that, for some time after an attack of paralysis a child is liable to disturbances of its nervous system which would lead you to fear some form of convulsive seizure. The symptoms are similar to those which you are told attended the original attack; feverishness, cerebral excitement, startings and cryings, and then some hours of prostration; followed by distinct evidence of a temporary increase in the paralysis. I have in my recollection a case of partial paralysis of the right leg in a child between five and six years of age, where every few weeks there was a disturbance of the kind. Six months after the first attack he had another attack resulting in partial paralysis of the arm and entire paralysis of the leg, and three months later a third attack in which he died. It was a matter of great regret that in consequence of the patient living at some distance from town we were unable to make the necropsy in time to preserve the brain and spinal cord for pathological examination.

This I need hardly say was an uncommon case, but I have so often received accounts from patients of this kind that I think it becomes a matter for serious consideration. It has generally been noticed by the mother, that excitement or fatigue has induced an attack, and particularly the visit to the physician for the electric operation. The fear and pain to which children may be exposed, if we pass powerful currents through the muscles, are very

liable to disturb the nervous system in a serious way, and instead of conferring any benefit by our remedy, we really do more harm than might be conceived possible.

Let me advise you therefore to consider carefully the general condition of young children before any risk is incurred of this kind, and give time for the nervous system to recover itself from the effects of the violent shock it has sustained from the original seizure.

Now with regard to instruments there is need for the same caution in their use.

The novel sensation of wearing a boot or splint is a cause of actual distress to some children, and mothers are naturally much disposed to disregard the complaints of a child when they are under professional orders, strictly to be attended to.

We ought to wait therefore before we advise mechanical treatment, and give similar sensible advice to that of Dr. Rutherford, when he sent young Walter Scott away to Sandy-Knowe. This tendency to nervous excitement in paralysed children should be treated much in the same way as we treat the threatened convulsions of infancy. This I conceive to be the special duty of the physician before the mechanical treatment of deformities is undertaken, the principles of which I have said are so fully considered by Volckman.

There are some further details in the use of heat and friction which we will consider on another occasion, and I shall conclude this lecture with a few very interesting extracts from Walter Scott's personal history.

"When the efforts of regular physicians had been exhausted without the slightest success," . . . . "the advice of my grandfather, Dr. Rutherford, that I should be sent to the country to give the chance of natural exertion,

excited by free air and liberty, was first resorted to.'

"Here at Sandy Knowe, the residence of my paternal grandfather, some one had recommended that so often a a sheep was killed for the use of the family I should b stripped and swathed up in the skin warm as it was flayed from the carcase of the animal. In this Tartar-like habiliment, I well remember lying upon the floor of the little parlour in the farm-house while my grandfather, a venerable old man with white hair, used every excitement to try to make me crawl.

"This must have happened about my third year.

"When the day was fine I was usually carried out and laid down beside the old shepherd among the rocks or crags round which he fed his sheep. The impatience of a child soon inclined me to struggle with my infirmity, and I began by degrees to stand, to walk, and to run." Finally, he says, "my frame gradually became hardened with my constitution, and being both tall and muscular, I was rather disfigured than disabled by my lameness. This personal disadvantage did not prevent me from taking much exercise on horseback, and making long journeys on foot in the course of which I often walked from twenty to thirty miles."

LECTURE VIII.

Diarrhœa, or Intestinal Catarrh.

We will consider the subject of diarrhœa this morning. It is the commonest malady of infancy and childhood; the one that in family practice we are required most frequently to treat. To do this successfully we must have clear ideas upon its pathology, and be guided by judgment and experience in the details of treatment. In the history of most cases you will find as a rule that the illness began in a distinct and rather sudden way. It is true that some weeks or longer may have elapsed since that time, and that you have to deal with a diarrhœa that has become chronic; but this is a condition that has generally succeeded to an acute attack. The cause is usually exposure to cold, and such exposures occur more frequently in hot than in cold weather. Exposure of the feet, legs, and lower parts of the body of an infant is more likely to occur in hot weather, from the fact that these parts are but little covered in the summer time, and are much less protected than the parts above the waist. The sudden attacks to which children seem to be very liable when at the sea-side are due in by far the greater number of instances to cold, induced by wet feet or paddling in the sea. These attacks are serious. The inflammation and diarrhœa are active, the pain is often great, there is much straining and spasmodic contraction of the bowels;

there may be discharges of blood with the mucus, and there is often prolapsus of the bowel. The prostration caused in a few hours may be very marked, and all the conditions which you are called upon rather suddenly to deal with may present the most serious aspect. For these reasons it is very important, as I have said, to have clear ideas upon the nature and proper treatment of such sudden attacks. When the case has changed its character, and the symptoms after some abatement have assumed a chronic form, it is still important to know how to treat them.

The disease may be regarded as an acute catarrh of the intestine. The contents of the bowel are first discharged, then there is an abundant escape of watery, bilious fluid, which probably flows from the great and small glands which excrete into the bowel; then the mucous membrane suffers, and while the quantity of the discharge is diminished, its character changes to a thick glairy mucus, often tinged with blood. At this stage the pain from spasm and straining is most severe. These stages may succeed one another rapidly, that is in twenty-four hours or less. Each time that milk or other food is given, in a few minutes there is spasm, and in common language, "everything runs through the child." Although it takes fluid eagerly, the stomach generally refuses to retain it, and if some passes into the bowel, much is rejected by vomiting. Such an attack as I have described is a severe one, and more rare than less acute attacks, but in each the conditions and symptoms are similar, and only differ in degree. Improper food, acid milk, or if an infant is being suckled, some derangement of the mother s health, may cause intestinal catarrh.

Under these circumstances the attack is generally less acute than when cold has caused it.

You may form some idea of the condition of the bowel from the appearance of the prolapsed rectum, two or three inches of which are often everted, and are seen to be red, congested, and covered with glairy mucus.

If you leave a child in this state alone, without treatment or food, the acute inflammation may subside in the course of a few days, but the catarrh generally continues for some time, varying according to food and other circumstances. But the question we have to decide is what is the best treatment. If you follow a certain routine practice, you will order some carminative draught, of no very active property, with perhaps a gentle opiate. Such treatment will not do any harm. At the same time it won't do much good. Opiates will not stop the diarrhœa or spasm. Half measures are of no use in these severe cases. The most important agent for the relief of the symptoms is heat. The child should be placed in a bath of temperature 100 deg. or higher, and kept in the bath for half an hour or longer. On taking it out a large linseed poultice should be applied to the abdomen, warm bottles placed in the cot, and the child left thus for two hours or so, when the poultice should be renewed. A powder composed of two grains of calomel and one of Dover's powder should be mixed, and if the child is under twelve months old one-third should be given every four hours. If the age is above twelve months, one-half the powder should be given, and repeated in six hours.

In the former case two powders may be sufficient. The administration of the third powder will depend upon circumstances to be judged of by the medical adviser.

Before giving the second powder the child should be

again put in a hot bath, and the poulticing repeated as before. Nothing more to any purpose can be done during the second twelve hours. At the end of twenty-four hours a small dose of castor oil with a few drops of compound tincture of camphor should be administered, and the poultices renewed every four hours or so.

With regard to food, it is better to give little, if any. Some well-boiled arrowroot and milk, thinly mixed, may be tried, but if the stomach rejects it there is no use in pressing it. It is very usual to order brandy and milk; but there can be no question, judging by experience, that brandy is harmful, and apparently irritating to the mucous membrane. I have seen such opposite kinds of treatment adopted in cases of acute intestinal catarrh, that from the ill success of others I have formed the very decided opinions I entertain, as much as from the success of the plan I am advocating. It is the old-fashioned plan of treatment, and it seems to be one quite consistent with the pathology of the disease.

I have heard of ice being applied to the abdomen, and cold compresses, with results by no means satisfactory.

During the week following the attack we have been considering great attention must be paid to diet. Arrowroot and milk and water, or some such farinaceous food, is preferable to beef tea or other animal fluids, however much disposed we may feel to try to restore the child's strength by the latter means. We must wait till the inflammation of the intestinal mucous membrane has subsided before animal fluids can be borne. During this week it is proper to administer every night a powder composed of a grain or a grain and a-half of hyd. c. creta with a third or half a grain of pulv. Doveri, according as the child is below or above twelve months old.

This plan of treatment may seem rather active, but it has the advantage of restoring the bowel quickly to its healthy condition, and of preventing the chronic diarrhœa which so commonly succeeds the attack.

If several weeks have elapsed before the child comes under your care, and its usual kinds of food have been tried without success, you will find that the best plan of treatment is to deal with the case very much as though you were treating the acute symptoms, but instead of calomel, let grey powder be given in two-grain doses for two or three successive nights, and then follow the plan recommended during the week succeeding an acute attack, not forgetting the occasional hot bath and the poultices to the abdomen.

When the mucous membrane has suffered for some time it is highly probable that the mesenteric glands will be secondarily affected, and the nutrition of a child is thus seriously impaired. Flatulent distension of the bowel prevents us from detecting any enlargement of the mesenteric glands; nor, indeed, is the glandular enlargement as seen in post-mortem examinations so decided as to allow itself to be diagnosed during life. The glandular inflammation passes through the ordinary stages of hyperæmia, as seen in typhoid fever, then of diminution of redness with change of colour to a yellow tinge, due to fatty infiltration, and this state may continue for many weeks, until the gland ducts are again free. In scrofulous children the glandular inflammation extends to the stroma of the glands, and the more or less ordinary forms of tabes mesenterica are developed. It is very generally imagined that the condition of chronic catarrh is to be relieved by change of diet, and thus we find parents, particularly in the better classes of society

expending much trouble to little or no purpose in trials of the various infant foods of popular reputation, or, if the child be very young, in hoping for some advantage from a wet nurse. Whatever may be the diet, the process of digestion must be imperfect while the morbid condition of the intestinal canal exists, and this condition requires to be treated by appropriate remedies. We may be sure that if some such simple system of feeding as, for example, that recommended in the Rules* given to patients at this hospital, be not satisfactory, no kind of food will succeed better; at least, such is the result of my own observation. When the mucous membrane has recovered itself, when the diarrhœa and spasm have ceased, and simple food is being fairly well digested, we may begin to administer some stimulating tonics, such as the dilute mineral acids with iron and quinine, or with small doses of some vegetable aperient, such as rhubarb or jalap. As a rule the acids are more suitable than the alkalis, although the flatulence and acid fermentation which is the apparent cause of the flatulence would theoretically suggest the administration of alkalies and carminatives.

It is well to give special directions that the abdomen should be covered warmly with wool or flannel, and that the legs and feet should be carefully protected from cold.

I have only attempted in these remarks to give a general view of the causes, pathology, and treatment of intestinal catarrh, and beg you to consider it as merely a preface to further details which clinical examples from among the patients here will afford the means of illustrating.

* See Appendix.

LECTURE IX.

Ringworm.

A large number of cases of ringworm pass under our observation and treatment every year, and we are compelled to give some attention to the subject. This morning you have seen five cases, two in one family, two in another, and the fifth where the fungus is of very recent growth, only one spot on the right cheek having appeared.

Of late years ringworm has increased immensely among the children of the working classes, and has also been a source of trouble in many of the higher class schools, both public and private. As you will probably be required to advise some day upon the best method of its treatment, as well as upon the prevention of its extensions, I propose to give you as briefly as possible the results of my own observation and experience. Two of the children we have just seen, we were told, had already been for several weeks under medical treatment. Strong acetic acid had been used, and upon the heads of the children there were large areas almost denuded of hair, and in a state of inflammation. The ringworm was not cured, for in the centre of one of these areas, less inflamed than the others, we found abundant spores; that is to say, when we pulled out some of the young hairs and examined them with the microscope, we had no doubt of the presence of

spores. Now the questions which lies at the root of the matter of the treatment of ringworm are clearly these. What is the nature of the fungus? What are the laws of its development, and under what circumstances is its growth favoured or prevented? We must try to answer these questions before we can hope for much success in treatment, or be able to reconcile the various and rather conflicting reports of the value of different remedies.

The growth of the spores of the trichophyton is rapid. A single spore has been seen to pass through the stages of protrusion, elongation, division, and final separation into independent spores, in the course of less than forty-eight hours. This has been observed in artificial cultivation of the spores in vitreous humour by Dr. George Thin, whose interesting and valuable results were published in the Proceedings of the Royal Society in 1881. It is probable that the stages succeed one another more rapidly in the human skin, if we may judge by the way in which a spot of ringworm extends from day to day, as for example in a case like that of the child who has one spot on her cheek.

There is no difficulty, on this account, in destroying the fungus, when we find it on the skin, by the application of any of the common sporicides. It is another matter, however, when the spores have made their way from the surface to the hair bulbs. They are then beyond the reach of destructive agents, and may resist treatment with great obstinancy.

It would appear from Dr. Thin's experiments that the spores of the trichophyton are influenced in their growth very easily indeed, and that they are most delicate and sensative organisms, requiring special conditions for development.

You can understand why in hospital practice, poor success attends the common method of treatment, for if an interval of a week is allowed to pass between each application of the sporicide, the fungus has clearly time to grow far more quickly than it is destroyed; and so we may continue for weeks or rather months, if the patient is not tired of coming, while we try one remedy after the other, perhaps with variable, though generally similar, results.

You must leave the treatment of ringworm to the mother or the nurse, who can follow directions day-by-day, and apply the sporicide, at least, twice in the twenty-four hours. It is best, both in hospital and private practice, to reserve to yourself only the right of deciding when the cure is complete, and the child is no longer a source of danger to others.

The treatment can be carried out perfectly well by a person of the commonest intelligence, if the directions given by the medical adviser are carefully and regularly attended to.

You have seen, from the two cases before us, what objection may be made to the use of such agents as acetic acid. I have not seen any advantage obtained from the use of sporicides actively irritant of the cutaneous tissue, and producing such results from inflammation as we have seen in these two children. On the head of the younger of them, an infant under two years of age, there are several inflamed areas, discharging serum and pus, and for the present nothing active can be done until the inflammation subsides. And so with many other agents, notably croton oil and chrysophanic acid to which the same objections must be made.

The theory on which they are used is simply this. See-

ing that the fungus does not grow when entirely immersed in a fluid, as was proved by the experiments of Dr. Thin, it might seem probable that by exciting inflammation and the exudation of serum around the hair bulbs, the same effect would be produced as by immersion; that is to say the fungus would be killed by excess of fluid. However reasonable this theory may be, we must check its application by clinical results, and as far as experience goes I am bound to say that results are not very favourable to the theory.

Happily there are several sporicides quite sufficiently certain for all practical purposes which do not occasion active inflammation; and the question we have to consider is, not so much the special activity of any agent, as the special way in which it should be used.

Applications of the agent must be frequent in order to prevent the disease from extending, and we must try further to reach the hair bulbs by gentle and continuous friction. We also have to consider the circumstances of the family, and not inflict needless discomfort by using some malodorous combination which may make the suffering child a nuisance to every one it comes near. If a child is properly managed there is no great danger of contagion; and the treatment can be carried on with but little trouble or annoyance.

We must impress upon the parent, that if the child has long suffered from the ringworm, its cure will be a matter of time and trouble. And we must try and make the principles of our treatment understood. "What though more slow attained, with lesser risk and surer of its end." We must choose then a sporicide which can be applied frequently and continuously for several weeks without causing pain or exciting much inflammation. It seems to me

better to avoid the use of the mercurial salts as constitutional effects may possibly be produced, and preference is decidedly to be given to some one of the innocent substances belonging to the hydrocarbon group and obtained by distillation of wood or coal. Without comparing their relative value I think that we cannot do better than use the best known of this class, and after extensive experience and most satisfactory results, I can recommend to you the following preparation as likely to be successful, even in the most obstinate cases of ringworm. Let precipitated sulphur be mixed in a mortar with sweet oil, in the proportion of about half an ounce of the former to an ounce of the latter, so that a thick cream is obtained. Then add to this, mixing thoroughly, three drachms of Calvert's carbolic acid, No. 2 solution. This mixture contains the acid in about the proportion of 20 per cent. It must be applied twice a day, night and morning, to the affected parts, and should be rubbed gently in with the finger or a piece of soft leather.

If the child is brought to you to be examined once or twice a month you will be able to report progress and decide when the treatment can be discontinued. The child's head should be well washed and brushed with soap and hot water two or three times a week, and if the disease has been of long duration it is well to begin by ordering the whole head to be shaved. It is also necessary to caution the patient against the use of the hat or bonnet that was worn before the treatment was begun. It sometimes happens that the question of the origin of the disease is difficult to discover, and there are two sources which might possibly be overlooked. When a nurse has been in a family where the children have suf-

fered from ringworm she may change her place and introduce it unknowingly into another family. The other source is more common than is generally supposed and that is domestic animals; a strange cat or kitten may find its way into a house and carry the spores.

As we frequently observe that in the same family delicate children are more liable to contract ringworm than those that are strong and healthy, constitutional treatment should not be neglected. Your own observation and common sense will suggest all that is necessary and proper in this respect.

LECTURE X.

Convulsions.

Some months ago I was asked to see a boy, æt. 2, who had an attack of convulsions early in the morning. The medical adviser of the family saw him very soon after the fit, and after staying in the house for two hours, left with the assurance that there was no reason for anxiety. Half an hour after he had left the child had another attack, and as the immediate attendance of the first practitioner could not be obtained, another was called in. I saw the child in the afternoon, between seven and eight hours after the first fit.

This was the first time such an attack had happened, and there was no cause except probably that the boy had eaten too largely of uncooked French plums.

We ordered a full dose of calomel, to be followed by castor oil, and then later some bromide of potassium and belladonna. The parents were told that it was more than probable that the fits might return during the next few days, but that as they were not due to any injury to the brain such as a fall or blow, when the digestive organs were relieved the nervous excitement would probably subside.

A few days later I was summoned again, and learnt that the fits had returned, and that a physician of reputation for his knowledge of nervous diseases had seen the

child and had said that he thought it would probably grow up an epileptic.

I was told that the undigested fruit, which was the probable cause of the attack, did not pass from the bowel for three days, although the calomel and castor oil first ordered acted well during the night after it was given. I distinctly repeated the opinion expressed at first, that the fits might recur, but that they would be less frequent and less violent, and would subside soon. This happened during the next fortnight, and when the child had been quite free for three weeks it went out for a walk. The excitement was followed by a fit, but that was the last, and there has been no attack since.

This case illustrates the difficulty which even the most experienced of us are sensible of, namely, that of being able to predict the final issue of a convulsive attack.

The opinion that this child would not have a second attack was more likely by far to have proved correct than the other opinion that he would grow up a confirmed epileptic; and still greater probability was given to the former by the fact that an elder boy had suffered in exactly the same way, at the same age, from one attack only.

When a very young infant has convulsions, that is to say, when it is only a few days or a few weeks old, we ought to take a serious view of the case. The fits usually recur, and the result is often fatal; or if a child of five or six years of age or more has a convulsion there is then more probability of its recurrence and of the case becoming distinctly one of epilepsy. But speaking from personal experience, I should say that confirmed epilepsy is not a result of infantile convulsions; while convulsive attacks about the time of dentition, that is, between the

ages of seven or eight months up to two and a-half or three years, are generally the least serious in their character.

The reason why convulsions in very young infants are so serious is that there is probably some cause for them of a more grave nature than the temporary disturbances of digestion or dentition to which fits are usually due at a later period; some congenital defect, some subtle maternal influence which has probably been at work previous to the birth of the child, or what is apparently the same thing, has been transmitted soon after birth from the mother to the infant. Many instances of this kind have come under my notice, but one in particular I shall mention, for it illustrates in a striking manner the subtle influence of the mother on the infant. If I may use a parody, there is something more between mother and child than is dreamt of in our pathology.

Three days before the birth of her sixth child, a lady was obliged to send home a little girl, a foster-child who lived with her own children, and to whom she was much attached. She was delivered well and safely, and was suckling the infant, when five days after confinement intelligence was brought her that her foster-child had been accidentally burnt to death. She continued to suckle, but twelve hours after she heard the news her infant had a severe attack of convulsions. The fits recurred daily for a period of about three months, when the child died. When an infant has gone on well as a suckling for some days or weeks and then has convulsions, there is the greatest probability that the cause of fits is some maternal trouble, and it is best to order the infant at once to be weaned.

To-day you have seen a case of this kind. The infant

is between three and four months old, is well nourished, and was imagined by the mother to be teething. There was not the least sign of this, and without further inquiry I asked, as you will remember, what trouble she had had at home. She seemed a little surprised at the question, and simply answered that she had had some serious trouble, and had been much put out, but would not say what it was. I advised her to wean the infant. We shall see how matters go on, but the probability is that the fits will continue for some days or perhaps weeks, and that under the influence of bromide of potassium and belladonna they will subside in time.

I have been disposed to think that cardiac defects are more often the cause of early convulsions than is supposed—I mean congenital defects, or what is nearly the same thing, some defect in those very important and extraordinary changes which occur during the first few days after birth in the organs of circulation. It is true that we may not be able to diagnose these peculiarities, because they are not sufficiently decided to cause those signs or symptoms by which congenital heart disease is recognised; but we so often find the action of the heart irregular and hurried, and the cardiac pulsations greatly increased in cases of recurrent fits in infancy, that now I always examine the heart when such symptoms are present. The question which we are anxious to decide in most cases is what is the special cause of an attack. Admitting that fits are due to many causes, we naturally try to satisfy ourselves on this point before treating a case.

The history may help us, but it may, and often does, not do so. We may even be misled by the statements and opinions of the parent or nurse. It is better to try to diagnose the cause by clinical examination, and the chief

point which I think is of most importance to notice is the evidence of cerebral or nervous disturbance succeeding the fits, or intervening between them. Supposing an infant recovers from the fit, and with the exception of looking rather pallid and exhausted, is in all other respects apparently as well as before, we may conclude that there is no distinct morbid process in active operation in the brain or spinal cord, and that the cause of the attack is in some other organ. When, on the contrary, that most delicate indication of cerebral disturbance is present, the vibration of the eyes known as nystagmus, or some similar affection of the muscles of one or both eyes, we may conclude that the brain is suffering, either primarily as in cases of instrumental delivery or obscure maternal influence, or that the convulsive attack has produced a more or less permanent injury to the brain.

For these reasons, then, we judge of the probability of a recurrence of the fits by the condition in which we see the child in the intervals between them. There does not seem to be any other guide to prognosis.

What, then, is the general principle on which we are to treat the eclampsia infantum. If the fits are due primarily to brain trouble, that is to say to some pressure or injury, causing hæmorrhage or inflammation, we have only to treat the nervous systems very much as we should treat them in adults; but in a case like that of the boy who had eaten the plums, it is clear that the first object in view is the removal of the cause by purgatives. For this reason the old-fashioned treatment with calomel was not as a rule unwise. There is no doubt but that bromide of potassium and belladonna are powerful agents in quieting nervous excitement, and by the judicious use of these sedatives after active purgative treatment when

necessary, and in most cases it is necessary, we may do all that medicine is able to do in controlling the convulsions.

To a child of one year old you may give from three to five grains of bromide of potassium, with three to five minims of the tincture of belladonna, and repeat the dose every three or four hours for a day or so, and then give only one dose at bed-time for three or four days following, or as long as symptoms require.

LECTURE XI.

Syphilis in the Infant.

I explained the reasons for, and illustrated the proper method of studying infantile syphilis to some extent, and pretty fully in two lectures, published in the *Lancet* (June 21, 28, October 18, 1884), and I propose to-day to consider the subject in a very simple and practical way, excluding historical allusions or criticisms on the errors of past times, and assuming the accuracy of the views stated in the lectures referred to.

We have had five cases of infantile syphilis under observation this morning; some have been under treatment for two or three weeks, and some came for the first time to-day. You may have noticed that in taking notes of these cases a definite plan was followed which enables us to arrange the details in a simple tabular form.

First, I noted the age of the infant; the nature of the symptoms shown by the morbid conditions of the skin, the mucous membrane, the bones, and other parts; the date of the first appearance of symptoms, that is, how soon after birth; the nature of nourishment, that is, whether by the breast or by hand food; whether any treatment had already been adopted, and of what kind; and lastly, if there were any other facts directly bearing upon the condition of the infant, they were added.

The next facts noted related to the mother—her age; how long she had been married; if any, how many children she had had, or rather the number of pregnancies, and what was the result of each in order of time; then the state of her health previous and subsequent to marriage and at the present time; and of course a special note if she had been married more than once, with details of that part of her life.

The next step we took was to request her to tell her husband that we should like to see him some day soon, and after making a convenient arrangement for his doing so, or obtaining the name and address of the practitioner who generally attended the family, we dismissed the mother and child, giving proper directions for treatment. A week generally intervenes between one visit and the next, and in the interval we do our best to ascertain a third group of facts relating to the history of the father of the family.

I am anxious that you should understand clearly the object of all this trouble, because I have found that when I have written to practitioners in order to obtain the history of the family from them, that is more particularly the history of the father, I have seldom succeeded in gaining the information I sought. Not seeing the reasons for this inquiry, or sometimes, though not often, because a spirit of indolence and indifference is generated by ignorance, those to whom I wrote failed to assist. It was far more easy for them in their relations to the family to do what was difficult for us at a special hospital like this.

The history of the father was taken like that of the mother: his age; how long married; when he was infected, and under whose treatment at the time; what

symptoms followed infection, and the present state of health; the exact time which intervened between infection and marriage; and any facts relating to his habits, hereditary tendencies to disease, if any existed, or any other facts which suggested themselves as important. As in the case of the mother, if he had been twice married the history of this part of his life was noted.

Now I have one observation to make which deserves your attention. It might be imagined that the details above enumerated could not be obtained without grave difficulties, or at least without risk of causing family troubles. This has never been the case in a single instance which has come within my own experience. Truly, trouble might have been caused if I had not used some tact and good feeling; but if any one of you at any future time excuses himself on these grounds from studying every case that comes before him in the way I have indicated, if only for the sake of improving his probably very limited knowledge of this very obscure subject, infantile syphilis, I hope that his conscience will reprove him for neglect of opportunity, if not for indolence and want of interest in the improvement of our science. I am not speaking as seriously as I feel on this matter, and if I had not promised to make no criticisms on the errors of the past you would see what good reasons we have for trying our best to repair them by every effort we can make.

Now in one respect, and that a very important one, I am obliged to admit that a knowledge of the whole history of a case of infantile syphilis is usually of very little value, and that is in the matter of treatment.

If the symptoms are quite clear, and they generally are

so, your treatment is a matter of simple routine. Instead, therefore, of reserving remarks on treatment till the end of this lecture, I will tell you briefly what that routine practice is.

One grain of grey powder once in the twenty-four hours is the first item prescribed, and this quantity is as proper for an infant of only a few days old as for one of twelve months. For about a fortnight it may be continued, and then, if the symptoms have clearly begun to improve, as is generally the case, the quantity may be reduced or the powder given every other night.

The next item is some preparation of mercury for local use—that is, for the treatment of cutaneous troubles, such as the ulcers so common on the nates, or the fissures round the nose and mouth. Grey powder mixed with sweet oil to consistence of thick cream is ordered to be applied with a soft brush night and morning, after bathing with warm water; or a mixture of calomel and oxide of zinc in equal parts, similarly combined with sweet oil, or dusted on dry; or if there be much erythema and irritation of the skin, as well as ulceration, a mixture of calomel and starch should be used in the proportion of one to two. The chief point to attend to—and these details make a great difference in results—is the avoidance of thick ointments or preparations which have to be spread on linen or applied directly with the fingers. The infant is irritated and pained by this plan of dressing the sore parts, as well as by the rough washing which is used to clean away the ointment. It is a rule in the treatment of all cutaneous diseases in children to forbid the mother or nurse to touch the skin with her fingers.

The two chief points—the constitutional and local treatment—being thus provided for, only one remains—

namely, the treatment of the cachexia, by proper food and the administration of some of the preparations of iron. The most nourishing food should be ordered, and small doses of the syrup of the iodide of iron, combined with half-grain or grain doses of the iodide of potassium may be given two or three times daily.

If I refrain from attending to any other plans of treatment than that I have now given you, it is because I have satisfied myself that they do not yield equally satisfactory results.

If you find that at the end of a fortnight the child shows no signs of improvement, the prognosis is generally unfavourable. A certain number of cases do not improve whatever the treatment, and it is well to give a cautious prognosis until the time I have mentioned has elapsed. Considering how frequently infants are born dead, either prematurely or at term, we need not be surprised that a certain number do not long survive their birth.

It may occur to you to advise that the child should be suckled, so that by treating the mother actively with appropriate remedies, and particularly with iodide of potassium, the child might gain, not simply by the fact of its being suckled, but by the transmitted effects of the remedies administered to the mother. On this point I have made careful observations, which prove that such a hope is delusive, and that it is better to order the child to be weaned and to treat it directly in the way I have indicated.

Let us now return to the clinical phenomena of infantile syphilis. You have seen some this morning. In one case the symptoms were of the commonest character—cachectic pallor, cracks round the nose and mouth, nasal catarrh and obstruction, and ulcers on the nates. In

another case the skin was erythematous, with slight coppery tinge over the legs and thighs, and the feet were scaling. The snuffling and cachexia were well marked.

In a third case there was only one well-marked sign of infection, a condyloma of considerable size close to the anal orifice.

In the fourth case there were all the symptoms which were present in the first case, but there was a peculiar condition of the skin to which I drew your attention particularly, because it is by no means one that we meet with often. There were numerous subcutaneous globular swellings, of the size of a pea, some larger, some smaller, to which the term gummata might perhaps be given. Those which were large raised the skin above them so as to cause it to appear as if a small boil were forming, but instead of being red and inflamed the skin had a dark blueish tinge. In some respects they resemble boils, for they soften and sometimes break and discharge thick yellow matter. But they are not painful, and can be touched or pressed without apparently distressing the child. I generally use the term "specific furuncle" to designate this form of cutaneous disease when taking notes of a case in which it is present. The treatment prescribed in these four cases was the same.

The fifth case will occupy us during the rest of this lecture. We will study the four cases on another occasion. Now this fifth case was a doubtful one. For this very fact, it was to me the most interesting of the five cases, because when we saw it for the first time last week some of you felt almost, if not quite, certain that it was a case of infantile syphilis. You formed your opinion from the condition of the child. There was wasting, cachexia, snuffling, and erythema, with ulceration of the

nates. If you remember, I admitted that you had good reasons for your opinion; at the same time I differed to the extent that I expressed the belief that this would turn out not to be a case of syphilis. The mother was the wife of a coachman; she gave no history of specific infection. She had six children alive and well, had lost one from whooping-cough, and with the exception of having suffered a good deal of anxiety and privation during the last pregnancy, owing to her husband having been out of work, there was nothing very noteworthy in her history. She certainly had a prolonged labour with this child, and recovered more slowly than on former similar occasions. The case illustrated the difficulty, I would say rather the impossibility, sometimes, of deciding from symptoms alone whether the case is one of specific nature or not. Since last week I have seen the father, and have been satisfied that the cause of the child's condition was entirely explicable by the low state of bodily and mental health in which the mother was previous to and at the time of her confinement. The importance of care in diagnosis is clearly seen in such a case as this, for if we had prescribed the ordinary mercurial treatment for this child the result would have been most unsatisfactory.

But I will give you another example of a somewhat curious instance of doubtful diagnosis, which came under my notice a few weeks ago.

I was asked to see an infant, æt. one month, under the following circumstances:—The parents had been married seven years. During the first year of their married life a child was born prematurely at the seventh month, which lived only a few hours. The mother recovered slowly, and had suffered from uterine congestion, more or less, since. The next pregnancy was the last, during which

she was in better health than usual, and she was confined of the child I was to see without difficulty or mishap. A few days, however, before this she had some obscure febrile attack, and a few days after confinement she had an eruption of spots of ecthyma, painful and irritable, on various parts of the body, but chiefly on the legs, which were still inflamed and ulcerated. She had the idea that she had inhaled sewer-gas while out walking a few days before she was confined, but nothing definite could be made of the nature of this illness. The child weighed $8\frac{1}{2}$ lbs. at birth, and was apparently perfectly healthy, but a few days after it had difficulty in swallowing food, some obstruction in the nose, and an eruption on the arms and legs of general erythematous character. The skin of the nates soon became red and ulcerated. When I saw the child it weighed exactly the same as at birth. The legs and feet were erythematous, and the skin on the dorsal surface of the feet was peeling off. The hands and arms had been in the same state, but had recovered. The nates were red and ulcerated, almost as exactly in the fourth case above mentioned. The difficulty of deglutition was very great, and respiration was impossible when the bottle was used for feeding. The mother lost her milk, or rather she had none, and the infant was fed with a spoon. If more than a few drops were poured into the mouth, the infant was seized with spasm of the pharynx, and the food was returned through the nostrils. The medical adviser of the family had expressed a distinct opinion that the case was one of infantile syphilis. This was agreed in by another practitioner, and the child was taken for a consultation at the request of the father to one of high authority in such matters.

Now another element of doubt was introduced into

this case by the following circumstance. The monthly nurse who attended the mother came straight from nursing an infant which was the subject of extensive dermatitis of the common form, and this case had been under my care some weeks previously. The question was submitted to me before I saw the mother and infant to whom this nurse had last come, whether she could possibly have brought any kind of infection, and thus produced the symptoms from which they were suffering. I inquired of the father whether his wife had been informed of the opinion expressed by their medical adviser, and agreed in by the consultant, that this case was syphilitic. He said that his wife did know it, and was strongly disposed to believe it. He himself not admitting the charge involved in this opinion, still believed that the medical view must be correct, and that the nurse was the cause of the trouble.

When I saw the child and examined the condition of the throat, I found that the soft palate, the uvula, and pharynx were extensively inflamed and swollen. The surface was of dark-red colour, but there was no ulceration. The difficulty of swallowing was easily understood, and seemed to be the chief cause of the wasted condition of the infant. I questioned the father closely as to the possibility of his having been infected with syphilis at any time previous or subsequent to his marriage. It was not because he distinctly denied such possibility that I formed the opinion that the case was not one of syphilitic infection. It was because I recognised in it one of those rare instances of conditions simulating in many respects a certain form of infantile syphilis. He naturally inquired at once, How, then, do you explain the symptoms?

I informed him that cases of similar nature had passed under my notice where similar difficulties of diagnosis had arisen, and where it was impossible, without a knowledge of the condition of the mother about the time of her confinement, to account for the symptoms. In his own instance, this part of the case had not been laid before the consultant to whom the infant was taken, and the mother was not seen by him. The child had, when I saw it, been treated actively with mercury without improvement. The quantity of food it took in the twenty-four hours amounted to two teaspoonfuls of condensed milk mixed with sixteen times the quantity of water. How much of this it swallowed it was impossible to say, but judging from what I saw when the food was given, and that more than half returned through the nostrils, I came to the conclusion that the infant had lived upon less than a teaspoonful of condensed milk in the twenty-four hours, which would, of course, account for the wasting.

The symptoms in this child I attributed to the infection of the mother by some septic agent, or by some other cause of constitutional derangement, which had produced the acute ecthyma from which she was suffering. The case was obscure, it is true, but there was no justification for the decided opinion expressed that the symptoms were due to syphilis, and for thus producing a serious disturbance in the relations of the husband and wife to one another.

I have given you the details of this case in order to impress upon you the importance of studying the subject of infantile syphilis in the way I have indicated, and although I stated that for purposes of treatment, where the diagnosis is certain, the history of a case may not be

essential, yet no one is justified in an over-confident opinion where there is the least doubt without a thorough investigation into all the details which may assist—some in a remarkable way—in clearing up the difficulties presented in this class of cases.

I have already drawn your attention to the fact that the health of the infant is singularly influenced by the condition of the mother at the time of its birth; and that no tissues of the infant exhibit morbid conditions more strikingly, or are more frequently affected than those of the skin, when the mother's health has been disturbed by causes similar to those mentioned in the two last cases we have been considering.

LECTURE XII.

Urinary Troubles.—Concluding Remarks.

Among the many nervous derangements common in infancy and childhood, and the pathology of which is still very obscure, you must have observed that incontinence of urine is a frequent one. To-day I propose to make some general remarks on this subject, and upon one or two others which have been suggested by the cases we have seen this morning. I have been anxious in this short course of lectures to direct you how to observe and study disease, as experience has taught me this should and can be done by making Nature our chief teacher, and by personal observation learning from Nature more than books can teach. When a child is brought to you suffering from incontinence of urine, inquire at once whether it is only at night and during sleep that the trouble occurs, or if the child be uncomfortable all day from want of power to control the flow of urine. Since Trousseau's lecture on this subject was published the plan of treatment he advised has been very general. The use of belladonna at first in small doses ($\frac{1}{4}$-grain extract), then increased gradually till as much as two grains of the extract are administered daily, has certainly been justified by clinical results. But if you refer to that lecture, and it is one so instructive and suggestive that it is well deserving of perusal you will

find that Trousseau distinguished between cases of nocturnal incontinence and the less common cases of want of control during the day, that is, when the child is awake. In sleep, and especially heavy sleep, we can easily conceive it possible for the bladder to relieve itself without waking the child. But when a child is much in the condition of an old man with paralysis of the bladder it must clearly occur to the mind to question whether the term incontinence of urine can fairly be applied to the two cases; or at least whether the causes must not differ, and, consequently, the mode of treatment in these two forms of incontinence. When you have to deal with nocturnal incontinence you may confidently expect good results from the use of belladonna. When it is the other form, speaking from a large experience, I should advise you to be less hopeful. Indeed, in some cases of this kind, belladonna often fails to be of any value. Trousseau suggests a reason for this, arguing that in nocturnal incontinence there is unnatural irritability of the bladder, but sufficient tonicity of the sphincters to oppose it, except in sleep, when the sphincters relax and the urine escapes. In those cases, however, where the incontinence persists during the day as well as the night, he assumed a partial paralysis of the sphincters, and this condition he treated with strychnine. You have seen a case this morning of the latter kind in a boy five years old, and you observed that he had already been circumcised as an infant. I have seen many cases like this, and have been led to doubt whether the operation of circumcision is of any value as a cure for incontinence. We have, therefore, to consider carefully in every case the conditions of the bladder and of the sphincters respectively; and as they are often both deranged more

or less we must adapt our treatment accordingly. So far as we can see at present, this is the general principle on which this class of cases is to be treated.

Trousseau tried the effect of pressing the prostate in certain cases, but his experience was insufficient to give any satisfactory result. I have tried in a few cases the injection of a weak solution of nitric acid into the urethra to produce irritation and increased sensitiveness with occasionally good result. In some cases it has been very successful, in others not at all so.

It is important to regulate the digestive organs in all cases of incontinence, for we frequently find that the subjects of it are troubled with ascarides, or some intestinal irritation. At the same time the urinary secretions are often unhealthy, and the irritable condition of the bladder is thus increased. It is important to combine therefore with the special use of belladonnna proper attention to this point in the treatment. Further, we know with what hereditary tendencies to neurotic derangements incontinence is associated, and that it is common in choreic children. The improvement of the general health by tonics will therefore suggest itself to you as a necessary part of the treatment. These remarks have been illustrated by the three cases we have seen this morning. In one, a girl of six years of age, there were distinct symptoms of chorea, an anæmic, ill-nourished, nervous child; suffering also from ecthyma, a symptom of low constitutional health. The second case, also a girl, resembled the last very closely, though she showed no signs of chorea. She was also suffering from ecthyma, and her mother mentioned particularly the fact that the urine she passed had a strongly disagreeable odour.

The third case was that of the boy, which I have already

remarked on, and which will prove the most obstinate, for the reason that the incontinence persists during the day, and is not limited in its occurrence to the hours of sleep. Associated with this particular kind of neurosis is another not uncommon one, the night terrors of children, and somnambulism, which should be treated by the same constitutional remedies, and by doses of bromide of potassium and belladonna. I need hardly say that careful, moral treatment must be insisted upon, and that no encouragement whatever should be given to the forms of correction which thoughtless parents inflict on these feeble children.

I have only one remark more to make in respect to these nervous maladies, namely, that they diminish with age, and the symptoms usually disappear before or about the time of puberty.

There was one case to which I directed your attention on account of its peculiarity. It was the infant with an unusual conformation of the head. Your opinion will be asked some day upon a case of this kind, for the condition is so striking that it cannot but be noticed by and cause anxiety to the mother.

The infant was nine months old, fairly well-nourished, and seemingly cheerful and free from pain.

Its forehead was unusually large, and the occipital part of the cranium unusually small. The measurement of the former, from just above the auditory meatus, was ten inches, of the latter, from the same points, seven and a-quarter inches. The whole circumference of the head was nearly eighteen inches, that is, an average size. The only symptom which we noticed as peculiar was left lateral nystagmus. I think that I have more than once asked you to observe that a common form of nystagmus is a

lateral movement of the eyes in one direction slow and regular, succeeded by a quick return of the eyeballs by a succession of two or three jerks to the axis of direct vision. The first movement in this infant was from right to left. The association of this symptom with unilateral central derangement, usually ventricular effusion, is more than probable, as I shall on some future occasion give you evidence of.

The commonest form of cranial malformation is unilateral flatness, extending over one side of the skull, with corresponding prominence of the opposite side.

We also meet with cases of flatness of both sides of the cranium, as though the head had been pressed by boards, as is practised by certain half-civilised tribes.

The length of the head is, of course, greatly increased in these cases. The singular point to be noticed in regard to this peculiarity, as well as in all forms of cranial deformity, is that frequently very little, if any, serious trouble arises from it, provided that the capacity of the skull is not much affected, and the cranial cavity not diminished, so as to arrest the development of the brain. In some future lecture I propose to collect notes of cases of this kind for your consideration. The common cause of the deformity is some maternal disturbance during pregnancy, the cause so frequently assigned for other kinds of deformity; but sometimes it is clearly due to the use of the forceps, and sometimes to unusual pressure of the head during labour.

In looking back over the different subjects which we have considered and studied together, I am sensible of the fact that we have treated them in a very broad and general manner. Details have been sacrificed to the object of determining general principles, and we have been

more concerned with the outlines of the features presented by large groups of cases rather than with the finer shades which make the picture complete. I have left you to fill in these purposed deficiencies from your own observation, as time and experience will doubtless afford you opportunities of doing.

In the out-patient practice of such a hospital as this, it is true we have a rich field for observation. At the same time there is a vast amount of perfectly useless material, or rather I should say material worse than useless, as it has to be separated and put aside. This involves great waste of time and energy, and impedes those who are seriously inclined to the study of true disease. I should not like to say how many of the cases that have passed under our notice have been not cases of disease in a true sense, but simply the results of mal-nutrition, and the ill surroundings of the offspring of the poor of a great city. Let me impress upon you the fact that in private practice you have the best opportunities of studying the diseases of infancy and childhood, and be assured that you will learn more by your own independent observation and reflection than by any amount of reading. There are many diseases which spring from causes beyond our comprehension. For example, we hope some day to see the cause of whooping-cough, to know the true pathology of chorea, or rickets, or to understand completely the numerous disturbances of the system arising from the effects of changes of atmospheric temperature on the system. But the clinical phenomena will remain the same; as they have been, so they will be for all time. These clinical phenomena should be made the subjects of your closest observation, and must never be allowed to yield in

importance to any others which may claim to be superior to them.

In the course of these lectures I have had in view the conditions under which most of you will be placed in the ordinary practice of our profession, and if some of you still doubt the value of the work we have done together, I am certain that the time will come when you will understand its importance.

ON THE TREATMENT OF WHOOPING-COUGH.

THE proper plan of vapourising carbolic acid for inhalation is the following: Mix the acid in its pure form (I generally use Calvert's No. 2) with water in the proportion of one part acid to 80· water; that is a small teaspoonful to the half pint (10 ounces). On boiling this the steam given off can be inhaled.

It is of no use to sprinkle carbolic acid about a room or on sheets, for it will not evaporate in any quantity at the ordinary temperature of a room. It must be evaporated by heating with water as above described.

There is a peculiarity about carbolic acid, which makes it very valuable for inhalation, and superior to other agents of its kind. It is this—that the steam which comes off from such a mixture as the above, contains the acid in the same proportion as the water with which it is mixed.

Thus, we can obtain vapour of any percentage of acid we wish. One part in 80· is rather strong. One per cent. is strong enough for young children.

In a future Lecture fuller details will be given on this subject.

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