a little. Mastication impossible, and swallowing difficult from spasm in the throat. From the occiput to the fourth or fifth cervical vertebra there is a hard swelling, not tender on pressure, but painful when the neck is turned. *The right arm is almost entirely paralysed, and its cutaneous sensibility appears to be decidedly exaggerated; the left arm, on the contrary, preserves its power of voluntary movement, and its cutaneous sensibility is in great measure abolished.* Reflex movements can be excited in both arms, especially in the left. The right hand and arm are a trifle warmer than the left. No difference between the two sides of the face as regards warmth and vascularity; pupils equal. No head symptoms; no weakness or numbness in the legs; bladder and rectum normal.

After a few months the head was still a good deal turned; but mastication and deglutition were unattended with difficulty, and the *right* arm was still somewhat weak and the left numb.*

In this case a pressure from outside upon the right side of the cord produced the symptoms. I will not now speak of the peculiar feature that the upper limbs alone were affected, as I shall soon have to revert to that point, and will then speak again of this case.

Lecture

ON

THE DISEASES OF CHILDREN AS A SUBJECT OF SPECIAL STUDY.

Being the Introductory to a Course on the Subject in Edinburgh.

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(Concluded from page 667.)

To understand fully, and to be able properly to treat, disease as it is in children, requires more than a knowledge of symptoms and the power of diagnosing the various *local* affections. You must acquire the power of recognising the relation between the local lesion and the constitutional state. This remark no doubt holds good with regard to the treatment of diseases at all ages; but in the child, far more than in the adult, must it be constantly kept in view; and it oftener occurs that the treatment must be guided more by the general state than by the material lesion. Further, it more frequently happens that the whole question of diagnosis depends more upon what is the constitutional type and condition of the child than on the local symptoms. A child has a large tumid abdomen, and diarrhoea, with other indications of bad health. Is this *tabes mesenterica*, or due to a functional disorder? or is it a part of the rachitic state? In fact, in all disorders where derangements of the stomach and bowels are the prominent symptoms, the diagnosis and treatment entirely depend upon the constitutional character of the child. In another case there is dulness and harsh respiration over the upper portion of the lung. Does that indicate tubercle, or the remains of an old inflammation? A child becomes languid and unwilling to play; is dull, heavy, and irritable; the digestive system is deranged; there is irregular feverish heat. By what must you be guided in your diagnosis and prognosis?

It is from neglect of viewing disease in relation to the constitutional state that many are led into error. It is, moreover, a point upon which our books are generally deficient, the various affections being discussed in detail in reference to the organs affected. The determining the point of relation between the local lesion and the constitution is, as before remarked, one regarding which much progress has been made within the last few years.

Formerly, in children all depraved conditions of the constitution and their concomitant diseases were put down as struma, scrofula, or tuberculosis, the terms being used in an indefinite and general way, and were each regarded to mean pretty much the same thing. What Sir William Jenner did in determining the difference between typhus and typhoid fevers, has the accurate observation and clear mental power of that master-mind also done in this department of our science. The key-note supplied by him in his Lectures on Rickets and Tuberculosis bids fair to bring into harmony our confused and discordant pathological views regarding the diathetic states, and has given a well-founded distinction to the terms, the effect of which can already be traced in the writings of those who have succeeded him.

One important point is worthy of attention. The distinctions he would draw between scrofulosis, tuberculosis, and rickets, are not based upon pathological products alone; but first upon an essential difference in the histogenetic or tissue-forming process; secondly, on the clinical history; and lastly, and more as a confirming test, on the pathological results.

To many, in the reception of these opinions, is the stumbling-stone that the distinctions we would make are not absolute and universal, and that there is no hard-and-fast line that can be drawn. But is not the same thing observed elsewhere, and no such doubt exists? What absolute and universal distinction can be drawn between the animal and vegetable kingdoms? "And, however widely their more advanced members may be separated, there can be no denial that plants and animals are connected by common characters." The existence of "a most intimate and close alliance" does not negative the distinction between animals and vegetables, and can be no objection to the distinction between scrofulosis and tuberculosis when studied clinically in well-defined instances.

Before entering further on this subject, I may remark that much confusion has arisen from regarding many local diseases as scrofulous where there is no primary constitutional affection, and which are merely examples of chronic inflammation set up by local causes (Holmes on "Surgical Diseases of Children," 1st edition, p. 337). Such cases do not come under the term of diathetic diseases, and we must be careful not to argue from them. The constitution, no doubt, may become affected, but it is secondary, and shows the importance of being able to determine the relation between the local lesion and the constitutional state.

As illustrating the practical bearing of the distinctions we would draw, I would quote from Mr. Holmes's work on the "Surgical Diseases of Children." Speaking of the question of surgical interference, he says: "In such cases the distinctions above laid down become important. If there is evidence of tubercular consumption or of mesenteric disease, leading to the inference that the child is the subject of tuberculosis, it is generally undesirable to operate; and even in cases in which the prevalence of the local symptoms induces the surgeon to give the child the chance of recovery which the removal of the disease will afford, his prognosis must be very reserved. In scrofulous patients, on the contrary, the diseased parts may be removed with almost as good prospects of immediate recovery from the operation, as far as I have noticed, as in other cases, and with great benefit to the general health.... In the third class of cases, where the disease, though called strumous, is really only the local result of injury, fatigue, or exposure, its removal by operation is at once followed by restoration to perfect health, and to the average expectation of life."

Tuberculosis and scrofulosis are specially diathetic diseases of early life, and should be there studied, and not through pathological anatomy alone, but rather in reference to the primary nutritive process, the modifications they give rise to in disease common to both, their symptomatic affections, and the modifications in treatment thereby demanded. In fine, it is by the clinical history more than by the pathological results that questions as to differences of constitutional states are to be determined. Moreover, it is in early life that the purest examples are met with before other latent or engrafted influences come into play, and before the tissues take on other degenerations thereby induced, and which are not met with in children. All these circumstances tend to complicate the problem and obscure the results to be gained when carried on with reference to adults only.

* For a full report of the case, see THE LANCET, vol. i., May, 1865, p. 558.

The general characters which represent these different constitutional states have hitherto had special reference to *diathesis*—a term which involves in many minds a special proclivity to, or latent condition of, disease. There are instances where such is the case—where every precaution will not avail to avert the development of the special morbid action. But there are others where some of the general characters are distinctly marked, yet, under ordinary circumstances, no morbid action is set up. Such characters, therefore, must be considered compatible with perfect health, and not necessarily predicated disease; but they still are found to necessitate an exemption to some, and greater predisposition to other ordinary affections, and considerably modify the diseases common to all. I therefore prefer to speak of these as indications of constitutional *type*—a term involving no pathological idea.

The characters of the type differ in no respect from those of the diathesis, except in degree. They are founded upon peculiarities in the histogenetic or tissue-forming power; and can best be studied while that process is most active—before the tissues have reached maturity. The necessity of taking the histogenetic character as a basis of classification of diathesis or constitutional type, and not the ultimate and often very complex results of pathological anatomy, is well exemplified in the study of phthisis in children. Two forms are met with, each belonging to different types. Studied in the pathological theatre alone, they give rise to endless debates, and result in nothing but confusion; but studied clinically, essential differences are established. To quote from a recent writer: "These two types of body," in which phthisis occurs, "are very distinct; but they are not antagonistic. Tubercular formation may occur as an accompanying phenomenon of either, and either may be marked by that form of pulmonary phthisis known by the name of scrofulous pneumonia. But of the two, in the tuberculous diathesis there is an especial tendency to the former disease; in the scrofulous diathesis, to the latter.*"

In one typical order the histogenetic process is characterised by a precision and exactness of execution, without any superabundance of material; imparting a fineness of texture and slenderness of build: and just in proportion as the character of precision and fineness increases, so the diathetic tendencies increase.

In another type the characters are a lesser degree of precision, the employment of a larger amount of material, with consequently a coarser and thicker or looser texture, and a heaviness of build: and just in proportion as these characters increase is the diathetic state developed, it may be under an inherited or an acquired influence.

Before determining the constitutional character of a child, in addition to these general peculiarities must be taken others obtained from the succession and rate of the various evolutions of development, according to the standard before referred to, as regards dentition, the muscular powers, and the mental faculties. In these there are certain deviations quite consistent with health, yet of great practical import. When the period of such changes is past, it is often necessary to inquire particularly of the mother regarding them; and without thus correcting the impressions derived from the general physiognomy you are apt to fall into error by leaving out an important item—it may be good or bad—in your calculation. Thus both scrofulosis and rickets are marked by the characters of the second order, but there are important differences between them as regards dentition and ossification; and while in the first the characters are more likely to be permanent, in the second the defective character of nutrition generally passes off as the development advances: each also has its own distinct pathological tendencies.

The characters which mark the healthy nutrition of the individual continue through, and determine the nature of, the defects of that process under the action of morbid agencies. By an innate difference in character of that power which presides over the development and determines the form and duration of life of every tissue can we alone explain the differences in effect of one and the same influence in different cases. Thus improper nourishment and other bad hygienic influences do not develop rickets in every child. In some cases the bones, instead of becoming

large and soft, are extremely small and firm, while their epiphyses are scarcely if at all larger than the shaft. In others the bones are unaffected, but the skin and subjacent tissues, with the lymphatic glands, take on diseased action.

This constitutional character does not merely determine the form, or give a predisposition to certain affections; but I believe that all diseases, whether general or local, receive the impression of the constitutional type. This can be easily observed in inflammatory affections open to inspection, as in catarrhal ophthalmia and affections of the throat. In the first class, which I before described, the characters are first those of irritation, without any great relaxation, followed, when the action is over, by a speedy return to the normal state, or with a weakened functional power without change of structure. In the second, irritation is less severe, and soon over; but relaxation and tumefaction takes its place, with a tendency to become chronic, the structural change remaining long after the primary action has subsided. In all affections thus open to inspection, material characters are found to modify the morbid action according to the constitutional type and conditions. In diseases, however, which we cannot so observe, the same differences have not yet been discriminated; but more extended clinical observation will, no doubt, increase our power in this direction, and it must ever be by studying them in the light of the constitutional type. Of this I am certain, that bronchitis, pneumonia, and all other internal affections differ in character, when occurring in tubercular, scrofular, rickety, or syphilitic children, as much as do inflammations of the eye. Our treatment also must ever be faulty if we do not regard the constitution in which they occur.

At times there may be some difficulty in determining the predominant constitutional character from those of healthy nutrition alone; but the want is often supplied by studying those of the pathological processes when they arise. We can also often infer the character of the altered nutrition of parts hidden from sight by those of tissues we can see, or from those known to belong to the special type. Just as we infer the character of a nervous affection in a person suffering from some external syphilitic lesion, so we may draw conclusions as to the inflammatory nature in the chest of a person bearing the marks of a scrofulous or a tubercular constitution.

Whooping-cough affords an excellent subject for therapeutic study, viewed in the light of which I now speak. The characters before mentioned may also here be traced in different cases of this disease. In the one class it is increased irritability, or a state of irritation, without any great relaxation; in the second it is relaxation and tumefaction; while in a third neither of these characters specially predominates, but the defect is that of depression, with great tendency to blood degeneration. The indications for treatment ought to be derived from these primary conditions, and not from such complex expressions as spasm, or frequency and severity of cough, &c., as each may be produced under widely different states of the system. No disease is more complex in character, and none shows better how vain it is to attempt always to meet the same symptoms with one remedy. Guided by the characters alluded to, remedies of directly opposite nature are indicated in different cases; and we have some explanation of the very various results obtained by those who use indiscriminately the one remedy in all cases. Past investigation into the therapeutics of whooping-cough has failed in a great measure from no notice having been taken of the constitutional state of the child with whom one remedy or another has been tried. Not in this disease only, but in all others, if we are ever to obtain accuracy, must increased attention be paid to this point in our observations; and this must be my apology for having entered so largely on the subject on this occasion.

Let me make a few remarks, in conclusion, on the general subject of therapeutics. In this department, also, great and rapid progress has of late been made, as may be judged by the differences between the earlier and later editions of works on diseases of children. Here, also, the importance of a special study is manifest. It is not to acquire the knowledge of the doses proportionate to the age, and how to make them palatable, that your study must be confined. If you recall to mind the great differences in the physiological relations of childhood, you will see how necessary it is that treatment should be adapted not in amount merely, but also in kind.

* The Wasting Diseases of Children. By Dr. Eustace Smith. London, 1869.

To take for illustration the one point of reaction. Remember what I told you—how it is often excessive and out of all proportion to the material lesion—how symptoms of the most alarming character may arise from simple causes,—and you will at once see the necessity of being on your guard lest the apparent urgency of symptoms betrays you into too heroic treatment. Again, remembering how liable the frame is to succumb, not so much from the amount of lesion as from the blow given to the frail organisation,—you will see how guarded must be your efforts to allay the excess of action. Remember, too, the great rapidity of disease in children; and while you carefully refrain from undue interference, you must be ready to act promptly and with confidence when required.

There is in our treatment generally too great a tendency to regard all the phenomena of disease as necessarily morbid, and to attack them by our remedies; whereas they are often physiological in nature, and dependent upon the physiological relations of the various organs. In children these are exceedingly intimate; and I believe much injury is often done by the exhibition of antimony and other depressing agents to subdue fever, which in amount is but the expression of the physiological peculiarity of the child. From the greater liability to, and the great danger of, the depression which follows, it is better to meet the increased action by sustaining from the first the vital powers, than by the leveling-down process of depressants. You will accordingly find that in pneumonia and bronchitis, for instance, constant hot fomentations and nutritious diet, and anodynes when required, have supplanted the use of bloodletting, antimony, and mercury. These agents, however, are not to be entirely discarded—each has its place; and this is what you have to study—to know

“the seasons when to take
Occasion by the hand.”

Mercury, the much-abused remedy both in lecturing and in practice, is one of very great utility, even in scrofulous affections; but you will nowhere find in books the proper indications for its employment.

The heroic use of antimony is now greatly given up, but I feel confident that its employment in small doses as an expectorant and diaphoretic is still too general, and that as such it is contra-indicated by the peculiarities of children of which I have spoken, while the same effect can be obtained by less dangerous remedies. With regard to expectorants in general, I believe their division into depressants and stimulants, and the opinion that the latter class should never be used while the affection is acute, are fruitful sources of harm. But I cannot at present enter into these questions. I trust, however, that I have said sufficient to show that a special study of therapeutics also is necessary, and that a knowledge of our art, as applied to the adult, is insufficient and unreliable when brought to bear on disease under different physiological relations. The captain who can skilfully ride through the storms in the wide ocean is not the best to pilot his vessel through the intricate channels of our coast; and there are many sunken rocks and rapid currents around the shores of time which endanger a frail bark before it gains the open sea of life.

HOMICIDE BY MANUAL STRANGULATION, CAUSING FRACTURE OF THE CRICOID CARTILAGE.

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THE question, in a medico-legal point of view, as to whether certain injuries to the larynx, leading to fracture in its cartilages, and causing death, were of a homicidal or an accidental origin, has been, and may yet be, of the greatest importance in its determination.

When I was engaged in the case that forms the subject of this record, I had not read the article by Dr. Charles

Wilson,* nor that by Dr. Alexander Keiller.† I was, therefore, glad to find that I had arrived by independent means at similar conclusions to theirs. These conclusions were—

1. That falls in which the larynx came violently against the edge of a hard body were unlikely to produce fracture; and that admitting the possibility of this mode of origin, then the effects of the mischief would be more discernible on the internal rather than the external aspect of the tube; and that, further, there was no imminence of death from such an injury.

2. That the sustained grip of a powerful human hand, in the face of the existence of osseous change in the larynx, was fully adequate to cause death—by inducing fracture in one or more of the cartilages—by speedy suffocation; and that the post-mortem appearances consequent would, in the distinctness and peculiarity of their features, enable the medical witness to speak with certainty on the matter.

The observations of the authorities I have alluded to are so complete, that I refer all who may be interested to the papers themselves, being desirous, here, of simply pointing out one or two circumstances that are inseparable from this particular instance of murder.

In ordinary cases of death by manual strangulation, the protruded tongue and livid distorted features mark the struggle that has taken place, whilst varying amounts of extravasation amidst the muscles and within the lining membrane of the larynx are discoverable on dissection.

It is probable that robbery, and not murder, formed the programme of this undertaking. Whoever it was who seized the unfortunate woman, dropped at once with a forefinger and thumb on the situation of the cricoid cartilage, which must have broken with the first squeeze, and so led to death with hardly a struggle. Certainly the appearances of the mouth and tongue preclude the notion of any violence having been used there, though it is highly probable that the injury to the nose resulted from the pressure of her assailant's other hand.

The complete absence of extravasation everywhere but immediately about the seat of fracture, and the very limited amount that had been produced even there, together with the very slight change that was discernible inside, fairly led to the conclusion that the hand never wandered from the brittle ring, that afforded such unusual facilities for compression as evidently to excite the surprise of the man himself.

By the direction of Dr. J. B. Davies, the coroner for this borough, on Saturday, the 25th of January, 1868, I examined the body of Miss Mary Milbourn, at her residence, 241, Heneage-street, in the presence of Mr. Samuel Lloyd, surgeon, of Ashted-row. Miss Milbourn was a maiden lady, aged sixty, residing alone, and was supposed to have money in her house. On the evening of the previous Tuesday, the 21st, at about half-past six, the police, on information received that a woman had been murdered, entered the house through an open back door. At the top of some stone steps leading down to the cellar, Miss Milbourn was found lying on her back, her head resting on the second step. She was quite warm, but lifeless. The body was brought into the front room and laid upon a bed.

Eighty-eight hours after death the body was fresh. There was marked lividity of the middle third of the nose; underneath this there was extravasated blood, the nasal cartilages being partially torn from the bones, and the entire nose pushed to the right side. The lips were pale, the mouth placidly closed; there were no marks of violence about the gums, the tongue, or the inside of the mouth. On the anterior aspect of the neck, extending from the jaws to the upper part of the sternum, there was marked lividity, changing here and there to a slight greenish hue, from decomposition. On cutting into the muscles of this region there was no extravasation of blood, but the thyroid body, which was large, appeared congested. On closer examining the larynx, its cricoid cartilage was seen to be broken on the left side, and around the broken part was extravasated blood. The larynx having been removed for minuter examination, it was apparent that the fracture in the cricoid cartilage completely traversed the width of the ring, running in an angular direction, the point of the angle jutting out,

* Case of Imputed Murder by Manual Strangulation; with Observations. “Edinburgh Medical Journal,” 1855-6, p. 289.

† Medico-Legal Observations on Manual Strangulation and Death by External Violence; with Experiments and Illustrative Cases. *Idem*, p. 527.