

Original Communications.

ON SOME OF THE PRINCIPAL EVENTS IN THE CLINICAL HISTORY OF ASTHMA.

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II.—TENDENCY TO HABITUDE: ILLUSTRATIVE CASES.

ALL those who are familiar with asthma, must have observed in it a disposition to habitude—a disposition to maintain and constantly repeat any peculiarity it may have acquired. And this is probably due to the very same tendency of the affection that makes it periodic, to the tendency to repetition, to its being essentially a repetitive disease—the attacks are repeated not only in respect to the interval at which they occur, but in all other circumstances and particulars—the time of day or night at which the attacks come on, the length of time they last, their provocatives, *lædientia* and *juvantia*, and peculiarities in every particular. And that this maintenance of all the circumstances, both in the intervals and the attacks, *does* depend upon this disposition to habit, this disposition to repeat again what once has been, and that it is not due to the phenomena of the disease being an essential and inherent part of each case, is proved by the fact, that if the spell of this repetition is in any particular once broken, the feature that has thus lapsed will stay away; that its absence (although, perhaps, in the first place due to some temporary cause) will be, like its presence, repeated; and, on the other hand, that any peculiarity that has once been acquired (although, perhaps, from some transient and accidental circumstance), will, as the time comes round, recur, and thus be finally adopted among the symptoms, and become a constituent part of the clinical phenomena. There are hardly any circumstances of the disease that may not thus be lost and acquired, and therefore hardly any whose exact maintenance is not due to this tendency to repetition, rather than to their being an essential part of the disease. And thus it happens, that though there are no two cases of asthma that do not strikingly differ, and although in a course of years the features of any one case may be entirely changed, yet there is no disease of a paroxysmal nature in which the consecutive attacks are more exactly the counterpart of each other, or in which an uniform type of phenomena is more rigidly adhered to.

One of the results of this is, that the asthmatic becomes thoroughly "up" in his own case; every symptom becomes an old acquaintance; he recognises the slightest indications, and can predict every event of his disease exactly as it will happen; he knows when an attack is coming on long before others can see any sign of it; he knows when it will go off; he soon comes to learn, too, by this exactly repeated experience, what he may do, and what he may not; what will do him harm, and what good; and thus often becomes his own best physician. I know of no disease in which the medical attendant gets more valuable hints from his patients, and none in which the opinion of the latter is more to be relied on.

A clearer idea of this peculiarity of asthma will perhaps be obtained by the narration of a few illustrative cases, than by any attempt at a general statement or description of it.

A gentleman, who had long suffered from violent spasmodic asthma, went in the summer of 1843 to Ryde. He awoke, the morning after his arrival, miserably bad, and had to rise from his bed about five, and sit leaning forwards on pillows placed on a table; in this position, in an hour or two, he got ease, and remained well for the rest of the day; and, as he had been to Ryde before, and been as well there as elsewhere, he hoped his attack had passed away. The next morning, however, he awoke at four o'clock, still worse; the next, at three, worse; the next night, he hardly lay down at all, and left his bed at two. He then thought it was time to be off, and left by the steamer that morning. He was too bad, however, to proceed farther than Southampton that day. The next morning, after a good night, he awoke perfectly well, and stayed at Southampton a week. He then thought he would go back to Ryde, and try the experiment again. He returned, and the next morning, to his

delight, found himself well. He then felt he was safe, and stayed at Ryde a month, with a degree of immunity from his disease quite unusual for him at his ordinary residence—indeed, without any asthmatic sensation the whole time; and I have no doubt he might have stayed there six months with an equally unbroken immunity. His second visit began well, and therefore continued well; but if he had persisted in his first attempt, his visit would probably have been one of uninterrupted asthma. His return to Southampton broke the habit, and enabled him to start afresh.

An asthmatic patient, living in a county town in the south of England, informed me that there was a village about two miles from the town, to which his family went in the summer, but to which he never dare go, because his breathing was so bad there. One summer he went there, expecting to be obliged to leave the next day, as usual; but, to his surprise, awoke the following morning well. He took the hint, and stayed there three months in unbroken health, free even from the mild form of asthma to which he was accustomed in the town. On his return to the town, his usual asthma reappeared. All subsequent attempts to repeat the experiment have failed; he has never been able to make another "good start".

A gentleman, who lost his asthma some years ago on going to London, has found since that, whenever he goes into the country, it returns. It frequently begins the very evening of his arrival; and even if he goes to bed well, it is sure to wake him the next day about three. Then, for the rest of his visit, he has no peace; he has to sit up half the night, and gets no more than two or three hours sleep before he is obliged to get up again. Nothing will do but his return to London. On some rare occasions, however, for some unknown reason, the asthma has not appeared on the night of his arrival in the country, and then he is sure to be well for the whole of the rest of his visit, however long it may be. As the first night is, so will be all. But when a visit to the country has once lit up his asthma so inveterate is the tendency of the disease to keep up what has once been set going, that, although he returns to London, and to the same conditions and habits as before in every respect, it may be weeks before the asthmatic tendency which has been excited subsides. I have known him pass nine and even twelve months in town without a symptom of asthma, as free from it as a person who has never suffered from it, so that he has said he had almost forgotten what the feeling of asthma was—could lie low at head, eat a supper, and take any liberties he liked with himself. But, after a visit to the country has thrown his disease into a state of activity, although returning to the same house, the same room, the same occupations and habits, he has experienced for weeks his old morning asthmatic sensations, has been obliged to sleep higher at head, to eschew suppers or even late dinners, and to take the same precautions as he would in the country. After a time these symptoms have gradually died out, and he has shaken down into his old condition; so that he looks with great dread upon going into the country, not so much on account of the asthma during the few days he is there, as because, when it has once been set going, he does not know how long it may continue after his return to town.

One patient informed me that, whenever he is well at the commencement of a frost, he is sure to be well as long as the frost lasts. Another states that, although his dyspnoea was usually confined to the morning, he would often for a month together experience a slight attack every day after dinner, lasting for two or three hours; so that he has sometimes gone without his dinners to avoid the attack. Then for three or six months, perhaps, he would be free from these after-dinner fits, and then they would come on again. Sometimes they would come on after supper; sometimes his breath would be very bad of an afternoon, and then clear up in the evening, and he would have a good night; sometimes he would be quite well throughout the day, and bad at night; *but always the same for many days and weeks together*—the habitude, the diurnal rhythm, always strongly marked.

I might go on multiplying examples to almost any length; but I think I have cited enough to prove and illustrate this curious feature of the disease.

The rule, then, appears to be, that if asthma is subjected to unchanging external influences, its cycle of phenomena will go on repeating themselves with a marvellous exactness, but that the maintenance of this unvarying repetition is strictly dependent on the maintenance of identical external conditions, and that any change, however trifling, is capable of breaking the existing habit, and of introducing fresh phenomena. Hence we get a practical rule of considerable importance. If the

asthmatic is going on well, leave well alone; keep him as he is; do not try any experiments with him; for an unfavourable change, once acquired, may persist with unmanageable pertinacity. If, on the other hand, he is going on ill, if his case has got into a rut, give it a shake, make some change, *any* change, no matter whether the object is very definite or the therapeutics very rational, in the hope that, by breaking the existing habit, the patient's condition may be improved. It is a hazardous thing to make any change in the "surroundings" of an asthmatic, if his symptoms are quiescent; for, while the caprice and uncertainty of the disease deprive us of the power of saying what the result of that change will be, its tendency to repetition deprives us of the power of saying when it will end. On the other hand, the most blind and purposeless treatment may be attended with the happiest results, merely by acting as a disturbing force and breaking the chain of repetition.

III.—CHANGE OF TYPE.

Having directed attention to two characteristics of asthma,—its periodicity and habitude,—in which it shows a tenacity of type and aversion to change, I must now say a few words *per contra*, and show that in certain ways it affects change and is a peculiarly mutable disease. This may at first sight appear somewhat inconsistent and contradictory, but, if true, it *cannot* be so; and a closer examination will show that it *is not* so. The changefulness of asthma is quite consistent with its periodicity and its tendency to habitude. Its sameness is an iterated sameness, a constant and frequent repetition of like phenomena; its changes, on the other hand, are slow, gradually brought about by slight and almost imperceptible variations in these recurrent phenomena. This applies to one form of its changefulness—its tendency to change of type: the other, its capriciousness, must be admitted as qualifying, and rendering less marked and perfect, both its periodicity and habitude.

It is very rare to meet a case of asthma over which considerable changes do not pass in the course of years. In the severity of the attacks, in their character, in their duration, in the length of their intervals, in the time of day at which they occur, in their provocatives, in the remedies that control them, in the condition of the patient in the intervals, in the simplicity or complicity of the disease,—in all these points, asthma is prone to change. Independently of the changes that necessarily take place in the progress of a case, either towards a more severe and confirmed state, or towards recovery, there are others that can neither be considered progressive nor retrogressive, but which are so considerable, and which so completely alter the features of the case, that in a few years it would not be recognised as the same. From being irregular, the symptoms have perhaps become confirmed; from being occasional, they have become stated; attacks that were formerly confined to the morning now extend throughout the day; remedies that were formerly infallible have now become worthless; a more scrupulous care is necessary in avoiding possible excitants, whose number is greatly increased; the time in the twenty-four hours in which the paroxysm occurs is changed from morning to evening, or from evening to morning; and so on.

One very common change in the type of asthma—so common that it may be said to be its normal history—is as follows:—At first the paroxysms are of great intensity, and occur at distant intervals, and between them the breathing is perfectly free and clear. As the case progresses, the attacks become milder, but more frequent. At last they become so mitigated, that there can hardly be said to be any exacerbations of the dyspnoea at all. But in the meantime there has gradually grown up a constant dyspnoea, which never goes off in the intervals between the paroxysms, and which, from being at first very slight, almost inappreciable (indeed, in the first part of the case not existing at all), becomes very considerable, and an abiding source of distress to the patient, embarrassing his conversation and impeding his movements, but often, strange to say, less observed by the sufferer himself than those about him. Thus, by the mitigation of the attacks and the gradual development of dyspnoea in the intervals, a paroxysmal has been exchanged for an abiding condition. This is in part a change for the better, in part a change for the worse; for while the asthmatic no longer suffers from the agony of his paroxysms, and may be said rather to experience inconvenience than suffering, yet he now never feels the lightness and freedom of untrammelled breathing. Moreover, an abiding dyspnoea, however slight, affects more the general health than any intensity of paroxysm, implies a worse state of things at the present, and is more ominous for the future.

This gradual change in the phasis of asthma, which is the history of the majority of chronic cases, arises from the operation of three coexisting causes:—a gradual diminution of nervous irritability as life advances, diminishing the tendency to spasm, and mitigating the paroxysm; a gradual loss of reparative power, so that the temporary mischief to the lung left by each attack is less recovered from in the intervals; and the accumulated disorganisation of the lung from the continued operation of its cause. The process goes on for years; and the change is so gradual that it is only by comparing himself with what he was some time ago, that the patient recognises it. The experience of many asthmatics will, I am sure, bear me out in this description.

IV.—CAPRICIOUSNESS.

One of the most singular features of asthma, and one which it possesses to a degree perhaps not possessed by any other disease except hysteria, is its unaccountable *caprice*. It is always puzzling its victim and his friends by the exhibition of some unexpected vagary, giving him pleasant and unpleasant surprises, raising his hopes and then disappointing them, and altogether confounding his calculations. One may say of asthma as Horace did of Tigellius—

"Nil fuit unquam sic impar sibi."

Asthma is doubly capricious: the disease in general is capricious, and each case is capricious in itself.

The caprice of the disease in general is shown in the extreme unlikeness of different cases to one another. Not only are they unlike, but they exhibit the strongest contrarieties and oppositeness—in their behaviour to remedies, in their causation, in their paroxysms, in every point, in fact, of their clinical history. One case is better in dense crowded cities, another in the open country; one likes a low damp situation, another a high and dry one; one a relaxing air suits, another a bracing; one flies from the place which another seeks; one is confined to a spot in which another would die in a year; one is better in winter, another in summer, a third is equally bad all the year round; in one the attacks are entirely under the influence of the stomach, in another food makes no difference; one knows as well as possible when he is going to have an attack, another has no warning; in one the attacks occur with the regularity of clock-work, in another there is not a trace of periodicity; in one ipecacuan is the cause, in another it is the cure; in one nitre-paper acts like a charm, in another it is worthless; one patient says he would as soon be without life as without stramonium, another might as well smoke as much dried cabbage-leaves.

There are three questions in relation to the clinical history of asthma on which, in concluding this part of my subject, I would like to make a few observations.

At what age is asthma most disposed to come on?

What appears to be the influence of sex as affecting liability to asthma?

Is asthma hereditary?

V.—TIME OF LIFE OF FIRST ACCESS.

There appears to be no time of life at which asthma may not make its appearance—from the earliest infancy to old age. The extremes of life, and any part of life between those extremes, are obnoxious to it. A few days after birth the infant may give unmistakable evidence of it; or the old man, after spending a long life without an asthmatic symptom, may be suddenly attacked by it. There are some periods of life, however, at which it is more apt to declare itself than at others; and, as one age is obnoxious to one cause of asthma, and another to another, cases of asthma differ in kind very much according to the age at which they commence. Thus the cases that come on in early life are generally due to the disorders of childhood—in infantile bronchitis, measles, whooping-cough—acting on a constitution possessing a congenital proclivity to the disease. There is, in these cases, generally a sensitive bronchial mucous membrane, and often some pulmonary collapse and emphysema. The cases that come on in youth and early manhood are generally specimens of the pure spasmodic form, without any organic complication. Those that come on late in life are commonly cases of organic asthma—either asthma complicating chronic bronchitis, or cardiac asthma.

I find that in thirty-eight cases, in which I have noted the time of the first access, in seven it occurred during the first year of life. In one of these, distinct symptoms of asthma were recognised at fourteen days old, in another at twenty-eight days, in another at three months, in another at one year, and in three "during the first year," but the exact time is not remembered.

I have long known that early infancy is accessible to asthma, and that many of the best marked and purest spasmodic cases start from this early date; but, until I examined my cases, I was not aware so large a proportion, nearly one in five, occurred within the first year of life. In some of these the disease appeared so early that it would be difficult to say that it was not truly congenital. Within a few days of birth the breathing had the true asthmatic character. The constitutional tendency must be strongly marked indeed that would develop itself so early. And it is worthy of remark that, in all those cases in which the disease made such an early appearance, there was a history of inheritance, and this is quite consistent with what one would expect; its inheritance would imply its constitutional character; its being constitutional would make it probable that it would early declare itself.

The following is a table showing, in thirty-eight cases in which I have noted this point, the relative frequency in which asthma develops itself in the successive decades of life:—

During the first year	- - - - - 7	} 14
From one to ten	- - - - - 7	
From ten to twenty	- - - - - 8	
From twenty to thirty	- - - - - 5	
From thirty to forty	- - - - - 5	
From forty to fifty	- - - - - 2	
From fifty to sixty	- - - - - 4	
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It would appear from this, that the first appearance of asthma is less and less likely to occur as life advances up to old age, when there is an increase. And this is exactly what one might expect from the constitutional nature of asthma. All constitutional diseases are, *ipso facto*, disposed to declare themselves early; the earlier, the stronger the constitutional tendency; and the longer they pass without appearing, the less likely are they to appear. This table, it must be remembered, is not a table of asthmatics at different ages, but of those who have become asthmatic at those respective ages. It is strictly a table of the relative frequency of the *first access* of asthma.

Almost all the cases of which I have taken notes are uncomplicated cases. Of a large number of cases of senile bronchitic asthma I have preserved no record; if I had, the number of cases commencing between fifty and sixty, and upwards, would have been much larger. The number four in the table by no means indicates the proportionate frequency of the commencement of organic asthma in old age.

VI.—INFLUENCE OF SEX.

In fifty-four cases in which I have noted the circumstance of sex, thirty-six have been in males, and eighteen in females, or exactly twice as many in the former as in the latter. To what does this fact point? It unmistakably asserts that the causes of asthma are circumstances to which men are more exposed than women; such as the inclemencies of the weather, the wear and tear and hardship of life, the stress of violent and sustained respiratory efforts as in heavy labour, and intemperance. Unless this is the cause of the difference, we must suppose it to depend upon some greater proclivity to asthma on the part of the male nervous system than the female. Now this I do not believe. Indeed, I believe the reverse. An asthmatic nervous system is a mobile, sensitive, nervous system, and certainly the female nervous system is more mobile and sensitive than the male.

Consistently with this, I believe it will be found that idiopathic asthma—the pure neurosis—is as common in women as in men, and that the cases by which so large a preponderance is given to men, are cases starting from bronchitis. Senile asthma (chronic-bronchitic and cardiac) is, I should say, ten times commoner in men than in women.

VII.—IS ASTHMA HEREDITARY?

I think there can be no doubt that it is. Not that I would take this fact for granted, or on the common assertion that it is so; for I think this a point on which error is apt to arise. In all diseases a certain number of cases will be found in which, on the mere doctrine of chances, the parents, or other members of the family, have been similarly affected. But I think the number of cases in which there is a family history of asthma is greater than will admit of this explanation. Out of thirty-five cases in which I have noted this circumstance, I find distinct traces of inheritance in fourteen; in twenty-one not. It appears, therefore, to be inherited (and my numbers are sufficient to give some evidence) in two cases out of every five; that is, in the proportion of two to three. The kind of inheritance differs very much, sometimes it is direct, sometimes lateral;

sometimes immediate, sometimes remote; as will be seen in the following specification of the inheritance in these fourteen cases:—

1. Inherited from the father.
2. Father a confirmed asthmatic.
3. Inherited from the father.
4. Father a confirmed asthmatic, brother suffers from hay asthma.
5. Grandfather a confirmed asthmatic.
6. Brother and paternal grandmother asthmatic.
7. Father, two paternal uncles, and paternal grandfather asthmatic.
8. Inherited from father; paternal sister died of it.
9. Father died asthmatic at forty-seven.
10. Several indirect branches of the family asthmatic, but neither parent.
11. Mother slightly asthmatic, maternal grandmother severely.
12. Grandfather now suffers from asthma.
13. Grandfather and uncle both asthmatic.
14. Sister and paternal grandmother asthmatic, brother with hay asthma.

With regard to the inheritance of asthma, I have observed one curious fact, which suggests an interesting general pathological question. It is, that several brothers and sisters in a family may be asthmatic without the parents having been so. This would seem to suggest, in respect to disease, a principle with which breeders are familiar—that certain combinations produce certain results, and lead to the *creation* of certain peculiarities, and that the qualities of the progeny are not the mere resultant of the combined qualities of the parents—just as we sometimes see a family of red-haired children, both the parents of which have black hair.

[To be continued.]

THE FORMATION OF CLOTS IN THE VENOUS SYSTEM DURING LIFE.

(A THESIS FOR A MEDICAL ACT IN THE UNIVERSITY OF CAMBRIDGE.)

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III.—ON THE CLOTTING OF THE BLOOD IN THE CAVITIES OF THE HEART.

In the following case the evidences of the formation of clots in the cavities of the heart and in the blood-vessels were unusually clear, and there can be little doubt that death was due to this cause.

A delicate girl, aged 11, was received into the hospital, March 27th, 1859, with a burn upon the outer surface of the right thigh, and on the palmar aspect of the right forearm. The skin was destroyed over a considerable extent; but it was hoped that she would recover, and, for several days, the wounds proceeded favourably, under the application of flour. About April 8th, without any apparent cause, she became rather feverish and refused her food. The slight feverishness subsided, but left her very feeble, with small pulse, dryish tongue, and shrivelled, harsh, scaling skin, the finger-ends feeling as after scarlet fever. Wine and nutritious diet were administered, and some improvement took place. On the morning of the 17th she was very low, but enjoyed her meals more than on previous days; and the nurse thought her better. About four in the afternoon she was somewhat uneasy, and asked the nurse to sit by her; but nothing remarkable was observed till about two hours afterwards, when she asked to be raised up in the bed. As soon as this request had been complied with, it was perceived that she was dying, and in a few minutes she was dead. No marked difficulty of breathing or other especial symptom was noticed.

Fifteen hours after death we found the right cavities of the heart, the left ventricle, and all the vessels connected with these cavities, filled with fibrinous clots. The left auricle also contained a clot, but was not filled by it. The central and greater parts of the clots presented the ordinary characters of the fibrinous masses often found in the heart, though they were tougher and firmer than usual. They were not laminated. Under the microscope they exhibited very fine linear fibres, disposed in an irregular network. The exterior of the clots presented, however, in many places, quite a different appear-