bladder were multitudes of ova. Ova were passed in great number in the urine of this dog. The kidney and the female worm are preserved, and still in my possession.

Distoma Hæmatobum have been found in the bladder, ureters, and pelvis of kidney, as well as in the veins of the intestine, in the portal veins, small intestine, gall-bladder, etc. Griesinger states that this parasite is very abundant in Egypt. The eggs of the worm were imbedded in the mucous membrane of the bladder, which much congested and ecchymosed in these situations. The worms themselves appear to have been found in the vessels. The eggs often form the nuclei of small deposits of uric acid. They have been found adhering to the mucous membrane of the bladder, kidneys, and ureter.

Other Worms passed from the Urinary Organs. A case is related by Raisin in which a worm three inches long was passed by a man fifty years old. Moublet alludes to the case of a boy aged 10, who voided four worms from four to five inches long, accompanied by pus. Other instances are recorded, but these do not seem to be well authenticated.

Parasites and other Animals of accidental presence in Urine. Intestinal worms are sometimes passed into the vessel containing the urine, and the patient not unfrequently affirms that they came from the bladder. Various species of acaria are frequently met with in urine. It need hardly be said they are not found in the urinary organs. Insects and their larvæ are from time to time found in urine. Patients will positively assert that larvæ of the common flesh-fly have been passed through the urethra. The insect larvæ can always be at once distinguished by the presence of tracheæ in every part of their body.

Elongated Clots of Fibrine or of Blood are occasionally mistaken for intestinal worms. Microscopical examination will enable any one at once to distinguish them.

This brings us to the conclusion of the subject of urinary deposits. In my next lecture, I shall draw your attention to the most important characters of some of the principal calculi; and we shall also consider the causes which influence the deposition of these concretions from the urine, and the plans which have been proposed for their solution.

Original Communications.

OBSERVATIONS ON THE TREATMENT OF ASTHMA.

By T. L. PRIDHAM, Esq., Surgeon, Bideford, North Devon.

[*Concluded from page* 898.]

HAVING in my previous papers given the result of my treatment of *dyspeptic asthma*, and having endeavoured to prove how completely *this* form of the disease is under the control of the treatment which I have adopted, I shall now proceed to notice the disease of asthma, the *exciting cause* being the effects of atmospheric influence on those who are predisposed by hereditary taint to the disease. I would first remark that, according to my experience, peculiarities in the atmosphere, in certain localities, acting on the circulating fluid through the medium of the lungs, are a much more frequent cause of continued attacks of the disease than is generally believed; and many persons remain confirmed asthmatics because they have not been able, by repeated changes of air, to find out that condition of the atmosphere which is most congenial to them.

CASE XVI. It is now about a year and a-half since that I happened to meet a medical man who had retired from practice, having followed his profession with considerable repute in the neighbourhood of London. He (after hearing my remarks on the subject of the treatment of asthma) said, "a nephew of mine, who lives in the neighbourhood of Richmond, is a perfect martyr to the disease. No treatment appears to relieve him. I will send for him, and place him under your care." Shortly after this, a bright, intelligent-looking boy, about sixteen years of age, waited on me. His appearance did not indicate, in any very marked degree, that he was the sufferer who had been described to me; however, on inquiry I learned as follows.

He had suffered from early infancy from difficulty of breathing and cough. The intervals between severe attacks were of about ten days duration; they left such debilitating effects that his studies and enjoyments were quite interrupted; and altogether he had a miserable life of suffering. His tongue was clean; his pulse normal; his complexion clear; the chest slightly emphysematous; at the time I first saw him he was perfectly free from asthma. I did not, under these circumstances, prescribe anything further than a few regulations as to diet, requesting to be sent for when an attack occurred. At the end of a fortnight he called again, and informed me he was perfectly free, more so than he ever remembered. Week after week and month after month came, and no attack appeared. He was now so well that he ate and drank what he pleased, exposed himself to all kinds of weather, used an amazing amount of exercise in shooting, fishing, and walking, and gained considerably in strength and flesh; in fact, he was in perfect health, and he returned home without ever taking one single dose of medicine. His father, who is a physician of some eminence, was delighted at the accounts which he received of his son, and was in hopes that by the change a cure had been effected. His freedom from asthma evidently depended on the atmosphere in which he had lived for several months; for his attacks quickly recurred with violence on his return home.

I have since made inquiry whether any traces of the disease had manifested themselves in other members of his family. The result has elicited, that an uncle was the victim of asthma; a peculiar and interesting history was given me of him, which is, I think, worth relating.

He was a man of considerable fortune, and lived in one of the fashionable squares in London, and he was, moreover, a member of Parliament; but all his riches and all his comforts could not keep at bay the enemy which constantly assailed him. It so happened that one occasion he was on his way to the House when business called him through some of the slums of Westminster, and whilst in this smoky locality, he all at once perceived that he breathed with perfect freedom. No sooner, however, did he approach the more open space near the House, than he was violently attacked with a fit of his distressing complaint. He mentioned what had occurred to his medical attendant, who advised him to make repeated excursions in the direction where he had appeared to obtain relief. The result was invariably the same. He was now determined to put the influence of the atmosphere more completely to the test; he accordingly directed his servant to bespeak a bed for him at a pothouse in the immediate neighbourhood, taking care that clean and well-aired blankets and bedding should be provided. In this pothouse he slept, and slept all night, a circumstance which had not happened for years. For several nights in succession he resorted to the same quarters, and was thus satisfied that he had found the long-sought remedy. The result was that he purchased the pothouse, fitted it up comfortably, and there lived to the end of his days, perfectly free from attacks of asthma, within the precincts of the slums and smoke of Westminster. A great aunt also was afflicted with this disease.

CASE XVII. The son of a clergyman, who was born in a parish about fifteen miles to the west of this town (whose father was a martyr to asthma, from the effects of which he died), was in early infancy attacked with oppression and difficulty of breathing, which was considered by his medical attendant as the forerunner of speedy dissolution. It happened that the child was removed for a change of air to the house of his uncle, some ten miles off, when, to the surprise of the mother and nurse, the child's breathing became perfectly natural; and so it remained until it was again removed to its native air and home. This experiment was repeatedly tried, and always with the same result; in fact, his native air appeared to induce distressed breathing and cough, more than any other during the whole early period of the child's existence. At length the time came for school education, and the boy was sent to Eton, having passed the usual diseases of infancy with as little distress and anxiety to his parents as most children. What makes this case remarkable is that during his stay at Eton he was considered one of the most active boys out of seven hundred; for he was one of the fastest runners, one of the best cricketers, and pulled the best oar in the whole school, proving that infantile diseases had produced no organic changes in the respiratory organs; neither had the continued difficulty of breathing left any traces of disease; it is almost needless to say, that he was perfectly free from his hereditary complaint as long as he remained at school.

CASE XVIII. I now revert to Case xv, which I recorded in

my last paper, in which the sedative and dietary system was so successful. The lady returned to this place the following winter, with the hope of deriving equal benefit by the same course of treatment which I had previously adopted; but not so, as her case defied every remedy under which she was placed, being only able to procure a few days respite from the severity of her attacks by palliative measures. The most important and effectual was an enema, containing a drachm of solution of morphine in two drachms of the tincture of galbanum in thin gruel. The mild weather setting in, in the month of April, I advised her to try the smoky atmosphere of London as a remedy. At first she remained for some weeks in the outskirts of town with some near friends, whence she wrote to me, and said, "My distressing breathing has not left me; for I get two or three paroxysms every day." The next letter told me, "I am now in the heart of the City, in lodgings, and breathe as well as I ever did in my life; and to convince you of what I am able to do, I yesterday went without difficulty to the top of St. Paul's in company with some of my nephews and nieces." This case shews that the exciting causes of the disease may differ in the same individual; for, in the first instance, my patient was relieved by means of the sedative and dietary system; and in the second, there was little alleviation until the peculiarity in the component parts of the atmosphere which she breathed acted specifically on her disease. Here it might be asked,—Was the relief obtained by the blood receiving through the medium of the lungs the peculiar element which it required? or did the specific, whatever it might be, act immediately on the nerves of the respiratory organs? My opinion is that it is in the circulating fluid that the secret is to be found.

I now proceed to record the apparent effect of atmosphere on a community. I was requested, about two years since, to visit a patient in the south of Devon, on the banks of the Tamar. Three or four persons had derived considerable benefit from my treatment, who had taken up their abode for a time in my own immediate neighbourhood. These cases had occasioned some amount of talk, and during my few hours stay in the town, not fewer than thirty afflicted mortals presented themselves before me. On a second visit, some four or five weeks afterwards, about twenty fresh cases came before me. It would be needless in me to record the varied peculiarities of all these cases; but there are a few particulars, which were remarkable in them all, namely, that nine out of ten gave a clear history of their hereditary taint of the disease. A few inherited both gout and asthma; and one in particular, a female, told me she was liable to attacks of both diseases, and that during an attack of gout she was always perfectly free from asthma. I think this fact is additional evidence in favour of the opinion I have ventured to advance, that asthma is a blood disease.

I am told that the number afflicted with asthma in the locality of which I am now speaking is quite surprising when compared with other places. In this neighbourhood, the cases amongst the natives are few and far between. The usual state of the atmosphere in that part of South Devon to which I have alluded is considered humid and very mild, as proved by the fact that oranges grow and come to maturity in the open air, as I myself witnessed on the occasion of my visits. What the precise nature of the peculiarities of the atmosphere is I will not pretend to say. I am informed, on good authority, that in some districts in Portugal the disease is never known, particularly at Oporto, whither many an afflicted person from this country, as well as from others, flies for relief. That the disease is seen in most parts of the world, is certain; and I think I may say, that I have had patients from all its quarters. One of the most distressing cases I ever saw was in an aged female of the Ojibbeway tribe. She, with her family, was passing through the country in a caravan to be shown as wonders to the people of England, as one of the tribes of our race. I learnt that she had been afflicted for a great number of years, and the only relief she obtained was in smoking large quantities of tobacco every day. By whom this remedy was recommended I could not ascertain; perhaps, under existing circumstances it was the best. She had all the symptoms of a dyspeptic stomach; and had the opportunity offered, it would have added no small amount of interest in the history of my dyspeptic asthmatics to have treated her on the sedative and dietary system.

I now proceed to speak in general terms of the treatment of asthmatic patients, whose attacks are brought on from other causes than those I have already named—such as bronchitis, influenza, or any epidemic which may pass over a district. In such cases it is utterly useless to treat the disease of asthma specifically; but, on the contrary, we must administer those remedies which are peculiarly adapted to meet the circumstances of the case. For instance, should an attack arise in consequence of sudden exposure to cold or damp, producing pains in the chest, severe cough, with difficult breathing, a quick pulse, and should these symptoms be preceded by a shivering fit, in such a case I should recommend leeching, counterirritation, salines with antimonials, barley-water, etc. Should influenza prevail, and the patient, in addition to asthmatic symptoms, complain of constriction and pain across the brow, with tenderness of the eyeballs, oppression at the chest, with great lassitude of the limbs and depression of spirits; in that case, I endeavour, first, to get rid of the epidemic through the medium of the skin, inducing, if possible, profuse perspirations, without the assistance of antimony or any debilitating remedy, having recourse to mustard fomentation for the feet; and for the purpose of acting on the skin, I have almost invariably found a most simple remedy the best, such as the following:—

℞ Magnesiæ sulphatis gr. xij; potassæ nitratis gr. vj; pulveris ipecacuanhæ gr. i; pulveris rhei gr. ij; M. Fiat pulvis 6tis horis sumendus.

There is, however, a variety of exciting causes which bring to light this mysterious disease—such as peculiar odours, the excitement which joy produces, or the depressing influences of grief; and, on the other hand, these emotions will at times arrest an attack in its severest form. I once saw a lady who first experienced an attack of asthma from hearing of the sudden death of her mother; and again, I know a gentleman in London who, whilst he is engaged in a game of billiards or a rubber, is quite free from asthma, but as soon as the excitement is over, the oppression of breathing returns. I have been told this old gentleman will keep his carriage waiting for hours at the door of his club-house simply because he dreads to return to his home at night from the sure conviction that he is to pass a night of suffering and distress. Again, a lady of my acquaintance will detect the smallest quantity of powdered ipecacuanha which may be exposed in the room where she sits from the distressing asthmatic effect it produces on her respiratory organs. Another takes a sea voyage during the hay season to avoid what is commonly called hay asthma, and another similarly afflicted finds instant relief from a pinch of powdered camphor taken as snuff. Again, we have asthma from the effects of pressure on a nerve, or from mischief going on in the spinal cord; and I have also seen a fit of hysteria bring on an attack of asthma. But the most hopeless and least remediable forms of the disease are those in which disease of the heart or lungs coexists with asthma. Affections of the heart are not uncommon in worn-out constitutions, from the effects of repeated attacks of asthma; the patient being brought to the lowest possible condition by a life which has been passed in suffering and misery. There are, however, comparatively few cases in which the lungs undergo such a change in their structure as to produce a fatal result, as the respiratory organs appear to adapt themselves to the peculiar functions which they have to perform in asthmatic persons without producing a fatal change of structure.

I will now mention the most effectual palliative remedies which I have employed with more or less success; but no one of them is to be relied on in any second attack, for what may succeed to-day may fail to-morrow, as I have often witnessed.

The first on the list is stramonium, the fumes of which may be collected in an inverted glass bowl with a narrow mouth; the bowl being charged to its full is placed under the mouth of the patient, who is directed to inhale to the fullest extent in his power the smoke which has been collected in the bowl, taking care to hold his head away from the bowl when an expiration takes place. Chloroform, both taken internally or inhaled, is a powerful remedy, but it must be employed with caution, and never administered except by a medical attendant. The fumes of nitre paper in a state of ignition, well inhaled, is often a valuable remedy. Care should be taken to procure the the best prepared from a good chemist. Chloric ether and the tincture of the lobelia inflata will occasionally relieve. Bicarbonate of soda, as well as chlorate of potass, given in full doses, I have frequently seen produce a good effect. Again, I have seen repeated doses of sulphate of alum procure relief, the powder being allowed to dissolve on the tongue before it is swallowed, in ten grain doses. I have also seen the fumes of tobacco, inhaled as I have recommended in the use of stramonium, relieve, when other remedies have failed; but I do not like this remedy, it produces such deadly faintness and nausea. Small drinks of the best Mocha coffee, made strong, will often procure relief. On two occasions, when every other

remedy failed, I succeeded in procuring almost instant relief, by injecting two grains of morphine and a drachm of tincture of assafœtida. These were cases where mental distress appeared to be the exciting cause.

I have often sat at the bedside of one, suffering from the severest form of the disease, watching with great anxiety the result of prescribed remedies, and it has not unfrequently happened that many have been tried without relief, the patient all this time gasping for life with sufferings the most intense, when relief has at length come from a remedy apparently the most unlikely to procure it—so capricious is the disease, and so uncertain the remedy in asthma cases of this particular character.

Having now recorded my treatment and opinion as regards a considerable number of cases of asthma which have come under my notice during the space of some years, I would, in concluding these papers, make a few additional remarks, which may, perhaps, lead those disposed to follow up the subject with scientific research, to throw still more light as to the actual cause of this disease. So long as asthma is ranked amongst diseases which are called peculiarly nervous, so long can we never hope to come to any correct conclusion; the idea being so vague, and the laws which govern the nervous system for the most part so incomprehensible. Is it not more likely that the real cause of the disease is, as in other hereditary diseases, some impurity or deficient element in the circulating fluid. For instance, do we not find in scrofula, remedies in iodine, and in the phosphates of lime and iron? In phthisis, do we not see that cod liver oil will arrest the disease, and in some instances eradicate the predisposition to it? And do we not find in some forms of gout that colchicum and alkalies will keep at bay this disease? In other instances, all traces of gout will be lost by simply drinking at meal-times what is commonly called rough cider. How are these results brought about, but through the medium of the circulating fluid, which takes up the antidote after the process of digestion is completed, and receives from the remedies employed, that which is required to nourish the human frame, and carry on life free from those diseases which hereditary predisposition has implanted? True it is that the exciting causes of asthma are various; and that the disease, although in the constitution, may not be brought to light until the individual so predisposed comes in contact with such causes. Now, in every case which I have recorded, I have been able distinctly to trace hereditary predisposition; and what, may I ask, does hereditary predisposition mean but a taint in the blood, or, in other words, a constitutional defect?

I think it must be admitted from the history and symptoms which I have given of dyspeptic asthma in particular, that this form of the disease, at least, is under the control of medical treatment. Nothing can be more conclusive of the fact than the evidence given by those who had been martyrs to the disease, and have had sufficient resolution to carry out the prescribed treatment in its full integrity. This being admitted, what does it prove? Surely that the beneficial change is derived from the purity imparted to the blood by means of a more perfect performance of the office of digestion of the wholesome food which is taken into the stomach for the purpose of nourishing the body, and here lies the secret of the treatment in an especial manner of all constitutional diseases. If this principle be admitted, then we have advanced far on the road in combating this distressing and formidable disease.

I have before stated that the next frequent exciting cause which brings the disease into action is atmospheric; these results are most mysterious, as, in some instances, an atmosphere apparently the most highly charged with impurities will act as a specific in the disease, whilst apparently the most pure air will, on the other hand, bring on the most distressing state of sufferings to the person predisposed to the disease of asthma, and *vice versa*; and how, I would ask, can these contradictory phenomena be accounted for, except by the supposition that some peculiar element in the atmosphere either adds to or takes from the healthy condition of the spring of life? In the atmosphere both the bane and the antidote are to be met with. And why should not the remedy be in our own hands, in these days of advance in science, both as regards microscopic discoveries and chemical research?

There are other exciting causes of the disease which, as yet, appear to baffle all conjecture as to how they act so instantaneously; I mean impressions on the mind, such as grief, fear, sudden passion, news of an exciting nature, and hysteria. When these cases do occur, I have almost invariably discovered, on strict inquiry, that hereditary predisposition to the disease prevails. There is, however, one remarkable feature in every form of asthma which is well worthy of notice, and it is this, that on the termination of every attack an expectoration is thrown off from the lungs varying in quantity and appearance. In some instances there is a thick heavy mucus; in others a large quantity of mucus of a light frothy appearance; whilst in the severest form of the disease there may be only a few small dark pellets coughed up before relief is obtained.

I will not venture further in my remarks which are the result of my own personal experience. I can only hope they may lead those who are more particularly occupied in scientific research to bear in mind the few observations which I have ventured to bring before my professional brethren.

OBSERVATIONS ON THE MORBID ANATOMY, PATHOLOGY, AND DETERMINING CAUSE OF EMPHYSEMA OF THE LUNGS.

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[*Read before the Royal Medical and Chirurgical Society.*]

Part II.

Two Principal Theories of the Determining Cause of the Disease. Views of Laennec. Theory of Dr. Gairdner. The Mechanism of Respiration. Effects produced by Collapse of the Lung. The Expiratory Theory. The Modus Operandi of Expiratory Efforts. The Anatomical Arrangement of the Walls of the Chest and the Disposition of the Lungs. Effects of Forced Expiration. The Case of M. Groux. Results of the Author's Observations. Infrequency of the Disease as a Sequel of Pleurisy and Pneumonia; its frequent occurrence in Tubercular Lungs. Cases recorded by M. Guillot. Hereditary Nature of the Disease.

Speaking generally with reference to the determining cause of emphysema, we may say that two principal theories of it have been entertained by pathologists: these are respectively called the inspiratory, and the expiratory, theory.

By those who hold the former view, it is supposed that dilatation and subsequent rupture of the air-sacs of the lung take place as the result of their over-distension during an inspiratory act; by those who entertain the latter view, that these results are brought about by expiratory efforts, more especially such as are produced by coughing.

Laennec, recognising the frequency of the disease as a sequence of pulmonary catarrh, supposed that it was occasioned by an overdistension of the air-cells, from an accumulation of air taking place in them, in consequence of the obstructed condition of the bronchial tubes. He says:—"The small bronchial tubes are distended by the viscid mucus, or by the swelling of the mucous membrane. Now, as the muscles which act in inspiration are strong and numerous, and as expiration, on the contrary, is only produced by the elasticity of the parts and the feeble contraction of the intercostal muscles, it must often happen that in inspiration, the air, after having overcome the resistance which was opposed to it by the mucus, or by the tumefaction of the mucous membrane, cannot overcome it during expiration, and remains imprisoned. The following inspirations add further to the dilatation of the cells to which the obliterated tube leads. Lastly, the distension by the heat of the lungs, of the air introduced cold into the chest, must contribute to this dilatation."

The theory thus advanced by Laennec is based on a view of the respiratory function which has been proved to be essentially incorrect; viz., that the inspiratory power is greater than the expiratory. The researches of Hutchinson and others have shown that the power of forced expiration considerably exceeds that of inspiration. This important physiological fact cannot be too constantly borne in mind in considering the nature of the affection we are examining.

But, further, it has been shown by the researches of Gairdner and others, that an accumulation of mucus in the bronchial tubes, such as Laennec thought would lead to a distension of the air-sacs, has an exactly opposite effect, and is, in fact, followed by a collapse, and not a dilatation of the pulmonary tissue. Dr. Gairdner has shown that the pathological condition of the lung, which has been known under the name of