On the relation between therapeutics and pathology : with especial reference to some forms of cardiac, renal, and nervous diseases : a course of lectures delivered at the Royal College of Physicians in the spring of 1853 / by George Johnson.

Kindly presented
From the Author -

ON THE RELATION BETWEEN

Therapeutics and Pathology.

WITH ESPECIAL REFERENCE TO

SOME FORMS OF CARDIAC, RENAL, AND NERVOUS DISEASES.

A COURSE OF LECTURES

DELIVERED

AT THE ROYAL COLLEGE OF PHYSICIANS,

In the Spring of 1853.

BY GEORGE JOHNSON, M.D., LOND.

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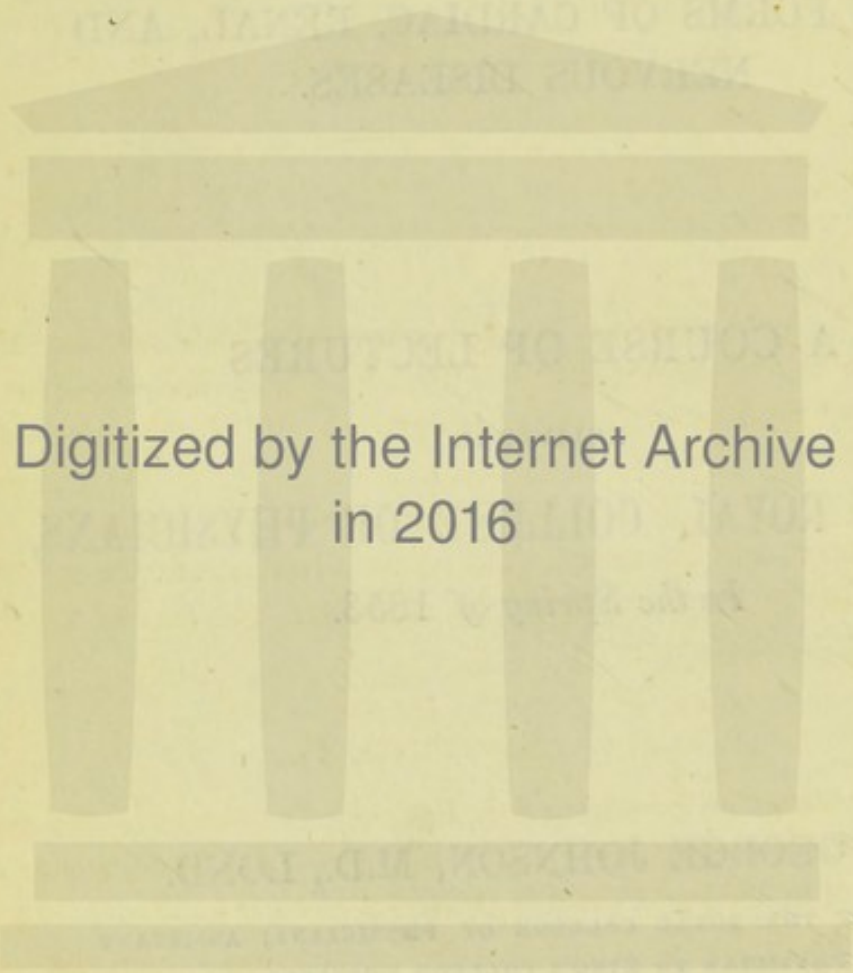

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ON THE RELATION BETWEEN

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LECTURE I.

Mr. President and Gentlemen,—Before I undertook the honourable task of delivering in this theatre the course of lectures which I am about to commence, I ascertained that it was neither indispensable, nor, indeed, very desirable, that the materia medica,(a) in a limited sense of the term, should form their chief subject; and that I might strictly fulfil the intention of the lectures by taking a wider scope, provided that the end and object of my discourses were, the prevention and the cure of disease,—provided, too, that my efforts were directed towards the attainment of that very important object, the right use of the materia medica.

Now, it is manifest that the right use of the materia medica implies a knowledge,—1st, of the materials themselves; of their physical and chemical properties; of their effects upon the healthy living body; of the doses, and of the modes in which they may best be administered. 2ndly. There is required for this end a knowledge of disease; of its causes, its nature, and its consequences; and, 3rdly, the most important knowledge is that which relates to the influence of

(a) The course of lectures which I was appointed to deliver is nominally on Materia Medica. I had the express permission of the President of the College to give the term a wide interpretation.

the materia medica upon morbid processes, whether in preventing, modifying, or entirely arresting them. My design in the present lectures is, to consider the materia medica only in the last-mentioned relationship—with reference, that is, to the connexion between therapeutics and pathology.

There are, probably, few subjects respecting which there exist so many conflicting opinions as with regard to the effects of remedies upon disease, their modes of action, and the best methods of administering them. Without stopping to inquire how far some of the propounders of strange doctrines do actually and honestly believe in the wild and irrational notions which they profess to hold, it is notorious, that a great diversity of opinion upon many points relating to the cure of disease prevails among the most sincere, zealous, and able cultivators of medical science.

It can scarcely, I think, be doubted, that many of the conflicting opinions which exist with regard to the treatment of certain diseases, and the value of particular means of cure, have their origin in an insufficient regard to what has been called the natural history of disease,—by which I mean, the origin, the nature, and the consequences of morbid processes. Within the last few years, the importance and the intimacy of the relationship between therapeutics and pathology have been much more insisted upon than formerly; but it is very apparent, that the subject has not yet received all the attention to which it has a claim; and that to the neglect of it may be attributed many of the opposing theories and the diverse modes of practice which are found to prevail.

There are certain propositions with reference to this subject which are so self-evident as to receive immediate and universal assent. It is obvious, for instance, that no one is fully competent to cure a disease, unless he have the power to detect the particular malady which he professes to heal. It is not sufficient to know, that quinine is a cure for ague; but there must also be the ability to distinguish ague from other diseases with which it may be confounded. Without this power of diagnosis, the remedy would sometimes be withheld when it might have been given with success; while, in other cases, supposed to be ague, but not really such, the

administration of quinine might be useless, or even mischievous. We sometimes receive from our patients, in reply to the question, "What ails you?" not a detail of symptoms, but a ready-formed diagnosis; and among those who have had chills or rigors, the belief is common, that they are suffering from ague. It scarcely need be said, that we cannot act upon such a diagnosis without further inquiry, and that, if we were to do so, we should often fail to cure our patients, while, at length, our frequent failures would naturally lead us to the conviction, that the value of quinine as a remedy for ague has been greatly over-estimated.

The importance of scientific pathology, and of an accurate diagnosis, would be far less than it is, if, for every disease which we can recognise, we had one or more specific remedies, such as quinine for ague. Unhappily, however, it is far otherwise; and, in a large proportion of cases, we are reduced to the necessity of treating disease upon what are called general principles. In other words, we study the phenomena of disease with a view to ascertain their nature and tendency; we learn what we can of the natural curative efforts which are continually manifesting themselves during the progress of various diseases; and we thence deduce rules for our guidance in the management of these diseases; one of the most important rules being, to avoid all mischievous interference, and to do nothing, if we have not a reasonable hope of doing good. It is, I think, extremely improbable, that specific remedies will ever be found for many of the diseases with which we are acquainted. The contrary doctrine, we know, is maintained by some claimants for public favour, who proclaim the virtues of one unfailing remedy for impure blood, the source, as they assert, of all diseases, while others boast with equal confidence of specifics as numerous as the multitudinous forms of disease. A short time since I was told by a friend, who has acquired a well-deserved reputation by investigating a particular class of diseases, that a certain practitioner is in the habit of sending to him patients, in order that he may form a diagnosis and name the disease; this being done, the patients return to the aforesaid practitioner, who supplies them with the cure for the disease

which he could not himself detect, and which he still knows only by name! It would be a waste of time to insist upon the absurdity of such pretensions as these.

It is not difficult to perceive, that there is an almost daily increasing difference between true and false medical science of the present day; and, inasmuch as their methods of procedure are essentially opposite, the breach between them will soon become so wide, as to be apparent to all who are not wilfully blind. One great and important distinction between true and false philosophy is this,—that the one, while it pays due regard to the wisdom and experience of past ages, and obtains from them all the assistance which they are capable of yielding, does not hesitate to examine, by the aid of such light as modern researches afford, all the dogmas which have been handed down to it; and, finding some to be inconsistent with facts and with analogies, it abandons them as untenable, and as unsafe guides in practice. It scarcely need be said, that this is the truly scientific method of inquiry, and that a very prevalent false method is, in many respects, the direct opposite of this,—a method which has a tendency to dogmatise with reckless boldness, and which, starting from certain ill-grounded and false data, arrives at conclusions which are not more opposed to the doctrines of former ages than they are to the experience and common-sense of the present. The disciples of Hahnemann are conspicuous examples of this pseudo-scientific method. The difference between the two methods, as I have before intimated, is daily becoming more apparent. We are gradually banishing both from our theories and from our practice, much of that mystery—in an evil sense of the word—for which practitioners of the healing art were formerly quite proverbial; and we are becoming more accustomed to appeal to the common-sense of each other, and of our patients, in confirmation of our doctrines and our practice.

There is, probably, no better test of the truth or soundness of any doctrine, when applied to practice, than the fact of its being consistent with the dictates of well-informed common sense; and, perhaps, I could give no better illustration of the beneficial influence which has been exerted by this kind of appeal, than is to be afforded by the modified views

now prevalent with regard to the nature and the treatment of inflammation. It certainly does appear contrary to common sense to suppose, that a disease, whatever may be its name or its nature, which has been induced by exhausting and depressing influences,—by excessive labour, by loss of rest, by abstinence, by hæmorrhage, or by some other drain upon the bodily strength,—that a disease so originating can be removed by a recourse to measures which have the same exhausting and depressing tendency,—by the free abstraction of blood, by a rigidly low diet, and by active purgatives. Science has listened to the voice of common sense in this matter, and, in spite of the dogma *similia similibus curantur*—a method of practice which was originally suggested by imperfect and erroneous views respecting the nature of inflammation—has been greatly modified, and with the happiest results. It is now becoming more and more apparent, that the *quantity* of blood in the vessels of an inflamed part is not the primary and most important fact in the phenomena of inflammation. That the so-called increased afflux, or determination, of blood, is in reality produced by impeded flow of blood through the capillary vessels, resulting from an altered relation between the blood and the tissues with which it is brought into contact. This altered relation between the blood and particular tissues, may depend upon an excess of nutrient materials in the circulating fluid, or it may depend upon a directly opposite condition, or upon other changes in the *quality* of the blood. So that, however great may be the resemblance between the local phenomena of inflammation in different cases, the treatment must be conducted with a constant reference to the causes which have given rise to the disease.

The importance of ascertaining the remote originating cause of a disease is great in proportion to the degree of doubt which there may be as to the precise nature of the local changes upon which the symptoms in any given case are supposed to depend.

Perhaps I cannot better illustrate this remark, than by a reference to those cases in which cerebral symptoms, and especially heaviness of the head and drowsiness, occurring in feeble and exhausted infants, might be erroneously

supposed to indicate an inflammatory condition of the brain —cases of hydrocephaloid disease, as they have been called by Dr. Marshall Hall, who was, I believe, the first to publish an account of the affection in question. Dr. Gooch's valuable essay (a) on this subject is so well known, that I scarcely need refer to it, except for the purpose of recommending it to the notice of any one who, perchance, may not have met with it. The mode of determining the true nature and the appropriate treatment of these cases, is to observe, not only the heaviness of the head and the drowsiness, but also the accompanying symptoms, and the previous history of the child. We are to take care, as Dr. Gooch advises, "that a drowsy child, who is languid, feeble, cool, or even cold, with a quick weak pulse, should not be treated by bleeding, starving, and purging, like a drowsy child, who is strong, plethoric, has a flushed face, and a heated skin." When, in addition to the symptoms of exhaustion before mentioned, we learn, as we often shall on inquiry, that the child has been recently weaned, or that, from some cause or other its food has disagreed, that the bowels have been disordered and relaxed, or that the patient's strength has been reduced by active medicine or by leeching, little doubt will remain as to the nature of the case, and as little as to the necessity for nutritious food, for stimulants, and for tonics. I shall have frequent occasion to insist upon the importance of directing attention to the remote causes of disease, as a means of determining both its true pathology and its appropriate treatment.

I purpose now to illustrate the connexion between pathological science and rational therapeutics, by a consideration of *hypertrophy of the heart.*

It was formerly much more than at present the custom to speak, and even to write of hypertrophy of the heart, as if it were a disease *per se*, against which remedial measures were to be directed, without consideration of the cause of this structural change, or the possible consequences of injudicious attempts to remove it. We are not surprised to

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(a) "On Some Symptoms in Children, Erroneously Attributed to Congestion of the Brain."

hear such language from non-professional persons, who frequently speak of themselves, or of their friends, as having "enlargement of the heart," and who appear to consider that this is a sufficient account of the disease, and one which will enable a physician to give an opinion as to its probable consequences. We cannot, however, but experience a feeling of astonishment, when we find, as we sometimes do, that even those who appear to consider themselves competent to improve the treatment of these diseases, disregard the very elements of the question. Not long since, there appeared, in a Medical journal, a paper, in which it was proposed to cure hypertrophy of the heart by the inhalation of medicated vapours. It was maintained, that this method of treatment afforded great hopes of success, inasmuch as the remedy would speedily be brought into direct contact with the part most frequently affected—viz., the left ventricle. Now, the obvious defect in this paper, is the absence of any allusion to the various causes, and the pathological significance of hypertrophy of the left ventricle. There is no indication, that the author of the paper at all appreciates the great difficulty in the way of curing hypertrophy of the heart, without a previous removal of the cause which gave rise to it, or the fatal mischief which might ensue, if, by any means, such a result were attainable.

A consideration of the various causes which give rise to hypertrophy of the heart will suffice to show the unreasonableness of expecting to remedy, by any one method, a condition so diverse in its origin. I may state, *in limine*, that there is, probably, no exception—there is, certainly, no *proved* exception—to the rule, that hypertrophy of the walls of the heart results from continued or frequently repeated increased contractions of its muscular fibres. It consists in an increased growth of muscular tissue, and this results from the frequent and violent contractions of the heart, which are occasioned by a necessity for some additional effort to carry on the circulation. This growth of muscular tissue, in obedience to the demand for increased exertion, is one of the beautiful instances of those compensating and reparative processes with which the physiologist and the pathologist are familiar. An illustration of

the same beneficent law is seen in the firm and massy muscles of the blacksmith's arm, as compared with the flabby and undeveloped limbs of the tailor, an instance, as we see, of supply being regulated by demand. Thus far, it appears, that hypertrophy of the muscular walls of the heart is a simple and easily intelligible phenomenon; but when we proceed to inquire into the various circumstances which may give rise to this demand for increased efforts on the part of the heart, and the consequent hypertrophy of its muscular tissues, we find that these causes are numerous and very diverse; and it becomes apparent that our success in the treatment of this condition must greatly depend upon our ability to detect and to remove its originating causes.

Among the most frequent causes of hypertrophy of the left ventricle are, first, a diseased condition of the aortic valves, or of the aorta itself; and, secondly, such a diseased or imperfect state of the mitral valve as will permit the blood to regurgitate into the auricle. The result of each of these conditions is, that the left ventricle has to perform more than its natural amount of work, and, in consequence, its muscular walls acquire an increase of thickness. Narrowing of the aortic orifice, or a diseased condition of the arterial walls, exerts an obstructive influence upon the current of blood directly, while a diseased condition of the aortic or mitral valves, which permits of regurgitation, may cause an indirect, but equal impediment to the circulation, for the system demands a certain supply of blood in a given time; and as the blood which regurgitates either from the aorta into the ventricle, or from the ventricle into the auricle, in no way contributes to that supply, the amount of regurgitation, if it could be estimated, would be an index of the degree of extra ventricular contraction, either as regards force or frequency, or both, which is rendered necessary by this backward current. In each of the cases which I have mentioned, the hypertrophy of muscular tissue is a natural result of the increased demand for the muscular power which is required for overcoming an impediment to the onward passage of the blood.

In the cases to which I have now alluded, there is a very

obvious mechanical cause, in the condition of the valves or of the arterial walls, for the impeded circulation, and the consequent hypertrophy of the left ventricle. But there is a numerous and important class of cases in which there exists a very marked degree of hypertrophy of the ventricles without disease of the valves or of the aorta; in short, without any obvious cause of impediment to the circulation. This form of hypertrophy occurs, for the most part, in connexion with chronic disease of the kidney; and it will, perhaps, be remembered, that in the "Gulstonian Lectures,"(a) which I had the honour to deliver last year, I entered at some length upon the consideration of this subject, and then suggested what appears to be the most reasonable explanation of hypertrophy of the left ventricle, when it occurs in connexion with chronic renal disease, and unassociated with disease of the valves or large arteries. The subject is one of much interest and importance, as well to those who are studying the connexion between morbid phenomena, as to those who are engaged in the treatment of disease. At present, I can only refer to such of the leading facts and arguments as will suffice to show in what way the question bears upon our present inquiry,—the relation, that is, of therapeutics to pathology.

The connexion between hypertrophy of the left ventricle and chronic disease of the kidney was first pointed out by Dr. Bright, whose observations upon this point are in strict accordance with those which have been since made by others. Dr. Bright found, that, in 52 out of 100 cases of renal disease, which were examined after death, there was hypertrophy of the heart. In 34 of these 52 cases of hypertrophy no valvular disease whatsoever could be detected, but, in 11 of these 34, there existed more or less disease in the coats of the aorta; and this disease may perhaps have impeded the circulation, and so have occasioned the hypertrophy; still, however, there remain 23 cases without disease either of the valves or of the arterial coats, without, as Dr. Bright remarks, "any probable organic cause for the marked hypertrophy generally affecting the left

(a) See *Medical Times and Gazette*. 1852.

ventricle." Now, the most probable explanation of these cases is this, that the blood contains urea, and other excrementitious materials, which have accumulated there in consequence of degeneration of the secreting tissues of the kidney; that the blood thus contaminated is impeded in its passage through the systemic capillaries, and that the hypertrophy of the left ventricle results from the increased efforts which are necessary in order to overcome this impediment. The chief facts which lend support to this explanation of the phenomena in question are briefly these:– It has been demonstrated, that at least one species of excrementitious material has precisely that effect upon the circulation which I have supposed to result from the accumulation in the blood of urinary excreta. Dr. Reid has shown that the exclusion of air from the lungs of a dog, and the consequent transmission of black blood into the systemic arteries, has the immediate effect of causing great distension of the arteries, and an increased pressure upon their walls, while there is a corresponding diminished pressure upon the walls of the veins. It is evident, therefore, that this black, unaërated blood is impeded in its passage through either the minute arteries or the capillaries. The final result of the continued exclusion of atmospheric air from the lungs is a complete arrest of the blood in the pulmonary capillaries, as proved by the great engorgement as well of the lungs as of the right side of the heart and of the veins, and the comparative emptiness of the left cavities and the arteries.

It appears, therefore, that an excess of carbonic acid in the blood occasions an impeded circulation through the entire capillary system, and that the impediment increases until the blood is finally arrested in the capillaries of that organ whose office it is to eliminate the poisonous material. The very gradual process of asphyxia, which often results from emphysema of the lung and chronic bronchitis, exerts upon the right ventricle of the heart the kind of influence which a consideration of Dr. Reid's experiments would have led us to anticipate: the walls of that cavity usually acquire such an increase of thickness and of strength as is rendered necessary by the impeded condition of the pulmonary circulation. We have here, then, another cause and another form of hypertrophy of the heart.

Returning now to the hypertrophy of the left ventricle, which occurs in connexion with chronic renal disease; the reasons for believing that it results from an impeded flow of blood through the systemic capillaries, are briefly these:—1st. The absence of any other obvious cause of the phenomenon; and, 2ndly, the analogy with the consequences of asphyxia,—an analogy which is strengthened by the observation, that the condition of the renal blood-vessels is such as to indicate that these forms of diseased kidney which give rise to an accumulation of urinary excreta in the blood, are associated with an impeded circulation through the renal capillaries, which is strictly analogous to the state of the pulmonary circulation in cases of asphyxia. The minute branches of the renal arteries and the Malpighian capillaries in the cases of chronic disease of the kidney to which I now refer, usually have their walls hypertrophied and thickened in a way which can be explained only on the supposition, that there has been a long-continued impediment of the circulation through the intertubular capillaries.(a)

I pass over the subject of adherent pericardium, because its influence upon the movements of the heart, and in the production of hypertrophy, is uncertain.

Before I speak of the indications for the treatment of hypertrophy, I beg to direct attention briefly to those cases of mere functional disturbance of the heart, which have some resemblance to hypertrophy, but which are not really such,—cases of "mock hypertrophy," as they have been well designated. Now, as to the marks of distinction between this condition and true hypertrophy, Dr. Latham(b) well observes, that "impulse of the heart taken alone, however great and however extensive it may be, is not a sure physical sign of hypertrophy. Hypertrophy, indeed, cannot exist without excess of impulse; but, excess of impulse can exist without hypertrophy. When the impulse of the heart is excessive, and, at the same time, its sounds are obtuse,

(a) This subject is treated more at length in a Paper by the author, in Vol. XXXIII. of the "Medico-Chirurgical Transactions;" also in his treatise "On the Diseases of the Kidney."

(b) "On the Diseases of the Heart."

muffled, and indistinct, and the præcordial region presents a larger space than natural, which is dull to percussion, then the signs of hypertrophy are complete. But, when the impulse of the heart is in excess, and, at the same time, its sounds are as loud and as clear as ever, or louder and clearer still, and the whole præcordial region is quite resonant to percussion, save the small space which is naturally dull, then the signs of hypertrophy are incomplete." Dr. Latham adds, "Yet, if this be enough to constitute hypertrophy, I have seen and treated it successfully in a hundred instances. But, in the meantime, I have not thought that I had to do with any such affection, or ever claimed the least credit for curing it." Dr. Latham divides these numerous cases of mock hypertrophy into three classes, with reference to the general physical condition of the persons affected.

1st. Young persons in the prime of life are frequently the subjects of this affection. They are often plethoric, and often sedentary, and can assign the origin of their complaint to no particular exciting cause. In them, the excessive action of the heart appears to result from a rich and redundant blood; and the cure of their simulated hypertrophy is effected by depletion, abstinence, and more active habits.

Again; young persons are the subject of it, but they are often pale, and thin, and dyspeptic, and very sensitive, and inactive from mere debility and nervousness. In such cases, great and permanent benefit is often derived from the exhibition of tonics, and especially from the preparations of steel, from a nutritious diet, and from such an amount of daily exercise in the open air as can be endured without an exhausting degree of fatigue.

Again, Dr. Latham adds, "young persons are the subject of it, but they are often neither florid nor pale, neither too full nor too empty of blood. They have no complaint that they can tell you of, and none that you can make out, except an inordinate impulse of the heart; an impulse great enough for any amount of hypertrophy, and constantly present, and admitting of severe aggravation, and even attended with pain; while the sounds of the heart are still loud and clear, and the præcordial region is still duly

resonant." I have seen many cases referable to this last division, in which the chief, if not the sole cause for the tumultuous action of the heart, was mental shock or anxiety. The difficulty of dealing with them is usually increased by the hurtful influence which the patient's attention—continually and in spite of himself directed to the heart,—exerts upon the movements of the organ. A constant dread of sudden death, too, is one of the most frequent and distressing attendants upon this condition, and one which it requires all the skill and judgment of the physician to combat. An unfavourable opinion, or an unguarded expression, in the presence of the patient, may be a source of dread and misery to him for a very long period. One of my dispensary patients, a law-stationer's clerk, about 30 years of age, has suffered from this nervous form of palpitation from childhood; but he declares that he has never recovered from the shock which he experienced when a boy, on hearing his medical attendant say, that his case was similar to that of a patient to whom he had just been called, and who had dropped dead. From that time my unhappy patient has been haunted by the dread of sudden death. That his fears are groundless, and that his medical attendant was not only cruelly incautious in the expression of his opinion, but also in error as to the real nature of the malady, is proved by the fact, that the patient was alive nearly twenty years after the period referred to, and that he then had no symptoms of organic disease of the heart.

Reverting again to the cases of actual hypertrophy, it may be observed, that the valvular disease which, in a large proportion of cases, is the primary cause of the hypertrophy, usually has its origin either in the rheumatic diathesis, or in that state of the blood and of the constitution generally which results from disease of the kidneys. With respect to renal disease, therefore, it is to be remarked, that the morbid condition of the blood induced by it has a double tendency to cause hypertrophy of the heart,—first, by exciting disease of the valves, and, secondly, by the impeded capillary circulation which it occasions, independently of valvular disease.

It is sufficiently obvious, that any one who undertakes the treatment of hypertrophy of the heart will require a knowledge of something more than the mere name and morbid anatomy of the disease; and that, without some insight into its pathology, he can scarcely avoid mischievous errors in practice. The probability of a cure in any case of hypertrophy is very slight. With reference to this question, Dr. Latham remarks, "The cure of hypertrophy of the heart does not look like a thing which is in its nature impossible; but I must confess, that, in the whole course of my experience I never yet met with a single instance in which I was perfectly satisfied that it was cured." The question may be simplified by a consideration of the various causes which give rise to this condition, and by inquiring, whether it be possible to remove these; for, since hypertrophy of the heart is a secondary change, and one, too, which evidently has a beneficial tendency, it is obvious, that, as I have before observed, any attempt to lessen the hypertrophy while its cause remains will certainly prove unsuccessful, and probably injurious.

First, then, with regard to disease of the valves, whether resulting from rheumatic or renal disease, or whether originating, as it sometimes, though rarely, does, from some obscure and unrecognised cause, there is, I believe, no question as to the fact, that valvular disease of the heart, when its extent and character are such as to have produced hypertrophy of the ventricle, is irremediable by any means which we have at our command. In such cases, therefore, the discriminating practitioner will not flatter either himself or his patient with the hope of a cure for the diseased valves, nor will he expect or even attempt to remove the hypertrophy which has resulted from the valvular disease.

The chief object of treatment in these cases is to prevent, so far as that is possible, an aggravation of the valvular disease, by guarding against the recurrence or the increase of its original exciting cause. It is beyond my present purpose to speak of the treatment of rheumatic diseases; and it is the less desirable that I should refer to this subject, since it has been so ably discussed in the Lumleian Lectures, which we have recently had the privilege to hear. The

treatment of renal disease, which, next to rheumatism, is the most frequent cause of valvular disease of the heart, will form the chief subject of my next lecture.

The observation which I have made with regard to the incurability of the hypertrophy, which results from disease or imperfection of the valves, applies with equal force to those cases of hypertrophy which result from narrowing, or dilatation, or extensive disease of the coats of the aorta and other large arteries, as well as to those which are dependent on malformations of the chest. In all these instances, the cause being a permanent one, it is neither probable nor desirable, that the hypertrophy which results from it should be less so. If there be any cases of hypertrophy which are curable, they are those which, being unconnected with disease of the valves or of the blood-vessels, are with reason supposed to result from that impeded capillary circulation which is dependent on an impure condition of the blood. The hypertrophy of the left ventricle which is connected with chronic renal disease, and that of the right ventricle which is frequently associated with chronic pulmonary disease, and more particularly with emphysema and chronic bronchitis, are instances of this. I have never met with a case of renal disease in which a cure was effected after the original malady had been so extensive, and of so long duration, as to give rise to hypertrophy of the left ventricle; nor do I know of any case of chronic bronchitis in which such an event has been observed with regard to the right ventricle; but there is good reason to believe that such a result is not only possible, but also within the bounds of probability. The attainment of this object must obviously be sought for by the use of measures directed to the removal of the primary disease, whether affecting the kidney or the lung; and it is likely—nay, certain—that the hypertrophy of the heart will disappear when its originating cause has ceased to operate. It may, perhaps, be thought, that, considering the intractable nature of those chronic diseases of the lung and kidney to which I have referred, to promise a cure of hypertrophy upon condition of their removal, is only—

> "To keep the word of promise to our ear,
> And break it to our hope."

And it must be confessed, that the prospect is not a cheering one. With respect to the special means for the removal or mitigation of the diseases in question, I will not here anticipate what I shall have to say in my next lecture as to the treatment of renal diseases; and, with regard to that distressing complication of emphysema with chronic bronchitis, there is, perhaps, only one step which affords a hope of great and permanent relief,—I mean, removal to a temperate and equable climate. There are few maladies which, in spite of the most careful and skilful attention, have a greater tendency than these to grow worse with every return of inclement weather; few, therefore, which so urgently require migration to a warmer and less changeable climate than any which can be had within the British islands.

It remains now for me to say a few words respecting the treatment of the hypertrophy which results from disease of the valves or of the arteries. I have repeatedly said, that this change in the muscular structure of the heart is reparative and beneficial in its tendency; but, like many analogous processes, it is attended with some injurious consequences. The chief of these appears to be the loss of that exact balance and adjustment of the power of the heart and of the bloodvessels which exists in the perfectly healthy body. It may readily be supposed, that, although the force of the hypertrophied ventricle is only just sufficient to overcome the resistance opposed to the passage of a due supply of blood when the body is at rest, the effect of any excitement, whether from bodily exertion or from mental emotion, may be, to call forth such violent contractions of the heart as will endanger the integrity of the vascular system; hence arise violent pain and throbbing in the chest and head, and sometimes hæmorrhage and apoplexy. To guard against such consequences, and especially in florid and plethoric subjects, it may be necessary to have recourse to some measures of depletion, to diminish the amount of food, to regulate the bowels, to abstract a small quantity of blood from the region of the heart by leeches or by cupping, and sometimes, perhaps, to take a few ounces of blood from the arm. But depletion must in these cases be practised with extreme caution; for there can be little doubt that the cases of

valvular disease in which the power of the heart is more than equal to the impediments which it has to overcome, are few in comparison with those in which the chief distress arises from the force of the heart being inadequate to its work; and as the first class of cases may suffer from depletion being carried too far, so the last are invariably rendered worse by any degree of depletion. When we consider how much the movements of a sound heart may be disturbed and hurried by loss of blood, we shall be at no loss to understand the still greater mischief which may result from anæmia, when the heart is in a state of hypertrophy. "Beware, then," these are the words of Dr. Latham, "in the management of hypertrophy of the heart,—beware, above all things, of bleeding your patients into paleness and poverty of blood."

When the impulse of the heart is excessive and painful, and when we are deterred by the consequences of anæmia from resorting to any measures of active depletion, the distressing symptoms may sometimes be relieved by a cautious use of sedatives and narcotics,—by digitalis, by henbane, by belladonna, or by aconite, and sometimes by opium, or by morphia. The effect of these medicines must be carefully watched, and they must be quickly suspended if they be found to disagree. In doubtful cases, they have this advantage over depletory measures, that, in general, any injurious effects which they occasion are less durable, and more easily counteracted.

The cases are not few, in which, when the valves are diseased, our object should be, rather to increase than to diminish the hypertrophy. When the skin is pallid, the circulation languid, and the heart's impulse feeble, great benefit is often derived from the exhibition of tonics, and from a nutritious but unstimulating diet. In such circumstances, the preparations of steel are often most efficacious in improving the quality of the bood, and thereby restoring vigour and steadiness to the heart's action.

That a patient, who is suffering from any form of valvular disease, should be cautioned to avoid everything which may tend to excite or to disturb the circulation, is so obvious as scarcely to require even this passing allusion.

If, now, we consider for a moment what aid, in the thera-

peutical management of hypertrophy of the heart, may be derived from pathological considerations, it will appear, that, although these are not entirely unsuggestive of positive means of cure, yet their chief value consists in the warning which they give against that blind and over-active practice which disregards the origin and the tendency of that which it attempts to remove. No one will be disposed to undervalue even this amount of assistance from pathology, who considers the mischievous consequences of rash and mistaken heroism in the treatment of disease.

LECTURE II.

In conducting the treatment of most of the diseases and injuries to which the human body is liable, it is a rule of great importance to ascertain first, by a consideration of the nature of the malady with which we have to deal, what is the object to be effected by our remedial measures, and then to keep this object steadily in view while we are employing the means for its accomplishment.

The surgeon who has the charge of a fractured leg is careful to bring the broken ends of the bones into contact, and to keep the limb steadily in a good position. No degree of attention to other matters connected with the management of the case would compensate for the neglect of this first object of the surgeon's care. In the management of wounds, whether they have been designedly produced during the performance of operations, or whether they are the result of accident, the main object, in most cases, is to keep the cut surfaces in contact, and then to interfere as little as may be with the reparative processes of nature. Again, if the case be one of acute inflammation of a joint, the surgeon is well aware, that to insure rest and an easy position for the diseased part is the first and indispensable point of treatment, without which all other means of cure would often be entirely fruitless. And so with reference to the treatment of internal disorders,—it is usually an object of the first importance to ascertain so much of the nature and the cause of a disease as will serve to give us a fixed purpose in the selection of our remedial measures. Take, for instance, a case of dyspepsia. A patient may swallow in succession every remedy which has ever been suggested for "the stomach and its difficulties;" and he may experience no relief until attention has been directed to the regulation of his diet, as to quantity, quality, and all other necessary details; then at once the cause of the disease being removed, the dyspeptic consequences often cease without any help from drugs.

An instance of another kind will serve to illustrate the importance of attending to the early history and the probable cause of a disease. Four years since, in April, 1849, I saw a lady, about 40 years of age, who had suffered for two years from what was supposed to be chronic rheumatism. Her limbs were weak, and her joints painful; the knee-joints, which were rather swollen, were especially the seat of pain and tenderness. She had formerly been accustomed to take active exercise, both on foot and on horseback; but for this she had long been quite incapacitated. She had taken the usual anti-rheumatic remedies without relief, and she was beginning to despair of recovery. The early history of the attack was this:—Two years before I saw her, she had a miscarriage, and was much exhausted by hæmorrhage. Soon after this she began to drink porter, as a means of restoring her lost strength; her appetite remained very bad, and she continued to take the porter as often as three or four times a day. The rheumatic pains and the weakness of the joints followed quickly upon the miscarriage. I had no opportunity to examine the urine. I told the patient, that I attributed her illness to the porter which she had been in the daily habit of taking. I thought that she had commenced taking this beverage before she had power to digest it; the consequences had been, continued loss of appetite, imperfect nutrition of the body, general weakness, and rheumatic pains. I explained to her, that I had frequently observed somewhat similar effects from the drinking of porter by poor women who have been much exhausted by lactation or by hæmorrhage. I advised the immediate discontinuance of the porter; in place of it, two or three glasses of sherry to be taken daily; and, since I anticipated a speedy disappearance of the symptoms after the removal of their cause, I desired that no medicine might be taken. The benefit of this change of regimen was soon apparent; the appetite returned, the strength increased, and, within about six weeks, the rheumatic symptoms had entirely disappeared. She has continued well until the present time, and is as active and energetic as before the attack.

This case in other hands might well have served the pur-

poses of systematic quackery. A strict attention to the patient's diet, and the simultaneous exhibition of globules, might have helped to establish a belief in the marvellous curative powers of infinitesimal doses of charcoal or of some other equally efficient agent. To us the case affords an illustration of the fact, that a serious chronic disease may be cured by *less* than an infinitesimal dose of medicine; in other words, that a disease will often cease with the removal of its cause.

Diseases of the Kidney.—And now, with regard to *renal diseases*, which I purpose to make the chief subject of the present lecture;—without some knowledge of their pathology it is, I think, scarcely possible to conduct their treatment with that steadiness of purpose which is essential for their successful management. It is not that the knowledge which we have acquired of the pathology of these diseases has been the means of suggesting any new remedies or new modes of treatment; but it is because it appears to give a reasonable explanation of those methods of cure which experience has sanctioned; it is because, by an examination of the urine, we have the means of distinguishing during the patient's lifetime those conditions of the kidney, which are remediable from others which are incurable:—it is for these reasons that the practitioner is interested to acquire such a knowledge of the pathology and diagnosis of renal diseases as will assist and encourage him in his efforts to cure them.

Among our poorer and uneducated patients the belief is very general, that what they call "the dropsy" is a disease rarely curable. When patients of this class ask, "Is it the dropsy, Sir?" an affirmative answer, without explanation, will almost invariably convey to them the idea of an incurable malady. They know nothing of the various causes of dropsy; they cannot distinguish one form of the disease from another; they have heard of some of their friends or acquaintance dying with dropsy; and they consequently fear the worst in every case. A gloomy prognosis, somewhat analogous to this, is often formed by those practitioners who apply to all cases of renal disease, with albuminous urine, the comprehensive term "Bright's disease," or

"Albuminuria," and who doubt the utility, or even the possibility, of a more exact diagnosis. The natural result of thus confounding, under one general name, the various conditions of the kidney which may be associated with albuminous urine, is to give to the incurable cases an undue preponderance in the mind, and the entire class of diseases comes to be considered as more intractable than it actually is. It is clearly the duty, as it is the interest, of the practitioner, to avail himself of all the means within his power, not merely to cure his patient, but also to foretell the probable results of a disease. The sick man will derive small comfort from hearing that the disease with which he is suffering is fatal in only a certain proportion of cases, unless he can receive some well-grounded assurance that his own case may be included in the list of those which are curable. A careful microscopical and chemical examination of the urine is essential for the attainment of accuracy, both in the diagnosis and prognosis of renal diseases.

In conducting the treatment of acute renal disease, with dropsy, and albuminous urine, it is very important to bear in mind, that, in a large proportion of cases, exposure to cold, a chill of the cutaneous surface, is the exciting cause of the attack. It is remarkable in how many instances, among hospital patients, the disease is attributed to working or standing in wet clothes. The cases which occur in connexion with scarlatina, although not invariably attributable to cold during, or even before, the convalescence, certainly are so in a large proportion of cases. The means of *preventing* renal disease and dropsy after scarlatina, are proper ventilation and dieting, and protection from cold until the cutaneous desquamation has ceased.

A consideration of the circumstances under which these attacks of acute renal disease occur, and of the appearances observable in the urine and in the kidneys, warrants the inference, that the renal changes are the result of an effort to eliminate some abnormal products, which have been conveyed to the kidneys by the blood. In cases of scarlatina, for instance, it is probable that exposure to cold has the effect of checking the process by which the fever-

poison, or ferment, or the product of fermentation, is eliminated from the skin, and that the morbid materials are then transferred to the kidney, in accordance with the well-known tendency to vicarious action of the skin and kidneys. An instructive illustration of this principle is afforded by the fact of several medicines, such as, for instance, the acetate or citrate of ammonia, acting either as diaphoretics or diuretics, according as the tendency is imparted to them by the skin being kept warm, or the contrary. These facts may assist our comprehension of what probably happens when a patient is exposed to cold too early after the onset of scarlatina. The work of elimination is then transferred from the skin to the kidney; and, as a result of this, there is, in most instances, a free desquamation of the renal epithelium, analogous, as it appears, to the cutaneous desquamation which follows the eruption of scarlatina. That the cells of renal epithelium which are thus freely shed do actually carry with them a portion of the abnormal material with which the blood is infected, is, I think, as nearly certain as any position which is chiefly based upon probable evidence can be. In the urine of a girl named Robinson, who died in King's College Hospital, in the year 1847, there were numerous cells of renal epithelium completely filled with crystals of oxalate of lime, while other cells contained oil; the urine was highly albuminous, and had in it many tube-casts. In this case, it is evident that the renal cells were conveying away abnormal products. The hypothesis which assumes, that the free shedding of epithelium from the uriniferous tubes is a means of eliminating morbid materials, is quite consistent with all the facts of the case, which cannot, I think, be said of any other explanation of the phenomena which has hitherto been suggested.

The process of renal desquamation, although primarily and essentially beneficial in its tendency, is not unproductive of mischief; for the secreting structures of the kidney being arranged in the form of minute tubes, which are of great length, and very tortuous, it is evident that the epithelial cells which are thrown off cannot escape with that rapidity with which the epidermic scales are cast off from the cutaneous surface; the consequence is, that the cells, and the fibrinous materials which accompany them, frequently

fill, distend, and obstruct the tubes, and thus greatly impede, if they do not entirely arrest, the secretory process. And thus it happens, that many tubes being rendered inefficient, either for the further elimination of the morbid products, or for the discharge of their normal excretory functions, the urine is greatly diminished in quantity, and the patient may die from some of the secondary consequences of an accumulation of poisonous excrement in the blood.

To illustrate these phenomena by an analogy, I would remark, that the relief from urgent symptoms which is afforded by the appearance of the small-pox eruption, is evidence, as we suppose, that some mysterious poison has been thrown from the blood into the skin. The non-appearance of the eruption is often associated with the most rapidly-fatal symptoms; and, on the other hand, the patient may be killed by the very abundance of that eruptive process which nature intended, and which was, indeed, essential for his preservation.

In like manner, it is a matter of almost daily observation, that those cases of acute dropsy with albuminous urine are, in general, most certainly and easily cured, in which there is a copious renal desquamation; while the most rapidly-fatal case which I have met with, was one in which there was neither desquamation nor fibrinous effusion into the kidney-tubes.

It must be remembered, that, as the eruption of small-pox may be scanty, in consequence of the blood being infected, as we suppose, by only a small amount of the specific poison, or in consequence of the blood being changed by the same poison in a less degree than ordinary, so the degree of renal desquamation may be slight from an analogous cause. In both cases, we draw this conclusion from the observation of similar facts,—namely, the comparative mildness of the general symptoms. These doctrines are obviously, in a certain degree, hypothetical; but any one who rejects them merely because they are hypothetical, and not because they are inconsistent with established facts, can scarcely have reflected as he ought to do upon the fact, that it is upon probable and not upon demonstrative evidence

that we are often bound to act,—if we will act at all,—not merely in the practice of medicine, but in the most important concerns of our daily life.

With regard to the duration of an acute renal attack, it is to be observed, that very much depends on the nature of the cause. As an illustration of this, I may mention, that the renal disease which occurs in connexion with cholera, often terminates within two or three days from its commencement; while the duration of that which results from scarlatina is rarely less than the same number of weeks. Yet, in both instances, the local phenomena are precisely similar. The prognosis, therefore, is not to be based exclusively upon the condition of the urine.

In thus briefly passing in review the leading facts in the pathological history of that form of acute renal disease which is always associated with albuminous urine, and in most cases with dropsy, my purpose has been to indicate the primary object of treatment, which is, *to guard against exposure to cold.* As exposure to cold, whether acting alone, or in conjunction with other influences, is among the most frequent *exciting causes* of inflammation of the kidney, so there is nothing which has a greater tendency to perpetuate the disease, and to render it incurable. Attention to this point of treatment is as indispensable for the patient's welfare as a steady position for a broken bone, or rest for an inflamed knee-joint. I am confident that the neglect of this precaution has been the means of converting more acute and curable attacks of renal disease into a chronic and incurable malady than all other causes combined. Within the last few months several instances have come to my knowledge, in which the life of a patient suffering from acute renal dropsy has been sacrificed, by his being permitted to go out, day after day, to visit his medical attendant.

In a cold season, confinement to the bed is absolutely necessary for the patient's well-being and safety; and, even in warm weather, it appears to favour and hasten the recovery. Rest in the horizontal posture tends to quiet and equalise the circulation; and the uniform warm temperature of the bed favours the action of the skin, and prevents the

risk of a check to the perspiration. The result is, that the dropsy quickly subsides, and the urine becomes more copious and less albuminous.

The diet should be scanty; for the patient has little desire for food, and the digestive powers are much impaired. The passage into the blood of imperfectly-digested food will surely irritate the kidneys; the urine is often more albuminous after meals, and I once saw a return of hæmaturia follow a meal of potatoes. Alcoholic drinks should be prohibited, unless required for some special purpose.

Having secured the two primary objects of treatment—a moderate uniform temperature, and a scanty diet—we must be guided by the nature and urgency of the symptoms in the choice of additional remedies. In every case it is desirable to promote the action of the skin and bowels; the first by diaphoretic medicines and the hot air bath, and the latter by saline aperients, or by the compound jalap powder. The free action of these great excretory surfaces is a very efficient means by which to lessen the injurious over-work of the kidneys. It scarcely need be said, that however scanty may be the urine, no stimulating diuretic is to be given; indeed, the more scanty the secretion, the more injurious would be the effect of any irritating drug. This is so obvious, from a consideration of the pathology of the disease, as to require not a word of comment or explanation. During the convalescence the urine is usually twice as abundant as in health, in consequence, probably, of the naturally diuretic influence of the urea and other urinary products which, having accumulated in the blood during the acute stage of the disease, find a free outlet when that stage is passed. A practitioner who has been perseveringly giving diuretics, and who is ignorant of this pathological fact, will be likely to attribute, to the influence of his drugs, this abundant flow of urine, which is, in fact, only a natural and a spontaneous diuresis. It will be understood, that, in deprecating the use of diuretics, I am speaking only with reference to cases of *acute* renal disease. When the disease has become chronic, and when an excessive dropsical accumulation constitutes the most distressing and dangerous symptom which other means have failed to remove, "we must incur the

risk of one possible and contingent evil for the chance of obtaining what, if obtained, is a certain and positive benefit; we must endeavour to remove the dropsical accumulation by means of diuretics, whether these accelerate the progress of the disease in the kidney or not." (a) In such circumstances the hope of entirely removing the renal disease has been abandoned, and the chief object of treatment is to relieve the most urgent symptoms, and to prolong life to the utmost.

When the progress of acute nephritis has been favourable, when no serious secondary complications have arisen, or when these have subsided, and when the urine is becoming more abundant, and of a better quality, there will be no further necessity for active treatment; the patient may gradually return to his ordinary diet, and the lost colour may be more quickly restored to his blood by the use of some of the preparations of iron, either the citrate, or the sulphate, or the muriated tincture, with the infusion of calumba. At this period of the case, that is, during the convalescence, there will be great need for care and firmness on the part of the Medical attendant, to guard his patient against the consequences of any imprudent steps which he may be inclined to take, under the belief that the disease is at an end before it is really so. When the dropsy and the other distressing symptoms have disappeared, and when the appetite returns, it is sometimes very difficult to convince a patient, that there exists any valid reason for confining him to the house; and yet, upon the rigid enforcement of this necessary piece of discipline will often hang the decision of the momentous question,—whether there is to be a speedy and complete recovery, or whether a protracted convalescence, or, perhaps, a fatal disorganisation of the kidney. The simplest and safest rule is, to confine the patient within doors until the urine is free from albumen. In the winter season this rule should be made absolute. In warm weather it may sometimes be cautiously relaxed with advantage, but always under strict observation of its effects upon the urine.

A patient, who rebels against the restrictions upon the

(a) Dr. Watson's "Lectures on the Practice of Physic."

time for his first going out and returning to his ordinary diet, will almost certainly bring on a relapse, with a diminished secretion of urine, an increased proportion of albumen, and a return of dropsy. Such rebellion is not uncommon, and especially among our poorer patients; but we must at any rate discharge our own duty by such words of warning and remonstrance as may seem best adapted to the circumstances of each case. That the skin should be protected by flannel, and that the clothing in general should be warm when the patient first exposes himself to the air, are points so obvious as to require no comment.

Suppose, now that the patient has acted upon our advice in every minute particular,—we have kept him within doors for a period of perhaps two months; every other symptom has disappeared; but the urine, although natural in colour, density, and quantity, is still albuminous. We may try the effect of gallic acid, and this may diminish the amount of albumen; but still the urine may continue to be albuminous in a very considerable degree. We shall now feel some anxiety as to the results of a microscopical examination of the urine, for the risk of serious structural change in the kidney is in proportion to the duration of the albuminuria. In these circumstances, the most favourable appearances in the urine are the natural colour and clearness, and freedom from sediment, or perhaps a slight cloudy deposit, in which are found some small, transparent casts.(a) The appearances which are of unfavourable import are, first, a cloudy sediment as before, but composed of fibrinous casts, many of which contain oil, either in the form of scattered globules, or in epithelial cells, some oil-containing cells being also scattered over the field; second, the sediment may be more abundant and heavier, and, when examined microscopically, it is found to consist partly of renal epithelium in a more or less disintegrated state, partly of large wax-like casts, with very sharp, well-defined outlines, and partly of small cells, which show compound nuclei on the addition of acetic acid,—in short, having the micro-

(a) These and other forms of tube-casts referred to in this lecture are represented by wood-cut illustrations in the Author's treatise "On the Diseases of the Kidney."

scopical characters of pus-cells; many of these cells may be scattered, while others are entangled in the larger fibrinous coats before mentioned. The aspect of the case will be more serious in proportion to the abundance of either of the two last-mentioned forms of deposit, viz., the oily and the large fibrinous or wax-like casts with epithelial *débris* and puriform cells. Even when these more formidable appearances are absent, the persistence of a large quantity of albumen in the urine beyond a period of three months from the commencement of the disease is a sufficient reason for anxiety.

At this period of the disease it may be well to remove the patient into the country and to the sea-side, if he has been resident in a town, and to allow him to take a daily airing if the season will permit. So long as the albumen continues to diminish, we may rest satisfied that the case is going on favourably; but if, on the contrary, the albumen does not decrease, and if some of those unfavourable microscopical appearances which I have just now mentioned present themselves, it will be right to urge upon those who have the means of taking a sea voyage to do so as early as possible. There is probably no remedial measure which is more efficient than this when an attack of renal disease, which has been acute, threatens to become a permanent chronic malady. The length and the direction of the voyage must be influenced in a great degree by the circumstances of the patient. It will not at any time be desirable that he should go far northward, and in the winter season it will obviously be preferable for him to proceed in a southerly direction. Dr. Christison (a) has published the case of a medical practitioner, who, after having had albuminous urine for a period of four months, sailed for the Cape of Good Hope in October, 1845. He afterwards returned to this country, and wrote to Dr. Christison thus: "As soon as I got into warm weather, and out of the turmoil of professional business, I began to improve in health and strength, gathered flesh, got colour, and ere arriving at the Cape was stouter than I had been for years.

(a) *Edinburgh Monthly Journal*, June, 1851.

After using the gallic acid for a few days at sea, I had no appearance of albuminuria, nor has there been any return of it since. I travelled about 1500 miles on horseback through the Cape colony, and had several long journeys, one of them to the extent of eighty-eight miles in one day, without suffering any ill consequences." Dr. Christison adds, that, on returning to this country, he resumed his practice, and he continues at this time (March, 1851, six years after his illness) an active, vigorous, healthy, country practitioner.

I must not omit to state, that he had taken gallic acid for some weeks before he sailed, and the albumen had diminished under its use; but the acid probably contributed little to the rapid improvement which he experienced during the first few days of his being at sea.

I have met with another case in which a long sea-voyage entirely removed an excessive dropsical accumulation after it had existed for nearly a year. The patient was the wife of a soldier stationed at Ceylon. Dropsy, with high-coloured and scanty urine, came on in September, 1845; the swelling gradually increased, and the integuments of the legs became so much distended that she had them scarified, and they discharged copiously. She appeared to grow worse in every respect until the month of August in the following year,—that is, about eleven months after the commencement of her illness; when, her husband's regiment having been ordered home, she was compelled to embark. The vessel in which she sailed had no surgeon on board, and she took no medicine. After she had recovered from the sea-sickness, she found that her health was improving. When they reached the Cape, the dropsy was sensibly less. The improvement continued; and when she arrived in England, after a voyage of four months and a-half, the dropsy had entirely disappeared, and she felt perfectly well. She continued in the enjoyment of good health, working as a washerwoman, until the month of October, 1847, when she was again seized with dropsy, occasioned, as she believed, by exposure to cold after being heated at her work. She was admitted into King's College Hospital on the 28th of October; and it was during her stay there that I obtained from her the particu-

lars of the previous history. At the time of her admission, she had general anasarca and ascites; and the urine was scanty, high-coloured, and very albuminous. The urine afterwards became pale, but the albumen did not diminish. She continued to grow worse, left the hospital at the end of January, 1848, and died at her own home two months afterwards.

The doubt which must ever exist, as to whether the renal disease had been entirely removed when she arrived in England, scarcely lessens the evidence which the history of the case affords, as to the surprisingly beneficial influence of the voyage, both upon the dropsy and upon the general health of the patient; and this, too, in circumstances apparently the most unfavourable.

In another case—that of a late distinguished medical student of King's College—the urine had been albuminous for a period of several months when I first examined it, in March, 1852. It was then very albuminous, sp. gr. 1015, of the natural colour, and deposited a slight cloud, which contained a few small waxy casts, on one of which were some cells, containing oil. There was sufficient indication that the renal disease was not in a very advanced stage. He was suffering chiefly from debility, with emaciation; he had the general aspect of a tubercular tendency, but there were no signs of disease within the chest. He was advised by Dr. Todd and myself to take a voyage; and, accordingly, he obtained an appointment as surgeon to a sailing vessel, which was bound for Canada. He sailed from Gravesend on the 10th of June, at which time, as he afterwards reported to me, the state of his urine was much the same as when I examined it in March. At first, he suffered much from seasickness; but, after he had recovered from this, about the 5th of July, he tested his urine for the first time since he went on board, and found it quite free from albumen. It continued so during the rest of the voyage. He improved considerably in health and strength, and gained flesh until he and all on board were subjected to great privation from the failure of provisions and water. For about twenty days he had no fresh meat, but subsisted chiefly on bread, salt-butter, rice, preserved fish, peas, and bad potatoes, with

only three pints of dirty water per day, two of which went to the cook, so that he had only one pint for drinking. The consequences of this diet were very disastrous to our poor patient; diarrhœa and sickness came on, and from that time he gradually declined. He returned to England in a steamer; and, on his passage home, he found that his urine was again slightly coagulable. On the 12th of October, he sent me a specimen, which was of low density, 1010, but only cloudy with heat and nitric acid; and I could detect nothing with the microscope. He continued to suffer from diarrhœa and emaciation, until he became a mere skeleton; and he died in November of last year. He remained in the country after his return from Canada, and I did not see him; but it was the opinion of those who did, that tubercular mesenteric disease was the cause of his death.

The fact in this sad history which is to my present purpose is, that the urine which had been constantly and highly albuminous for a period of many months, ceased to be so after the patient had been only three weeks at sea, a result which it is improbable that any other means could have accomplished; and, although at a later period, the urine again became slightly coagulable, there was no reason to suppose that disease of the kidney had any important share in bringing about the fatal termination. The severe privation appears rather to have developed that tubercular disease, the seeds of which very probably existed before he left England. His own words, in writing to me after his return, were, "I certainly improved at sea, and I have myself no doubt, that but for the untoward events of the latter part of the voyage, I should have returned very much benefited."

Before concluding this sketch of the treatment of renal diseases, I am desirous to say a few words with reference to one class of those secondary diseases which not unfrequently occur during the progress of the primary malady. Among the most frequent and formidable of these secondary affections, are those which are referrible to the nervous centres—headache, delirium, convulsions, or drowsiness in a greater or less degree, and not unfrequently passing into coma. These alarming symptoms are, doubtless, occasioned, either directly or indirectly, by the accumulation in the blood of

some one or more of the constituents of the urine. It is probable that the retention in the blood of any one of the constituents of the urine would be attended with injurious consequences. Urea being the most abundant of the urinary solids, and having been detected in large quantities, both in the blood and in the effused liquids of patients whose urine is scanty from renal disease, it has very commonly been assumed, that this is the noxious agent; but a doubt has been thrown upon this, by the fact frequently observed, that there appears to be no proportion between the severity of the nervous symptoms, and the amount of urea in the blood. Hence it has been inferred, that something more than an accumulation of urea must be required for the production of these nervous symptoms; and Frerichs(a) has attempted to prove, that the carbonate of ammonia which results from the decomposition of urea is the immediate cause of the convulsions and the coma. The experiments of Frerichs show that the injection of carbonate of ammonia into the veins of a dog is followed by convulsions and insensibility, the latter continuing until the ammonia has escaped from the blood, chiefly, as he believes, by pulmonary exhalation. He states, too, that he has detected ammonia in the air expired by his patients during the continuance of uræmic symptoms; but it can scarcely, I think, be admitted, that his observations warrant the conclusion, that ammonia in the blood is either the sole or the chief cause of those symptoms which have been commonly observed in connexion with an imperfect excretion of urine.

The *post-mortem* appearances in the brain are rarely such as tend to throw any light upon the symptoms. In a small proportion of cases, actual hæmorrhage is found to have occurred either in the substance or on the surface of the brain, but in most instances a doubtful congestion, or an equally doubtful increase of serosity, is the only appearance to be noted. Unequivocal traces of inflammation are rarely found. When the cerebral symptoms have supervened upon a long-continued chronic form of renal disease, an appearance of less than the usual amount of blood in the brain,

(a) "Die Bright'sche Nierenkrankheit."

and of a lighter hue of the grey matter, is quite as common as the opposite condition. In such cases, Dr. Watson has suggested, that "the pale and watery condition to which the blood is at last reduced may have something to do with the stupor and coma;" and he compares these symptoms with those of spurious hydrocephalus, which occur in conjunction with a similar defect of hæmatosin. The occurrence of convulsions or coma in connexion with disease of the kidney is always sufficiently alarming; but the prognosis will be greatly influenced by the information which we can obtain from the history of the case, and particularly from the examination of the urine, as to the nature and the stage of the renal disease. If we can ascertain that the cerebral symptoms are connected with a simple acute inflammatory form of renal disease, we may entertain a reasonable hope that prompt treatment will entirely remove these formidable symptoms; but if the evidence tend to show that the renal disease is of long standing, whether it be of the nature of fatty degeneration or an advanced stage of some inflammatory condition of the kidney, there will be too much reason to fear, that in spite of all our efforts drowsiness or convulsions will speedily pass into fatal coma. An accurate diagnosis is of importance, since the active treatment which is essential for the safety of a patient in the first-mentioned circumstances, if applied without discrimination in cases of chronic renal disease, and when the blood is thin and impoverished, might rather hasten than retard the fatal result.

When the cerebral symptoms, to which I have alluded —headache, drowsiness, coma, or convulsions—are consequent upon an acute inflammation of the kidneys, such as occurs in connexion with scarlatina, or after exposure to cold, it will generally be found that the urine is extremely scanty; and if the patient be conscious, he will sometimes complain of severe pain in the region of the kidneys. The first object of treatment is to relieve the extreme congestion of the kidneys, which, being done, their secretion will become more abundant, and the cerebral symptoms will cease with the removal of their cause. I believe that no method of treatment is so efficient for the attainment of this object as the abstraction of a moderate quantity of

blood by cupping over each kidney. In three cases of the kind which have occurred to myself, cases in which convulsions were succeeded by insensibility, the operation of cupping was quickly followed by an increased secretion of urine, the speedy cessation of all serious cerebral symptoms, and, ultimately, complete recovery. It will always be desirable to assist the process of purifying the blood by exciting free action of the bowels, either by means of elaterium, or by the compound jalap powder, with which, perhaps, a few grains of calomel may sometimes be combined. At the same time, too, it will be well to keep the head cool, and, if the symptoms are urgent and persistent, to apply a cold lotion, or iced water, to the shaved scalp. The error into which any one is most likely to fall is that of directing his attention and his remedial measures too exclusively to the head, without reference to the distant origin and cause of the symptoms. A better instance could scarcely be adduced in illustration of the importance and the intimacy of the relationship between therapeutics and pathology. If the patient be in a state of stupor when he first comes under our observation, if dropsy be not present, and if we have no accurate history of the case, the diagnosis may be attended with considerable difficulty. In such circumstances, it is a very safe rule not to prescribe for the patient until the urine has been examined. I once had a case of the kind in my dispensary practice. The patient was a woman, 54 years of age. At my first visit, I found her in a state of semi-stupor, with a wild distracted look, and a brown, dry tongue. The case had very much the aspect of continued fever; but I learned that she had been seized with a convulsive fit a few hours before I saw her; that there had been slight dropsical swelling during the previous fortnight, and that the urine had been scanty and high-coloured. On examination of the urine, I ascertained, not only that it was highly albuminous, but also that it contained numerous *epithelial casts*, as well as scattered *entire cells of renal epithelium*. From these appearances, I inferred that the disease was acute, and of recent origin. The operation of cupping on the loins was quickly followed by an increased secretion of urine and by the disappearance of the cerebral symptoms. She ulti-

mately lost every trace of her renal disease, and the urine became quite normal.

I have already intimated, that the occurrence of coma, or convulsions, in the advanced stages of *chronic* disease of the kidney, is a sign of fearful import. When drowsiness has gradually passed into complete coma, it is seldom that a patient can be brought out of it; for a large proportion of the secreting tissue of the kidney is now permanently disorganized, and we can do little to remedy so desperate a condition.

If we can excite copious discharges from the mucous membrane of the bowels, we shall, by that means, eliminate some of the excreta which are poisoning the blood, for urea has been detected in the watery stools produced by elaterium. There is not much to be hoped for from cupping over the kidneys, but dry cupping can certainly do no harm; and, if the patient's appearance be not decidedly anæmic, we may venture to abstract a small quantity of blood; but we shall do this with much caution, if we bear in mind Dr. Watson's suggestion,—sanctioned, too, by the high authority of Dr. Todd,—that an impoverished condition of the blood may favour the tendency to coma and the poisonous action of urea. Cold lotions may be applied to the head when the scalp is hot, and blisters when the skin is cool. Since, in any case, it is a more hopeful task to prevent drowsiness from passing into coma, than to bring a patient out of a comatose condition when once he has fallen into it, it is important to keep a watchful eye upon the premonitory symptoms. In some cases, it appears that the most successful mode of keeping them in check is to give a nutritious but unstimulating diet, with moderate doses of steel, and, at the same time, to keep up a free action of the bowels.

There is yet one point upon which I will say a few words. It has frequently been asked, whether it is possible that the kidney can completely recover from an acute inflammatory attack? The most reasonable reply to this question is, that, if the disease comes early under treatment and yields to the means employed within a moderate time, there is reason to believe that the recovery may be complete and permanent. It is likely that, here and there, a tube or a Malpighian

body has been spoiled, the first by the destruction of its epithelial lining, and the second by the rupture of its vessels; but no mischief will probably result from these changes, beyond the wasting of the parts immediately affected. An attack of desquamative inflammation leaves no morbid condition of the kidney which will be permanent, or productive of further mischief, unless the disease has been so long continued as to have reduced the tubes, by the destruction of their epithelial lining, to that denuded condition which favours their growth into cysts. In one case, which terminated fatally by cerebral hæmorrhage, after the renal disease had existed for a period of at least six months, the cystic growth was commencing in the kidney. The possibility of such an occurrence is one among many reasons for the careful management of renal diseases at their very commencement.

It is obvious, that, although the kidney may have recovered from an attack of inflammation, it will, like any other organ, be liable to a recurrence of the disease from a repetition of its exciting cause. A patient, therefore, who has suffered from such an attack should be cautioned to avoid all those influences which have a known tendency to act injuriously upon the kidney.

I think, Sir, that, with reference to diseases of the kidney, it can scarcely be denied, that pathological considerations are essential, as well for their successful therapeutical management, as for enabling the physician to predict with probability the consequences of the disease and of his treatment.

LECTURE III.

I am desirous, in this and the three succeeding lectures, to direct your attention to a very numerous and a very interesting class of cases which come within the comprehensive denomination of "nervous diseases." In their extreme results, many of the disorders to which I refer may end in epilepsy, delirium, insanity, or paralysis. I shall have frequent occasion to allude to these more serious forms of nervous disease; but my chief object will be to describe those slighter derangements of the nervous system out of which, in a certain proportion of cases, the more formidable diseases are gradually developed.

My experience of these cases has been obtained partly in the out-patient room and in the wards of King's College Hospital, and partly in the discharge of my duties as Physician to the public dispensary in Carey-street. For a period of six years, during which I held the last-mentioned appointment, I not only saw a large number of poor patients at the dispensary, as we see the out-patients at the hospital, but I visited at their own homes about 500 patients annually. This kind of work afforded me abundant opportunities for observing the habits and the habitations of the poor, and for obtaining a knowledge and a record of many of their family histories.

The general results of my observations with reference to the class of diseases to which I have alluded are: 1st. That in a large proportion of cases the more formidable derangements of the nervous system have their origin in some form of mental shock or anxiety. 2nd. When the nature and the origin of these nervous disorders are detected sufficiently early, the more serious forms of disease may often be prevented, and the slighter derangements entirely removed. 3rd. The method of treatment best adapted for the prevention and the cure of the diseases in question admits of some variation in different cases, according to the nature and the

cause of the symptoms; but there is one remedy which, when given in the mode and with the precautions which I shall hereafter indicate, is more efficacious than all others combined. That remedy is opium. And, with reference to this point, with reference, too, to the fact, that the course of lectures which I have been appointed to deliver is one on materia medica, I might have designated this concluding portion of the series thus: "On the Influence of Opium as a Means of Preventing and Removing some of the Injurious Consequences of Over-work and Anxiety."

It will be apparent to most of those who hear me, that there is nothing in this general statement of results which is not already recognised and acted upon by the Profession. It is not on the ground of novelty that I venture to occupy your time by a record of any observations of my own; but I do so in the hope that a description of the class of cases to which I have referred may excite an interest in the minds of some of the younger members of our Profession, who, perhaps, are about to commence, or are already engaged in, the kind of work which has occupied so much of my own time, —I mean that of prescribing for dispensary patients and for hospital out-patients. There is no class of cases which will better serve to illustrate the intimate connexion between correct pathology and successful therapeutics; nor any in which an erroneous pathology is more frequently attended with practical ill consequences. Many erroneous notions respecting the pathology and the treatment of nervous diseases have been clearly shown to be such within a comparatively recent period; and I cannot refrain from alluding particularly to the Lumleian Lectures, by Dr. Todd,—the first series on Convulsive Diseases, and the second on Delirium and Coma,—as among the most valuable contributions to the very important subjects of which they treat.(a)

It appears to me that I shall best succeed in conveying a distinct idea of the class of diseases to which I am desirous to direct your attention, by giving first a brief abstract of a few cases selected with a view to exemplify their chief

(a) These Lectures are published in the *Medical Gazette* for 1849 and 1850.

varieties. I shall afterwards refer, at greater length, to the principal causes and consequences of the disordered states in question; I shall offer some suggestions as to their pathological interpretation; and finally, I shall have to speak of the treatment. I wish it to be understood, *in limine*, that I am not about to occupy your time by a description of rare and curious cases which have an interest only for the scientific pathologist. The maladies to which I refer are among the most numerous with which the practitioner has to deal; they involve a great amount of mental and bodily suffering; although, perhaps, more common among the lower classes of society, yet they do not spare the highest; and although in the advanced stages they are sometimes very intractable, yet, in their earlier periods, they are often singularly amenable to treatment. It will, therefore, be apparent, that the diseases in question possess a high degree of interest, and that they claim our best attention.

Case 1.—The first case is that of a woman, L. H——, 41 years of age, whom I first saw at the dispensary, on the 6th January, 1851. She had been a widow eighteen months, and, for a long time before her widowhood, she had suffered much from anxiety, in consequence of the intemperate habits of her husband, who had squandered his money, and failed in business. For many months before I saw her she could not sleep without being disturbed by frightful dreams and spectral visions. Her friends told her that she talked as much in her sleep as when she was awake; she drank neither beer nor spirits. She had friends who were well off, so that she had never been in want; but her appetite was extremely bad, and she suffered much from flatulence and constipation. She had a painful sense of pressure on the top of the head, and her countenance was expressive of great anxiety. She had, at different times, been under the care of three medical men; one had called her disease tic-douloureux; another, she said, spoke of it as ague; and a third attributed her sufferings to inaction of the liver. She had been cupped and leeched, and several times blistered, but without benefit.

It appeared to me, that trouble and anxiety had disturbed her sleep, and taken away her appetite for food; and as there was no evidence of any organic disease, I antici-

pated great relief from a few nights of quiet sleep, if by any means that could be obtained. With this view, on the 6th of January, I ordered five grains of the compound soap pill to be taken every night, and a mixture, containing rhubarb and magnesia, with peppermint-water, to counteract the constipating effect of the opium. I told her to walk out daily, and I gave her hopes of speedy amendment.

She came to me on the 13th of January, and said, that she had slept better the first night after taking the pill, and on the second night still better; she had rapidly improved in every respect, and had a bright and cheerful expression of countenance. To continue the medicine.

My last report of her is dated the 17th January, and it is as follows:—She considers herself quite well; she sleeps well without dreaming; the sense of weight on the head is gone; her appetite is good, and she has no discomfort after eating; she "feels quite a different person."

The simple explanation of this cure appears to be, that ten nights of sound sleep had sufficed to remove the wearying effects of many months of anxiety and restlessness. With reference to the question of prognosis, it is important to observe, that the chief cause of her troubles had long ceased to exist; her husband's intemperance, his misfortunes, and his death, had occurred many months before; what she needed was something which would, as it were, break the habit of dreaming restlessness, and opium has a marvellous power of effecting this object. This case is a type of a large number which have come under my observation, and in which the effects of a similar plan of treatment have been equally satisfactory. I will next give a few particulars of a case which differs from the preceding in the important fact, that the original cause of the patient's anxiety and illness was in active operation while he was under my observation, and consequently the treatment, although at first very successful, yet did not avail to prevent the development of confirmed epilepsy.

Case 2.—On the 17th March, 1851, I was called to see a merchant's clerk, J. R. S., aged about 28 years. I was told, that during the last three days he had been seized with fits of violent delirium. When I arrived, he was quiet, and

answered questions rationally. His skin was cool and moist; his pulse was moderately quick and soft, and his pupils were natural. I found that his head had been shaved, his temples leeched, and his neck blistered, and he had been kept on a rigidly low diet. The result of this treatment had been an increase in the violence of the delirium. I ascertained, not only from his family, but also from his employers, who were friends of my own, that he was a very well conducted man, and of strictly temperate habits. His wife told me, that for several weeks before his illness his nights had been very disturbed; that in his sleep he had talked almost incessantly of his business; that in the mornings he appeared unrefreshed; that his appetite had been bad, and he had been gradually losing strength. When I inquired if he had been in distress or anxiety, I was, at that time, told that the fatiguing and harassing nature of his employment was the only cause for anxiety of which his family were aware. It seemed evident, that the case should be treated as one of delirium from exhaustion; and accordingly I ordered him to take a mutton chop with a glass of porter, and at bed-time a draught containing forty minims of tincture of opium. The next day, I found that he had slept well, and there had been no return of delirium. He rapidly recovered, and at the end of a week he returned to his employment.

About three weeks after he had returned to his work, I was asked to see him at his employer's warehouse, and I found that he had suddenly fallen in an epileptic fit, while engaged in washing his hands. I again inquired particularly for causes of anxiety, and again the only cause assigned by his family was the fatigue of his work. I saw him again in May, when I found that his nights were still much disturbed by dreams, and he was occasionally light-headed. I gave him strict directions as to diet and the general management of himself, advised him to take the compound soap pill occasionally at night, and to change his occupation, if he really believed that the fatigue of it was the occasion of his restlessness. The last piece of advice he had a natural unwillingness to adopt. He came to me again the last week in October, and told me that he had that morning been seized with a fit in the street, and further,

that since he last saw me, he had had five or six fits, but on each occasion, except the last, he was in bed when seized. His wife told me, that his nights were constantly disturbed by dreams; that he talked, moaned, and frequently called out in his sleep. He was now afraid that he should lose his situation.

It was not until the month of February, 1852, nearly a year after I first saw the patient, that I ascertained the real cause of his anxiety. His father then told me that my patient's wife was a drunkard, and that when intoxicated she was extremely violent; that she had more than once threatened to stab her husband, and on one occasion she had actually wounded his hand with a knife. My informant had from the first been aware that this was the cause of his son's restlessness and misery; but he had been unwilling to speak of it until matters were becoming desperate. The fits continued, and the poor fellow was soon compelled to resign his situation.

It is evident, that the information thus tardily given is the central fact in the history of this case, and that it was essential for the complete explanation of the phenomena. I had been assured by the patient's employers, that his work was not such as could injure any man of ordinary strength; so that there seemed no satisfactory explanation of his continued suffering until this part of his sad domestic history was revealed. The next case is one in which some very distressing nervous symptoms speedily yielded to treatment.

Case 3.—A shoemaker, J. B., 31 years of age, came to the hospital on the 15th of January, 1852, and stated, that about ten months before, he, his wife, and five children had typhus fever. They all recovered; but at the same time he lost, from the same disease, a brother, (who died in the bed next to his own at the Fever Hospital,) his mother, and his wife's father. Since this accumulation of illness and anxiety, he "has been unable to rally himself;" has felt melancholy; has experienced a sense of weight and noise in his head, and dimness of sight; he has had "shocking dreams," so that he has dreaded to go to sleep; when walking in the street he is often seized with dizziness, so that he would

fall if he did not lean against the wall for support. He has a dread of sudden death. He is of middle height, well nourished, but with a very anxious expression of countenance. He works twelve or fourteen hours a day at his business, and usually has a walk daily. He says that he never was addicted to drink, and he presents no indications of intemperance; his appetite is good, and his tongue clean. He attributes his nervous condition to the fever, and to the mental anguish which he suffered; particularly, as he says, when, on going to the Fever Hospital, he left his wife and all his children ill at home.

On the 15th January, I ordered pil. saponis co. gr. v. om. n., and a mixture containing rhubarb, carbonate of ammonia, and peppermint-water, twice a day, to counteract the constipating effect of the opium.

On the 20th January the report is, that he begins to sleep better, and his countenance is somewhat improved. Rep.

24th.—He does not know when he has slept so well as he did last night, he feels better, has less dread, and less sense of weight, and noise in the head. Rep.

On the 12th of February the report is, that he has been going on very well, and is improving in every respect. He has taken no opiate pill for the last ten days, but he has slept well all night without unpleasant dreams; the sense of weight on the head is gone, and his spirits are good; he has less noise in the ears, and his sight is improved. Since the 27th of January he has taken, Ferri sulph. gr. ii., infusi quassiæ ℥i., ter die. To continue this.

Some days after the last report I met him in the street, when he told me that he was quite well, and had not thought it necessary to come again to the hospital.

The phenomena of this case admit, as I think, of no better explanation than this,—that, to use the patient's own words, "he had been unable to rally himself" from the state into which he was thrown by the conjoint influence of the fever and intense mental anxiety. An opiate pill, taken for about eighteen nights in succession, soon procured for him sound sleep, unbroken by the horrid dreams which had distressed him for the previous ten months; he was refreshed by this sleep, and quickly regained his usual state of health.

While I was engaged in writing this lecture, I called on this patient, and ascertained that he still suffers in some degree from a sense of weight and noise in the head, and he looks somewhat anxious, but his sight is good; and, although he has had much anxiety from the death of his two children, he has never relapsed into the nervous, restless state, which he presented when first he came under my observation.

The next case will serve as an illustration of the terrible results which may ensue when the state of dreaming restlessness which existed in the preceding case is permitted to continue unchecked.

Case 4.—A. S., a warehouseman in a printing-office, 29 years of age, came to the hospital on the 5th July, 1851, and stated, that he was subject to epileptic fits. I perceived that his intellect was confused, and his memory bad, and I requested him, when he next came, to bring his wife with him. I found that she was a very intelligent woman, and it was from her that I obtained the chief part of the following remarkable history. Her husband has always been a sober and well-conducted man, and he never had any serious illness until he became subject to fits, the origin of which she thus accounts for. About seven years ago, he was returning with his wife and some friends from Epsom races, when a child accidentally fell under the wheel of his chaise, and was killed. The poor man was much shocked and distressed when he saw the dead body of the child, whose head had been crushed by the wheel. In the course of the following night, he started up in his sleep, and called out "Oh, save the child." He continued to do the same almost every night, and sometimes two or three times in one night. When he started up in this manner, he often screamed so as to awaken and terrify his children, at the same time he struggled and clutched with his hands; and when his wife aroused him he generally appeared quite unconscious that he had been dreaming or making a noise. At other times, he complained of having frightful dreams, and, putting his hand to his head, would say, that he felt as if he were going out of his mind. Sometimes he exclaimed, "That child haunts me night and day!" at other times, "There is that child again!" and often when, in the street, he has seen a

child near a horse, he has been in great terror, and his hands have clutched convulsively. The phenomena, which I have described, continued without addition for two years, but about the expiration of that period, he was seized one morning soon after getting up, with a sudden and violent fit of convulsions. About two or three weeks afterwards, he had two similar fits while in bed, and in about six or seven weeks after this, he had another attack. The fits, which are evidently of an epileptic character, have frequently recurred up to the present time; he has sometimes had three or four fits in a day, and on one occasion he had as many as five attacks in one day. The longest interval between the fits has been eight or nine weeks. His wife has observed that the fits have always been more frequent when he has been weakened by any means. The only occasion on which he had as many as five fits in a day was this,—he went as out-patient to one of the hospitals, and while there he was seized with a fit. Immediately after the fit was over, he was cupped on the neck; the operation was quickly followed by another fit, and in the course of the evening he had three more attacks. These facts seem to be in opposition to the theory, that cerebral congestion is an essential cause of epilepsy. One of the most remarkable features in the history of this poor man is the fact, that he has continued to be haunted in his sleep almost every night by the same horrid vision of the child, with similar startings up, screams, and exclamations. This had occurred, as his wife assured me, so lately as during the night before these notes of his history were taken.

Rather more than a year ago, his wife found him, after one of the fits, preparing to cut his throat with a razor. He said "he had been told to do it, and he must." He then became quite maniacal, and continued so for two or three days. About six months ago he once attempted to jump out of a window, and about a month after this he wandered away from home for two nights and a day, and then returned in a distracted state, without being able to give a better account of himself than that "he had been taken to a station-house by the police, and that he had been by a pond of water; but he did not know whether he had intended to jump in or not." He

has once fallen down stairs, and has often been brought home bleeding from having fallen in a fit in the street. His wife, who is apparently a strong-minded and courageous woman, has been so much harassed by his long and painful illness, that she is disturbed by unpleasant dreams, and often gets out of bed in her sleep.

When I saw him in July, 1851, he had the appearance of rather robust bodily health; he was of middle height, and his limbs were firm and muscular; his head was well formed; hair and complexion dark; his expression was heavy and fatuous; he had been well educated, but since the commencement of his illness his memory had gradually failed, and all his mental faculties appeared to be more or less impaired. There was no loss of sensation or of the power of motion. He complained of constant pain in the crown of his head, but his appetite was generally good. I lost sight of him quickly after I learned his history, and I had no opportunity of observing the effect of treatment. There was little ground for hope in so inveterate a case; but it is probable that much of his mental and bodily suffering might have been prevented, if, at any time before the occurrence of the epileptic attacks, he had taken for a few nights some opiate pill or draught; and if by that means the habit of dreaming had been broken, as my experience of many analogous cases has taught me that it probably might have been. The history of this case well illustrates the tendency which the habit of dreaming restlessness, when once established, has to perpetuate itself, and to induce other serious consequences.

I will now give a few particulars of a case, which will serve to show, that great relief may sometimes be obtained even after the symptoms have existed for a very long time.

Case 5.—R. M., a tailor, was 32 years of age when he first came under my observation, in October, 1850. He had been a delicate child, but, after the age of 9 years, he became healthy and strong, and continued so until nine years ago, when he had reached the age of 23. At this time, his father, who had a very good business, absconded, taking all his property with him, and leaving his family destitute. My patient was the eldest son, and he now had

to provide for thirteen persons besides himself, including his own wife and one child. From this time he was fearfully harassed, and has suffered the usual horrors,—restless nights, spectral illusions, and confusion of thought, to a degree which has often rendered it impossible for him to attend to business; he has, besides, been distressed by temptations to commit suicide, which he has been enabled to resist only, as he says, by the force of religious principle which he happily imbibed in his childhood. At one time, for a period of two or three years, he was so nervous as to be incapable of taking care of himself, and he had two men to guard him. His habits were always strictly temperate. It may be well to state, that this history was obtained, partly from himself, and partly from his wife, who is a very intelligent and, to all appearance, a very truthful woman.

When I first saw him, he was tolerably well nourished, but his face was pale; his expression was torpid, rather than anxious; his sleep was disturbed; he complained of great confusion of thought, and of "losing himself;" he was desirous to take a situation as foreman in a shop, but he had no confidence in his ability to discharge the duties of such an office; he had a slight cough, and a great dread of consumption.

I did what I could to encourage him. I assured him of his freedom from bodily disease, and of my hopes that he might recover. I advised him to take a walk daily in the open air; and, on the 28th of October, I prescribed pil. saponis co. gr. v. om. n., et tinct. ferri sesquichl. ℿxx., inf. quassiæ ʒj. ter die.

On the 11th November, the report is, that his appetite has been much better since taking the medicine; he now sleeps soundly. Rep.

Nov. 18.—He is looking much better and brighter; he now feels that he can do his work, and he is confident that he shall get on and recover. He has had no confusion of thought the last few days. Rep.

Jan. 13.—He has continued to improve since the last report, and considers himself now quite well; his countenance is natural, cheerful, and intelligent; he sleeps well, and has neither dreams nor fears; "life is now a pleasure to

him, instead of being a constant dread." He has no work at present, but he feels quite fit for work. He has continued to take the mixture regularly, but the night pills only occasionally.

March 17.—Two days after my last report, he undertook the management of an extensive tailor's business, which he conducts with ease and comfort to himself, and to the entire satisfaction of his employers. He sleeps well, without dreaming; his appetite is good; he declares that he never was better in his life, and his wife is of the same opinion. He looks perfectly well and strong. Since the last report he has taken no medicine, except an aperient pill occasionally.

In no other case which has come under my observation have symptoms so serious, and so long continued, disappeared so speedily and completely as they did in this instance. The improvement, too, has been permanent. I saw this man so recently as the 15th March, 1853, when he told me, that he has continued in the same situation for a period of two years, and, although his employment is very laborious and harassing,—his hours of business being from seven in the morning until ten or twelve at night,—he has not been one day absent on account of illness. He sleeps and eats well, and his countenance is cheerful and intelligent.

The five cases which I have thus briefly described will suffice to convey an idea of the general character of the symptoms which may result from the influence of mental shock or anxiety. I proceed now to the consideration of the most frequent *causes* of mental anxiety, with a view to facilitate the recognition of them by those who are investigating the history of nervous diseases.

The causes of mental anxiety are very various, both in kind and degree; the influence, too, of the same causes is greatly different upon different classes of minds, the difference being dependent partly upon the original constitution of mind and body, and partly upon education and habits of life. It will be needless to dwell upon those causes of mental anxiety whose influence is immediately and universally recognised,—such as the illness or the death of friends, or, what is sometimes worse than illness or death,

the misconduct of any one in whom a deep interest is felt; reverses of fortune; failures, and disappointments in business. The operation of these causes is so obvious, and so powerful, as to be at once perceived, even by the least obesrvant. It is of practical importance to notice the different effects upon mind and body which are produced by grief for past and present calamities, and by the dreadful anticipation of future evil. I am persuaded, that the last-mentioned influence is, on the whole, the most frequent and the most powerful. There are few men or women who have not dreaded a hundred evils which have never come upon them; and every physician must have observed the miserable consequences of an over-anxious care for the future. Any doubt which may at first arise as to the correctness of the statement, that the dread of future evil is, on the whole, more injurious, both to body and mind, than even the influence of present care and sorrow, will, I think, be removed, if we consider how much the dread of future and uncertain consequences is mingled with, and adds to the weight of most of those evils which are actually present. I have found the recognition of this fact to be essential for correctly interpreting the mental and bodily condition of some of my poorer class of patients; and I will illustrate my meaning by one or two examples which are not exact transcripts of any single case, but which are drawn from a multitude of observations, and which I believe to be strictly true to nature.

A tailor, of middle age, who has had no previous illness, complains that, for several weeks past, he has been losing flesh and strength; his appetite has fallen off, and his sleep has been disturbed by frightful dreams and spectral visions. He has a sense of weight on the head, and his sight is becoming dim; he is distressed by palpitation and shortness of breath, and his pulse is slightly quicker than natural, but soft and compressible, and there are no physical signs of disease within the chest; he has some dyspeptic symptoms, perhaps a sense of weight and fulness, with flatulence after meals, but his tongue is clean, and the urine presents no important deviation from the normal condition. We see in the expression of the patient's face unmistakeable indica-

tions of an anxious mind, and we begin to make inquiries respecting his history,—inquiries such as a patient will rarely hesitate to answer when he perceives that they are not suggested by an impertinent and unfeeling curiosity, but that they are prompted by a hearty sympathy with his sufferings, and an earnest desire to obtain such an insight into their nature and origin as will best enable the physician to afford the relief which is sought for at his hands. The result of our inquiries is, that he is of strictly temperate habits, and that he has had no great trouble or cause for sorrow; his wife and children are well; he has had regular employment, and he is not in debt. If we ask why, then, he appears and is so nervous and axious, he will perhaps reply that he cannot tell, for he does not know. Pursuing our inquiries, with a firm belief that such a group of symptoms, and such an expression of countenance cannot be unassociated with mental anxiety, we find that he has a family of six children, and that, in order to support them, and to keep himself free from debt and difficulties, he has been working at his trade for sixteen, or perhaps eighteen, hours a day; that for a long time he continued to do this without much inconvenience; but a few weeks or months ago he began to sleep less soundly than formerly, he felt tired in the morning, his appetite and strength diminished, and he went through his day's work with difficulty. At this point mental anxiety began, for increasing weakness naturally suggested a doubt as to his ability to continue his work; and then came a dread of consequences. How are he and his family to live when he is unable to work? His fears increase all his difficulties, for they suggest frightful visions in his sleep, and a dread of some bodily disease almost paralyses him when awake; his sight is growing weak, and he anticipates total blindness; his heart often beats violently, and he believes that it must be in a state of incurable disease.

I have many times observed the group of symptoms which I have described in needlewomen, who frequently work the whole day and half the night, in hot and ill-ventilated rooms, who rarely have an opportunity for taking exercise in the open air, and whose earnings are so small as barely to

suffice for the maintenance of themselves and others who may be dependent on them. In such circumstances, an apparently trifling cause, some slight illness, which partially unfits them for work, or a temporary lack of employment, or inability to complete a certain amount of work by a given time, will suffice to give rise to a train of nervous symptoms, which, probably, will continue and increase, unless checked by the timely administration of remedies. The group of symptoms which I have referred to may occur both in men and women whose habits are strictly sober; and I have repeatedly seen them in patients who, for a long time, have entirely abstained from the use of fermented liquors. It is scarcely necessary to say, that intemperance will aggravate the effects of anxiety to an extreme degree, and that, in many instances, the consciousness of this degrading habit, and the miseries which it brings with it, are the chief causes of the anxiety, which, acting upon an ill-nourished and weakened body, excites those nervous symptoms to which the drunkard is liable. The effects of over work and anxiety upon persons of strictly temperate, and even abstemious habits, are sometimes quite identical with the well-known symptoms of delirium tremens. One of my patients, whose habits had for several years been temperate, was suffering, when he came under my observation, from anxiety consequent upon the loss of his money; and he assured me that his dreams and spectral visions were then precisely similar to those which he had formerly experienced when he had delirium tremens from intemperance. He was quickly cured, too, by the treatment which would have been appropriate for delirium tremens. Now, the most reasonable explanation of the identity of symptoms arising from causes so apparently different appears to be this,—that, in both classes of cases, there is mental anxiety, although different in its nature and origin; and this mental anxiety is the most important element concerned in exciting the morbid phenomena. It is too obvious to require comment, that the delirium which is caused by the presence of alcohol in the blood,—the delirium of intoxication,—is entirely different from that which is called "delirium tremens." The latter form of delirium does not come on so long as mind and body

are under the stupefying influence of alcohol, but when, after, it may be, a week's debauch, the man awakes to a consciousness of his condition; his money gone, disgrace, and perhaps debt incurred; then it is that delirium occurs, excited, as is probable, by the conjoint influence of a mind agonised by remorse and fear, and a body enfeebled by the insufficient supply of food which is generally involved in a fit of drinking. An Irishman once came to the hospital, and described to me certain nervous symptoms from which he had suffered for a period of three or four weeks. His sleep was disturbed by frightful dreams, his spirits were depressed, and his appetite bad. He was habitually very abstemious, but immediately before the commencement of these symptoms he had been once intoxicated, and he attributed his nervous symptoms to the regret which this lapse had occasioned him. I believe that his explanation was correct, and I have met with other similar instances, which confirm me in this opinion. I am desirous to guard against the notion, that the delirium and the other nervous symptoms which supervene upon intemperance are attributable to the merely physical consequences of that vice. No one, I am sure, could be found to maintain such a proposition in the abstract; but there is reason to believe, that both our pathology and our practice are sometimes tinged with a belief to this effect.

It is of essential importance, with reference both to the pathology and the treatment of delirium, to recognise the fact, that, in a very large proportion of cases, there is a mental as well as a bodily element; in some instances the mental influence preponderating, and in others the corporeal. There can be no question as to the important share which the mind has in the production of those nervous symptoms, which are frequently occasioned by immoderate intellectual exertion. In such instances, while the body is enfeebled by the neglect of wholesome exercise, and by the loss of the required amount of sleep, the mind becomes morbidly excited and anxious, and this occurs indifferently, whether the excessive labour be the result of necessity, or whether it be prompted by an inordinate desire of wealth or by an ambitious craving for distinction. In these cases, too, as in the case of the overworked tailor or needlewoman, the mental

anxiety will increase in a rapid ratio as the gradual exhaustion of mind and body renders the attainment of the object so eagerly sought for more difficult and doubtful. And here, too, it may be observed, that indolence and neglect of duty often occasion as much mental disquietude as excessive labour and fatigue. Those who *kill time* are not unfrequently

> "Haunted much by visions strange,
> And sore perplexity of roaming dreams,—
> The spectres manifold of murdered hours."

The infringement of moral laws brings discomposure and anguish upon the mind, as a physical injury gives pain to the body. Both classes of pain, too, are protective and beneficent in their design and tendency.

That form of delirium which has been so well described by Dupuytren, under the name of *traumatic delirium*, might appear to a superficial observer to have its origin in purely bodily causes. But it is acknowledged by those who have most accurately observed this form of delirium, that it bears no proportion to the extent of the bodily injury with which it is associated. Some patients remain free from delirium after the most frightful accidents, while others become furiously delirious after comparatively trifling injuries. Thus Dr. Todd quotes from Dupuytren the case of a young man, in whom delirium came on in consequence of a slight injury to one of his toes, and killed him in two days. I am persuaded that a careful attention to the previous history and the mental condition of these patients can alone reconcile these apparent discrepancies. A man who has been working to the full extent of his powers to support his family, and who has a laudable anxiety to keep free from debt and difficulties, is, as we may say, predisposed to become delirious, if he suddenly find himself disabled by some accident, however trifling the injury may appear, when considered only with reference to the body. If the habits of the patient have been previously intemperate, he is for various reasons the more likely to become delirious; for it is probable that the mind of such an one has been discomposed by the habitual neglect of his duties, while the body has been weakened by the substitution of alcohol for nutritious food;

and if, in consequence of some accidental injury, his accustomed stimulus be withdrawn, and he be confined to bed with the unpleasant companionship of his own thoughts, delirium is a very frequent consequence, and one, too, which it is not difficult to account for.

We frequently meet with instances of severe and long-continued nervous derangement, as a result of a momentary but violent mental shock. Cases of epilepsy, in which the fits were the result of fright, are very common, and, in several instances which I have seen, the patient has been terrified into the fits by the cruel and wicked trick of dressing up a ghost. In one case, a little boy was frightened into confirmed epilepsy and paralysis by a policeman, who threatened to take him to the station-house, because he was making a noise in the street. The child ran a few yards, and fell in a fit at his mother's door. In another case, a man fell immediately in an epileptic fit at seeing another man killed by a fall from a scaffold. It is well known, too, that some nervous persons have been frightened into epilepsy by seeing the fits in others. And a very important practical lesson to be derived from a knowledge of this fact, is to protect the young and the nervous from so terrible a danger. Some time since, I heard of two twin brothers, about 14 years of age, one of whom became epileptic from some cause which I could not ascertain. They both continued to sleep in the same room; and the result was, that the second soon became epileptic too. In future lectures I shall return to the subject of epilepsy; and I shall refer to some of its most frequent causes and modes of origin, with a view to its prevention, in that numerous class of cases in which epilepsy is preceded by a long train of premonitory symptoms. As an illustration of this class of cases, I may refer to the history of the second and the fourth cases which I have given in the present lecture.

The causes of sudden and violent mental shock are very numerous, and most of them are so obvious as to require no comment. One of my patients, a woman, has been restless and excessively timid since receiving a fright from the collision of two steam-boats, and a false alarm, that the boat on which she was travelling was sinking. The alarm of fire is a very frequent cause of long-continued nervousness.

During the last two or three years, I have had several patients, both men and women, who had continued to dream of fire, and to be excessively nervous and timid, since the burning of the Olympic Theatre, near which they had lived at the time of the accident.

Within the last two years I have met with some instances of nervous restlessness, which the patient's attributed to the dread they had entertained of the cholera when last it prevailed in London. These cases afford additional illustration of the tendency which this nervous condition has to perpetuate itself, and so to continue long after the original cause has ceased to operate. The cure of these affections is often not difficult; but I shall speak of that in my concluding lecture.

One of the chief objects which I have proposed to myself in the latter portion of this lecture has been to indicate some of those less obvious sources of mental disturbance and anxiety which are likely to escape the observation of any inexperienced pathologist who has not been prepared for their recognition. In directing attention to this subject, I have acted in the spirit of a suggestion which is contained in the following remarks by Dr. Latham.(a) "Prior to diseases, to their diagnosis, their history, and their treatment, prior to them, and beyond them, there lies a large field for medical observation. It is not enough to begin with their beginning. There are things earlier than their beginning which deserve to be known. The habits, the necessities, the misfortunes, the vices of men in society, contain materials for the inquiry, and for the statistical systematising study of physicians, fuller, far fuller, of promise for the good of mankind, than pathology itself."

The kind of inquiry here referred to and commended to our notice by Dr. Latham, is, I believe, an essential element of truly scientific pathology; and, with reference especially to diseases of the nervous system, its paramount importance is indisputable. It would not be difficult to show, that many serious errors which have prevailed with regard both to the pathology and the treatment of these affections, are attributable to a disregard of that portion of the patient's history which precedes the occurrence of actual disease.

(a) On the Diseases of the Heart.

LECTURE IV.

In my last lecture, I spoke of the *causes* of mental anxiety. I purpose now to describe some of the *consequences* of that condition of mind which originates in over-work, anxiety, or terror. I have already intimated, that the effects of mental anxiety vary much in different cases, the difference depending partly upon the original constitution of the mind and body of the patient, partly upon education, position in society, and habits of life, and, lastly, in a great degree, upon the nature of the treatment to which the anxious patient is subjected. But amid all the variety of circumstances to which I have alluded, there are certain general features which characterise nearly every case of mental anxiety. These general characters I now proceed to describe.

Among the effects of anxiety of mind, whatever may have been its originating cause, there is not one which is more frequent or more important than that which manifests itself either by sleeplessness or by disturbed and unrefreshing sleep. It is very interesting to note the various descriptions which different patients give of what ought to be their sleeping hours. One of the most frequent complaints is, that the sleep is often disturbed by distressing and frightful dreams, which assume a great variety of forms in different cases. The sleeper often fancies that he is falling down a precipice, or into water, or that he is pursued by some fierce animal, or that he is in some situation of difficulty or danger, from which he cannot escape; these are, perhaps, the mildest forms of unpleasant dreaming. At other times, the dreamer has visions of dead relations and friends, or he is haunted by spectres of every form which a disordered imagination can conceive. The distress of the dreamer is often manifested to those who are watching his slumbers, by a pained or terrified expression of countenance, sometimes by profuse perspiration, by violent action of the heart, and laborious or hurried breathing; sometimes, too, by suppressed moans, or

by frequent talking, and not uncommonly by the loudest and wildest screams of terror. In other cases, the dreamer starts out of bed, and walks about the room; and he may awake in doing this, or he may be aroused by his own cries; but, in other instances, it is very difficult to bring him back to a state of consciousness. On awaking, he sometimes has a vivid recollection of all the circumstances of his dream; but, in other cases, he is quite unconscious that he has been either dreaming, or talking, or making a noise; he has only a vague sense of something terrible, and he finds his skin bathed in perspiration, and his heart beating violently. The last condition—the violent palpitation—is sometimes a source of fresh alarm. I was once called up to one of our medical students, whom I found in a complete paroxysm of hysteria, with *globus* in his throat, and a dread of instant death. His habits had been very regular; but he was of a somewhat nervous temperament, and he was anxious about an approaching examination. It appeared that he had been dreaming, and that, when he awoke, he found his heart beating violently; he was alarmed by this, and, as he continued to direct his attention to the heart, the palpitation increased in violence, and this, again, added to his fears, thus affording a good illustration of the reciprocal influence upon each other of mind and body. I ascertained that he had no symptom of structural disease, either of the heart or of any other organ; and, after some time, but not without considerable difficulty, I succeeded in convincing him that his fears were groundless.

When a patient awakes after a night of disturbed sleep, such as I have described, he usually complains of exhaustion, and will often say that he is more tired in the morning than when he went to bed,—a feeling which we can readily understand, if we consider that, not only has he had no rest, but that he has been in a state of terror during great part of the night. This sense of languor and unrest is in most cases combined with loss of appetite, inability for exertion, depression of spirits, a sensation of pain or weight in the head, and sometimes with an oppressive feeling of drowsiness during the daytime. When the restless condition has become habitual, it is almost invariably associated with a peculiar, anxious

expression of countenance, and particularly with a striking appearance of the eyes, the observation of which will often enable the physician at once to detect the general character of the case with which he has to deal, and so will suggest such further inquiries as may be necessary for its complete elucidation. The appearance of the eyes to which I refer is difficult to describe, but it is immediately and easily recognised when once it has been clearly perceived. The eye loses that brilliancy and liveliness, upon which so much of its natural beauty depends, and it assumes a dull and inanimate appearance. The iris often appears to be in a fixed and inactive condition, so that the size of the pupil varies but little and slowly under the influence of light. In cases of long standing the pupil is often unnaturally small; and in some of the worst cases which I have seen both pupils have been contracted to the size of a pin's point. It is seldom that, even in these extreme cases, there is any intolerance of light; but there is often a greater or less degree of dimness, or defect of sight, without any appearance of structural change in the eye.

I have already intimated, that the expression of the patient's face will often give a clue to the general character of the case, and will guide us to the true source of the symptoms. I may add, too, that the information which we thus obtain will sometimes induce us to persevere with our inquiries when the answers to our first questions are not such as we had expected to receive. For instance, I have frequently been told by patients who exhibit the anxious expression of face which I have described, that they sleep very well, "indeed, too well," they sometimes add; but we must not allow ourselves to be misled by this statement, for it will generally be found on inquiry, that although they sleep so heavily that they can with difficulty be aroused in the morning, yet that their sleep is disturbed by frightful dreams; they awake unrefreshed, and they are languid and drowsy during the day. The cure, the almost infallible cure, for this mode of sleeping too heavily, or, as the patient says, "too well," is a dose of opium at bed time, repeated for a few nights, until the habit of dreaming is broken; the result will be refreshing sleep at night, and, as a conse-

quence of this, the cessation of the languor and drowsiness which had before continued during the day-time.

I have sometimes received in reply to the question, whether the patient is disturbed by dreams, an answer to the effect, that for a long time he has not had sleep enough to render dreaming possible; he declares that he can get no sleep at all. I believe, however, that a patient is very rarely so wakeful as this would imply; and that often, when he supposes that he has not once closed his eyes with sleep, he has really slept, but his slumbers have been so frequently broken and disturbed by dreams, that he cannot distinguish between his sleeping and his waking hours.(a) It scarcely need be added, that sleep of this imperfect character is almost as unrefreshing as complete wakefulness.

I have yet one remark to make with reference to the character or the subject of the dreams. When the exciting cause of the anxiety and restlessness has been some sudden shock of terror or great grief, it will often be found that this continually recurs to the dreamer. Thus the mother not only dreams of her dead child, but the image of the lost one often appears vividly before her in her dreams; the alarm of fire will be repeated every night for many months; and the poor man whose case I related in my last lecture (Case 4) appears to have been terrified during a period of seven years by the almost nightly recurrence of the vision of the child whose violent death he had witnessed. In many cases, however, it is impossible to trace any connexion between the character of the dreams and the past history of the dreamer. I need not repeat what I said in my last lecture, with reference to the essential identity of the effects of overwork and anxiety upon some persons of temperate habits with many symptoms of the delirium tremens of drunkards.

One of the consequences of mental anxiety which is as often as any other associated with the disturbed sleep to which I have already referred, is a more or less complete loss of the appetite for food. In only a very small propor-

(a) While I was engaged in the composition of these Lectures, one of my patients, a man of a very nervous temperament, complained, that after a day of unusual anxiety he had had an entirely sleepless night; but his wife assured me, that he had appeared to her to be sleeping quite heavily during a great part of the night.

tion of the cases which have come under my observation have I been told by an anxious, restless, dreaming patient, that he could take his food as usual. In many instances, too, the digestive powers are much impaired; there is pain or a sense of fulness with flatulence after eating. In some cases severe gastrodynia with waterbrash and occasional vomiting are complained of. I am careful not to confound with the cases to which I now refer others of a different kind, cases of dyspepsia, which are the result of intemperance, or other cases in which the dyspeptic symptoms have been excited or, at any rate, perpetuated and aggravated by a too liberal administration of stimulants to some weak and nervous patient, who has been exhausted by an attack of illness. It is very important that the physician should clearly perceive the nature of the last-mentioned cases of dyspepsia, and that he should be alive to the danger incurred by a weak and anxious patient who takes wine and beer frequently and freely, because, as he says, he has no appetite for food. Such a patient should be warned that the first step towards the recovery of his appetite and his strength must be an entire suspension or a greatly reduced supply of alcoholic stimulants as an article of diet.

Returning now to the more immediate effects of mental anxiety, it is perhaps difficult to determine whether the loss of appetite is a consequence of the patient's sleepless condition, or whether the restlessness is a result of the diminished supply of food; or whether, as is probable, the two conditions exert a mutual influence upon each other. There are facts which seem to favour each of the explanations which I have suggested. Probably most persons have experienced, in some degree, the power of mental emotion to take away the appetite for food and to disturb the process of digestion. On the other hand, the influence of an empty stomach or of a sense of hunger in preventing sleep, and of a moderate fulness of that organ in promoting drowsiness is well known. One fact which I have very frequently observed, tends to show, that the disturbance of the nervous system, and the restlessnes sa e first in the order of time and importance, and that the derangements of the digestive organs are consequent upon

these. I allude to the manner in which opium exerts its beneficial influence. A man who has been restless for many months, and who, during the same time, has not enjoyed a single meal, after taking a grain of opium at bed-time for a few nights, sleeps soundly for several hours, and then awakes with an appetite for food; refreshing sleep returns each night, at first with, and soon without, the help of opium, and the appetite often becomes voracious, like that of a patient recovering from a fever, or from some other exhausting illness. Now, it is contrary to all experience to suppose, that opium would, by any immediate influence upon the stomach, increase the appetite, or assist digestion. The tendency which it has to disturb the stomach, and to produce sickness, or nausea, is one of the difficulties which we sometimes have to contend with when we are most desirous to give the medicine. This well-known action of opium upon the stomach, and the fact, which I have observed in numberless instances, that the appetite returns only after the opium has procured sleep, tends to prove, as I have said, that the derangements of the nervous system, in the cases referred to, are first in the order of time and importance.

That the combined effect of loss of sound, refreshing sleep, and loss of appetite, with impaired digestion, should be to affect, in a very marked manner, the nutrition, and the strength of the entire body, is no more than we should have anticipated, and is what we actually observe. Emaciation and debility, to a greater or less degree, are present in almost every case where the primary symptoms have been of long duration. One man, who had suffered much from restlessness and frightful dreams, in consequence of anxieties in his business, assured me, that, during a period of two years, his weight had diminished by four stone,—it had fallen from fifteen stone to eleven,—and this statement appeared quite consistent with the loose fit of his clothes. Another man, who had suffered in a similar way, in consequence of misfortunes, had lost, as he informed me, from two to three stone weight during a period of two years. This was one of the cases in which, after a long period of nearly total inability to eat or to digest food, a voracious appetite became almost a matter of complaint, after refreshing sleep had been procured by

the temporary use of opium. Another patient, a woman, who had suffered from anxiety, restlessness, and loss of appetite for several months, had diminished in measure round the waist from 24 inches to 19. After taking five grains of pil. saponis co. for a few nights, she began to sleep well, and to eat so voraciously, that, as she told me, she felt ashamed to eat so much, and her husband was quite anxious about her great appetite. The result was, that within a month she had gained three inches in measure round the waist. These measurements were her own, but the rapid improvement in her appearance was quite confirmatory of her statement. It is obvious, that so considerable a defect of nutrition as I have indicated must react injuriously upon the mental disturbance in which it originated; for there can be little doubt, that the depressing and disturbing influence of mental emotion is, *cetæris paribus*, in proportion to the feebleness of the body; and this is a point of pathology which it is of great practical importance to remember. A pretty certain recipe for the production of delirium or some serious form of nervous disease, would be to take an anxious man, and to bleed, or purge, or starve him, or by any other means to reduce rapidly his bodily powers. It is painful to think in how many instances this mode of practice has been adopted by those who have been taught to believe, that furious delirium is a symptom of what is called phrenitis, and that the cure is to be attempted by the fearless use of antiphlogistic measures.

Not only does the enfeebled condition of the body react injuriously upon a disturbed and anxious mind, but the combined action of depressing mental emotion and of the bodily weakness which it induces, through the agency of sleeplessness and loss of appetite, tends to diminish the power of resisting injurious influences to which the body may be exposed, and to develope any germs of disease which may have been latent in the system. The origin of structural disease in various organs may, with reason, be classed among the consequences of mental anxiety. Nor is it surprising that this should be so, when we reflect upon the exhausting influence of long-continued abstinence and watchfulness. In one case which came under my observation, a

poor woman, 34 years of age, actually died from anxiety and exhaustion, without the occurrence of any organic disease to account for the fatal result. I first saw her about a month before her death, when she presented every indication of great grief and anxiety. She had been unkindly treated and deserted by her husband, about five months before; and from this time she had suffered from sleepless nights, with spectral visions, and an almost total loss of appetite. She complained of shortness of breath and palpitation, and she had a cough, with mucous expectoration. The impulse of the heart was increased, and there was some large crepitation at the bases of the lungs. I gave her tonics and opiates, and encouraged her to walk out while she was able to do so, but all without benefit; she could neither sleep nor eat; she daily grew weaker, and died on the 28th of April, about a month after I first saw her. I examined the body on the 2nd May, and found congestion of the lower lobes of the lungs, some dilatation and hypertrophy of the left ventricle of the heart, without disease of the valves or aorta; and a remarkably liquid state of the blood, scarcely one coagulum being found in the heart or in the vessels. Both the liver and the kidneys were somewhat congested, and their secreting cells presented, on a microscopical examination, some slight deviations from the normal appearance. All the appearances observed might, as I think, be attributed to the altered condition of the blood, and this to the want of sleep and food. The anatomical changes were certainly insufficient to account for the poor woman's death. It is a question which does not admit of a very precise answer, how far the hypertrophy and dilatation of the ventricle had been occasioned by the irregular and violent contractions of the heart which were excited by mental emotion, and in what degree they were dependent on any impediment of the circulation which may have resulted from an impoverished and abnormal condition of the blood.

The influence of mental anxiety in predisposing to attacks of disease in various organs, in diminishing the curative powers of nature, and in counteracting the effects of remedial measures, constitutes a subject of wide extent and of great importance. My present design is limited to a passing

allusion, first, to some of the commonest forms of functional disturbance of the abdominal and thoracic organs, which are a frequent source of groundless alarm to the patient, and which may sometimes mislead the physician; and, secondly, I shall speak of those more formidable diseases of the nervous system, which often originate in, or are associated with, mental anxiety.

I have already adverted to those derangements of the digestive organs which are very commonly associated with mental anxiety. There is, however, one consequence of those derangements which I have frequently observed, but of which I have not yet spoken. I allude to the occurrence of symptoms referable to the urinary organs, and which sometimes occasion an unfounded dread of serious disease. Frequent micturition, and pain in the back, are the symptoms complained of, and these are often supposed, by an anxious patient, to depend on a diseased state of the kidneys or bladder. On examination, it is commonly found, that the urine is unusually acid, and deposits an abundant sediment of the lithates on cooling. The acid urine irritates the kidneys and bladder, and thus occasions the pain, and the frequent micturition. In other cases, the urine is alkaline, with a copious phosphatic sediment. These states of the urine are, of course, not peculiar to nervous or anxious patients, but, since any pain is a source of alarm to this class of patients, it is important that the practitioner should be prepared to give a correct explanation of the symptoms, and to apply the appropriate remedies. In some instances, the pain in the back is very severe, and its seat appears to be in the lumbar muscles; but I have met with more than one case of the kind which has been mistaken for inflammation of the kidneys, and treated as such. One of my hospital patients, a carpenter, had severe pain in the back, which he thought was caused by inflammation of the kidney, for he had a similar pain some months before, which was called inflammation of the kidney, and for which he was treated by cupping and other active measures. On that occasion, he was ill several weeks. He had a very anxious countenance, he was restless at night, and he had been for some time out of work. I gave him an opiate pill for a few nights;

he slept well, and quickly lost the pain. He told me, that the first attack of pain, like the last, had come on when he was anxious on account of being out of work; I therefore concluded, as he did, that both attacks were of the same nature. He agreed with me, too, in the opinion, that the opiate treatment had been much more successful than the antiphlogistic measures which were adopted on the first occasion. It scarcely need be said, that many pains in the loins are quite unconnected with nephritis, and that, on the other hand, the kidneys may be acutely inflamed without a complaint of severe pain in the back. In all cases of the kind, a microscopical and chemical examination of the urine is essential for accuracy of diagnosis.

An irregular action of the bowels is frequently observed in the class of cases which we have now under consideration. Constipation is often complained of, and this is sometimes followed by a painful diarrhœa. There is little reason to suppose that these symptoms result from a defective secretion of bile, as is very often asserted, or that they are dependent upon the presence of black bile, as is implied in the word *melancholic*. A defective secretion of bile by the liver may be inferred from the simultaneous existence of bile in the urine, and pale, clay-coloured stools. Both these signs are absent in a large proportion of the cases in which an attempt is made to explain dyspeptic symptoms by referring them to a supposed torpor of the liver. In this, as in many other instances, erroneous pathology leads to mischievous practice. There are few cases in which even small doses of mercury exert a more depressing and injurious influence than when given to these so-called melancholic patients, with a view of stimulating or correcting their biliary secretion.

There is, perhaps, no form of functional disturbance which is a more frequent or distressing source of alarm and anxiety to a nervous patient than the palpitation of the heart, which is almost invariably associated with anxiety and restlessness. I have already referred to the occurrence of palpitation in connexion with the frightful dreams by which the patient is harassed at night. The same disturbance of the heart's action is scarcely less distressing in the day-time. Its cause is probably in part physical and partly

mental. The nutrition of the heart doubtless suffers, in common with the rest of the body, from the impoverished condition of the blood, which must be induced by long-continued restlessness and abstinence. The tendency to palpitation which is thus induced resembles that which exists in cases of anæmia and chlorosis. The influence of mental emotion, of fear and anxiety, upon the heart's action, is so well known that it is needless to insist upon it. It may be observed that the disturbance of the heart's action is in proportion, first, to the weakness and irritability of the organ itself; and, secondly, to the degree in which the patient's attention is anxiously directed towards the heart. The two objects of treatment, therefore, are to strengthen the muscular tissue of the heart by sleep, food, and tonics, and to divert the patient's attention from his heart by the assurance that there is nothing in the state of that organ about which he need be anxious. The effect of a favourable opinion and of a hopeful prognosis is often very beneficial, by calming the patient's fears and restoring his confidence; while, on the other hand, an erroneous diagnosis or an unguarded expression with reference to the heart, may be a source of great additional suffering to the patient, and may retard or entirely prevent his recovery. A poor woman, whose natural irritability and nervousness had been increased by great domestic troubles, and who, in consequence, suffered much from palpitation, was told by a country practitioner that she had a diseased heart, and the remedy adopted was an issue over the supposed seat of disease. She had endured this addition to her sufferings for several weeks, when she came to the hospital. The impulse of the heart was quick, but feeble, and the sounds sharp and clear; there was evidence of a weak and irritable heart, and of nothing more; but it was long before she lost the dread of sudden death, which had taken complete possession of her mind, and which had, doubtless, been confirmed by the erroneous diagnosis and the injudicious treatment to which she had been subjected. It is seldom that an irregular and excited action of the heart is unassociated with some degree of difficult breathing; and, when this is combined with cough, an anxious patient will often be tormented

by a dread of consumption. I make frequent allusion to the *fears* of this class of patients, because they constitute so very important a feature of their history, and because it should be one of the first objects of the physician's care to convince the anxious patient that his fears are groundless, and that the disease which he dreads has no existence except in his own terrified imagination. If, after a careful examination of the chest, we can give our patient a confident assurance that his lungs and his heart are sound, we shall remove a weight of anxiety from his mind which will greatly contribute to the recovery of equanimity and bodily strength. The science of auscultation and percussion is of great value as a means of distinguishing the various forms and stages of disease within the chest; but, when considered with reference to the assistance which they afford in determining the *absence* of organic disease in cases whose nature must, without such aid, remain for a long time doubtful, the importance of these methods of investigation can scarcely be overestimated.

Having thus alluded to the most frequent functional disturbances of various organs, I propose now to consider some of the more important disorders of the nervous system which may have their origin in mental influences. These are, epilepsy, delirium, and mental derangement, some forms of paralysis, chorea, and hysteria.

There are few forms of nervous disease which are attended with more terrible consequences, few which by almost universal consent are admitted to be so little under the influence of remedies, as many cases of confirmed epilepsy. Whatever may be the proximate cause of epilepsy, its origin may often be traced to the operation of various remote causes, of a nature entirely different from each other.

Before I proceed to the consideration of those cases of epilepsy to which I am most desirous to direct attention—cases which have their origin in mental influences—it may be well to advert briefly to those forms of the disease which obviously originate in disordered states of the body. It will be sufficient merely to enumerate these, for examples of each must have occurred to nearly every practitioner. The most common cases are those which arise from the irritation of

teething, from worms in the intestines, from an overloaded state of the stomach and bowels, from the excessive use of alcoholic liquors, from disease of the cranial bones, whether syphilitic or otherwise, from some original malformation or defect of the brain, which is often accompanied by paralysis, from the pain which attends the passage of calculi through the ureter,(a) from the presence in the blood of some of the specific fever poisons—the small-pox poison before the appearance of the eruption being a more frequent cause of convulsions than any other of the fever poisons; and, lastly, cases of epileptic convulsions, arising from suppressed secretion, and the consequent accumulation in the blood of urine or bile.

Some of the causes which I have mentioned may give rise to permanent and incurable epilepsy. The convulsions which arise from the irritation of teething sometimes recur at variable intervals in after life, and the danger of this is probably in proportion to the number and the severity of the primary attacks. Each paroxysm of convulsions is attended wit risk of serious and permanent injury to the brain; hence the importance of a prompt removal of the exciting cause. On the whole, the proportion of those patients who become permanently epileptic after having had convulsions during the period of teething is so small, that such a result is not much to be dreaded in any single case. Syphilitic disease of the cranial bones may often be cured in its early stage; but, when it has proceeded to the extent of involving the membranes and the surface of the brain, it may excite convulsive attacks, which will recur during the patient's lifetime. Those attacks of convulsion which occur in connexion with acute disease of the kidney, never continue after the cure of the renal disease; at least I have never seen or heard of a case which forms an exception to this rule. When chronic renal disease has proceeded so far as to cause convulsions, it is seldom that a fatal termination is long deferred; but, until that period arrives, the convulsive

(a) My authority for this cause of epilepsy is the late Dr. Prout, who observed it "in one or two instances."—"On Stomach and Renal Diseases," 5th ed., p. 322, note.

attacks may be repeated with greater or less frequency. Convulsions are among the rarest, but most formidable consequences of an accumulation of bile in the blood. Two cases of this kind are reported in Dr. Graves's "Clinical Medicine."(a) Both were quickly fatal. Dr. Graves also refers to another case of convulsions with jaundice; the only instance of the kind in which he had seen a cure effected.(b) It appears, therefore, that a large proportion of those attacks of epilepsy which have their origin in bodily disease are transient and curable, and that most of those cases, having a similar origin, which are permanent, are rendered so by the persistent and incurable nature of the organic disease on which they depend.

Passing on now to the consideration of those cases of epilepsy which owe their origin to influences acting primarily upon the mind, we find that they naturally divide themselves into two classes:—1st. Those which result from great terror, or excessive and sudden grief, and in which the first paroxysm usual comes on suddenly without being preceded by warning symptoms; and 2nd. Those which arise from the influence of continued anxiety, and which are preceded for a variable period by premonitory symptoms.

With reference to the first class of cases, I mentioned, in my last Lecture, the chief causes of sudden shock or terror, which I have known to excite epilepsy. The most frequent have been the vision of a supposed ghost, witnessing a fit of epilepsy in another, or the sudden and violent death of another. One woman became epileptic from hearing of the sudden death of an acquaintance; she immediately felt, as she said, a sudden "turn and agitation," and within an hour she had a convulsive fit. One girl attributed her fits to the fright of hearing a knocking, which she imagined to be supernatural; and a delicate, nervous boy, who is now under my care, actually became epileptic from the shock of seeing a horse fall and break his leg. When epilepsy results from a sudden shock of terror, the first fit usually comes on immediately, or within a few hours after the shock has been received. The only exception to this rule which I

(a) Vol. II., p. 255. (b) Vol. II., p. 524.

have met with occurred in the case of a man whose history I have already given (*Case* 4), who, after seeing the violent death of a child, continued to dream of the accident, and, at the end of two years, became epileptic. In this case there can, I think, be no question, that the shock of terror was the exciting cause of the disease, and that this influence was perpetuated and increased by means of the continual restlessness and the frightful visions by which the poor man was nightly harassed.

In the great majority of cases, when an attack of epilepsy has been excited by fright, the fits return and constitute a permanent disease. In only one out of eleven cases which originated in this way, and of which I have either notes or a distinct recollection, has there been a single paroxysm without a return. In one other case the fits continued to recur for a period of five years, then ceased, without any obvious cause, for a period of fifteen years, and after this were again induced by great anxiety. A comparison of a great number of observations would be necessary to ascertain in what proportion of cases epileptic convulsions which have resulted from fright have a permanent tendency to recur after the first paroxysm; it is certain that the proportion is a very large one. It is an interesting but a very difficult inquiry what, in this respect, constitutes the difference between epileptic convulsions which result from sudden and violent mental emotion, and those attacks which are excited by the irritation of teething, and more especially by some specific fever poison, or by suppression of urine. The last case of renal epilepsy which I saw, occurred in a boy who had about twelve violent fits of convulsion in twenty-four hours; he was relieved by cupping on the loins; he recovered from the renal disease, and has had no return of the convulsions, nor is it at all likely that he will. It is evident, from the history of such cases, as well as from cases of puerperal convulsions, that the occurrence of one, or of several, attacks of epilepsy is not in itself a sufficient explanation of the persistent tendency to a recurrence of the disease, which is often left when the first paroxysm has been excited by great and sudden fear. It appears probable that, in such cases, the original shock of terror leaves a permanent morbid condition

of the brain, although the precise nature of the change escapes our observation. No one who has carefully examined the structure of the brain, can deny or doubt, that an organisation so wonderfully complex and delicate may undergo numerous changes which entirely escape our most refined means of investigation. One of the chief obstacles to the progress of mental and cerebral pathology has been, the tendency to attribute to the coarse morbid appearances in the brain and its membranes all the symptoms which may have existed during the patient's lifetime. It would not be difficult to extract, from published reports on the pathology of the brain, descriptions of precisely the same morbid appearances in connexion with a history of symptoms essentially different in different cases. The cautious pathologist, while he notes every abnormal appearance in the brain, will admit that changes more important still may entirely escape his observation. It is probable, that every thought, every sensation, and every movement of the body, is attended with some change in the texture and composition of the brain. No one expects to find the traces of these living actions in the dead brain, yet such an expectation would appear scarcely less reasonable than the attempt to find, in any *post-mortem* appearance which we can recognise, the essential cause of mental derangement, delirium, or convulsions. "There are cases," to use the words of Dr. Gooch (a) in reference to some disorders of the mind in lying-in women, "in which observation of the disease throws more light on its morbid anatomy than its morbid anatomy on the nature of the disease; the living symptoms illustrate the dead morbid appearances better than the dead morbid appearances do the living symptoms."

It cannot be doubted, that many of the morbid changes which have been detected in the brains of epileptics are the consequences rather than the essential causes of the disease. We often have demonstrative evidence of the extreme vascular engorgement occasioned by the epileptic paroxysm; and it is not difficult to perceive that such a condition must be attended with serious risk of yet greater

(a) "An Account of Some of the Most Important Diseases Peculiar to women."

mischief. A short time since, I saw a footman, whose appearance, when he arose one morning, had excited great surprise among his fellow-servants. The conjunctivæ, eyelids, and other parts of the face, presented numerous spots and patches of ecchymosed blood. He told me, that, when he awoke, he found himself struggling violently, his mouth was bleeding, and, on examination, I found that the edges of his tongue had been injured by his teeth. He evidently had been seized with an epileptic fit, and the appearance of his face was sufficient proof of the degree of vascular congestion which that fit had occasioned. If the vessels within the skull had been ruptured to the same extent as those on the exterior, the result might have been a fatal apoplexy; yet this would have been no less a *consequence* of the epilepsy than was the subcutaneous ecchymosis.

It is surprising that the epileptic paroxysms do not more frequently and speedily produce great and obvious structural changes in the brain than they ordinarily do. In one case which came under my observation, it is probable that the brain was seriously injured during the very first fit. A boy, five years of age, was terrified by a policeman, who threatened to take him to the station for making a noise. He ran a few yards, and fell in a fit at the door of his home. After he came out of the fit, the left hand remained numb and weak, and he occasionally complained of pain in the left foot. These symptoms continued and increased; the hand become so insensible, that a blow from his schoolmaster's cane gave him no pain; and the leg became weak, so that he slightly dragged it in walking. About six months after the first attack, he came home one day with a bruise on the temple, which was probably occasioned by his having fallen in a fit. On about three occasions after this, he was seized with convulsions when at home, and his mother believes that he sometimes had fits when in the street. He often complained of headache, which increased towards the end of May, 1847. This was about two years after the first fit. I first saw him on the 31st of May; he was then insensible, with squinting; the face was flushed, and the scalp hot. He continued in the same state until the 5th of June, when he died.

On opening the head, the lateral ventricles were found to contain a large quantity of clear serum. In the tail of the right corpus striatum, there was a hard swelling, about the size of a small hazel-nut, which projected against the contiguous surface of the optic thalamus. When cut into, it presented a yellow colour, and had somewhat the appearance of firmly contracted fibrin. There can be little doubt that this indurated mass was the cause of the partial paralysis of the left hand and leg. It is not probable that it was in any way the cause of the epileptic fits, but more likely that it was a consequence of these; and the partial palsy which remained after the first fit of epilepsy renders it probable that the corpus striatum was injured during that convulsive paroxysm.

In my next Lecture, with your permission, Sir, I shall consider those cases of epilepsy which arise from the comparatively slow operation of mental anxiety, and in which the commencement of the epileptic disease is preceded for a variable period by premonitory symptoms.

LECTURE V.

In the concluding part of my last Lecture, I spoke of those cases of epilepsy which are excited by a great and sudden shock of grief or terror. I purpose now to consider those cases of the same disease, which arise from the comparatively slow operation of mental anxiety. The cases of the latter class which have come under my own care, and of whose history I have a sufficiently accurate knowledge, are seventeen in number. Although it appears desirable to give a separate consideration to the two classes of cases, it is probable that their nature is essentially the same. There is, however, a difference in their history, which it is of much practical importance to observe. It has already been shown, that the epileptic disease which results from the shock of violent grief or terror, usually commences quickly after the occurrence of the shock, and is, in fact, unavoidable; while, on the other hand, those cases of the same disease which originate from over-work and anxiety, or from the influence of continued grief, are almost invariably preceded by a train of warning symptoms; and it is during this period of incubation of the disease that preventive treatment may be resorted to with a reasonable hope of success.

The sources of mental disturbance and anxiety which I have observed to terminate in epilepsy, have been grief on account of the illness, or death, or misconduct of relatives and friends, loss of money, failures and disappointments in business, and, among the poor, over-work or insufficiency of work, with its attendant anxiety and low diet. In two of the seventeen cases to which I have referred, anxiety was combined with intemperance; but I have retained them in this class because mental anxiety appeared in both cases to be the most powerful influence. The cause of the anxiety was in one case the loss of a large sum of money, and in the other excessive labour as a tailor. In the latter case the poor man had been

working two whole nights without going to bed; he then took an extra quantity of drink, and was seized with a fit while in bed. He became a confirmed epileptic.

In a former lecture I alluded to the importance of distinguishing that form of delirium which results from the immediate poisonous influence of alcohol in the blood, from the delirium which may more probably be referred to the combined influence of the mental anxiety and the bodily weakness which result from the too free habitual indulgence in alcoholic drinks. It is equally desirable to make a similar distinction with regard to convulsive attacks. With reference to prognosis the distinction is a very important one. When an epileptic seizure has occurred during a fit of intoxication, it may never be repeated if the patient is careful to avoid the like exciting cause; but when a man who is sometimes intemperate and continually nervous and anxious has once been seized with epilepsy while he is sober, the probability that he will be visited by a return of the disease is very much greater than in the case of a convulsive fit which has been immediately excited by intoxication. We will exclude from our present consideration all cases in which mental anxiety is not either the only or the chief cause of epilepsy.

The symptoms which precede the full development of epilepsy are precisely those consequences of mental anxiety which I described at the commencement of my last lecture, —terrific dreams and visions, startings, talking, and sometimes screaming, during the hours of sleep; after which, a sense of fatigue in the morning, with pain, weight, or constriction in the head, loss of appetite, and weakness. These symptoms continue for a variable period,—sometimes for many months, but in other cases only for a few days before the occurrence of the first epileptic fit, which generally takes place in the night and during sleep. The nocturnal disturbances then continue, sometimes in an aggravated degree; and after an interval which varies from a few hours to many months, a second fit of epilepsy occurs, and so the disease is established.

It is needless to describe the well-known phenomena of epilepsy, or to advert to the blighting influence which the

disease exerts upon the noblest faculties of the mind. My object is to direct attention to the premonitory symptoms, and to insist upon the importance of arresting the progress of these before the occurrence of the first epileptic paroxysm.

I must here guard against a possible misconception. I do not maintain or believe that every over-worked or anxious man, who has unpleasant dreams, and who talks, or screams, or starts up in his sleep, will become epileptic. Such an opinion would be very unreasonable; but, expressed in the hearing of a nervous patient, it might contribute much to bring about its own verification. I do maintain, however, that any one whose sleep is habitually and for a long time disturbed in the manner described, is in danger of incurring some serious form of nervous disease,—it may be epilepsy, or it may be an outburst of delirium or mania, or a sudden attack of partial paralysis, or that more gradual decay of all the cerebro-spinal functions to which the term "general paralysis" is applied. Some one or other of these terrible maladies may result from the long continuance of excessive labour and anxiety by day, with restlessness and terror by night. The object of treatment in such cases is obviously twofold: 1st. To remove the cause, when that is possible; and, 2nd. To combat the earliest effects, with a view to prevent the occurrence of more serious disease.

Respecting the means of accomplishing these objects I shall speak more particularly hereafter; but it may be observed here, that, when our treatment is most successful, we cannot know the full extent of benefit which we have conferred upon our patient. We cannot tell in what proportion of cases the milder symptoms of nervous disorder would have passed into epilepsy; but that they would have done so in many cases there is much reason to believe.

One of the worst cases of epilepsy from over-work which I have met with is that of a boy, R. M——, who is at present an out-patient at the hospital. The disease commenced about five years ago, when he was 13 years old. Before that time, he was very intelligent, of a rather excitable temperament, with light brown hair, and a fair, clear skin. He was employed as a reader in a printing-office, and he worked at this occupation about ten hours a day, in a hot room. For

about a month before the commencement of the epilepsy, he often complained of feeling tired and stupid, and he suffered from headache. At the same time, too, his parents observed that he talked much in his sleep, and occasionally walked about the room in a state of somnambulism. At length he was seized with a very violent fit in the night; and, after a few days, he had a second fit. The fits have frequently recurred from that time. He sometimes has two in a week; but occasionally he has been free from fits for two or three weeks at a time. He was soon obliged to resign his employment as a reader; his memory became impaired, and he cannot now read without feeling confused. His parents are healthy; there is no hereditary tendency to nervous disease. Now, it is probable that a week's rest from his work, or a shortening of his day's labour during the month in which the warning symptoms of mischief presented themselves, might have saved this poor boy from the terrible disease under which he continues to suffer.

The great importance of a careful attention to the earlier symptoms of mischief resulting from over-work and anxiety, will be apparent from an analysis of a given number of cases of epilepsy with reference to the nature of the exciting cause. It is better to exclude from consideration cases of renal epilepsy, of infantile convulsions, and of convulsions during the early stage of the acute specific diseases, as, *e.g.*, small-pox. The reason for excluding these cases is, that they are all temporary, except those which result from chronic renal disease, and these are, in most instances, quickly fatal. Excluding these cases, then, I find, on comparing the histories of 37 cases of epilepsy, that in 11 cases the fits occurred after some sudden grief or terror, in 17 cases mental anxiety was the cause, in 5 either bodily disease or intemperance, and in 4 cases the cause could not be ascertained, there being no history of mental shock or anxiety, nor any evidence of bodily disease or of intemperance. It appears, therefore, that a large majority of the cases of permanent, incurable epilepsy, have their origin in mental influences; and that of 28 cases so originating, 17 were produced by the comparatively slow operation of anxiety from various causes. I have before stated, that

in two of these cases the influence of intemperance was added to that of mental anxiety, and the following case is an illustration of another combination of causes.

F. H., a female, aged 41, came to the hospital, in February, 1851, and gave me the following history of a former illness. About sixteen years ago, a few hours after the birth of her second child, she observed her attendants whispering to each other, and in reply to her inquiry what it meant, they told her that her husband was dying. He had been suddenly seized with a dangerous illness at her mother's house, which was a mile distant. Her husband eventually recovered, but her anxiety was intense for several weeks, and in about a month after her confinement she was suddenly seized with a fit, during which she nearly bit her tongue in two. Her medical attendant bled her, and she had three more fits on the same day. From that time she continued to suffer from the fits, sometimes having four in one day, and never being a week free from them, until the expiration of two years from their commencement, when her medical attendant gave her every night and morning, for a few days, a dose of castor oil and turpentine. The result was, that she brought away about forty round worms, and from that time she has not had a single fit. She had often passed worms of the same kind during the two years preceding the commencement of the epilepsy, but she never had a fit until she was subjected to the intense mental anxiety. After this, however, it appeared that the worms had perpetuated the disease until they were expelled. Her doctor, she said, told her that the fits had been caused partly by fright and partly by the worms. Her story was a very consistent one, and I have no doubt as to its substantial accuracy. She came to the hospital on account of nervousness and restlessness, from which she always suffers when she is anxious, but she has had no return of the epilepsy.

The preceding case is very similar in its general features to one which has been recently published by the late Dr. Graves.(a) The two cases are confirmatory of each other, and both convey an important practical lesson. The case

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(a) *Dublin Quarterly Journal*, November, 1852.

to which I refer was communicated to Dr. Graves by Dr. Harvey. "A young gentleman at a boarding-school lost his brother, who died rather suddenly. This event gave rise to intense grief, which occasioned convulsions, occurring so frequently that the boy was obliged to leave the school. It was soon found that regular epilepsy had been developed, and in a severe form. Various remedies were exhibited, but in vain, for several months, when it was judged expedient to try the effects of oil of turpentine. After it had been used for a few days it unexpectedly acted as a vermifuge, and expelled a tape-worm, from which time the epilepsy never re-appeared." Such is the report of the case, to which Dr. Graves adds the following brief commentary :—"Here, then, we have an instructive example, proving that a source of irritation may exist without producing sympathetic disease, but yet capable of keeping up nervous symptoms when the latter have been caused by other agencies."

It has been before observed, that cases of epilepsy which result from obvious bodily disease, are in most instances curable when the original disease is remediable. It appears, also, that when some bodily disease or irritation of a temporary and removable character has concurred with mental anxiety to produce epilepsy, the prognosis is less unfavourable than when the epilepsy has been occasioned by purely mental influences. The only case of this kind which has come under my own observation, and in which there has been a complete cure, is the one whose history I have just now given. I include that case in the list of seventeen to which I have before referred as resulting from mental anxiety. The remaining sixteen are, so far as I know, uncured. I may remark, however, with reference to this point, that I lost sight of two of the cases quickly after the occurrence of the second fit in each case; so that, although the prognosis was unfavourable, I have no knowledge of the actual results of these cases. In another case, after the first epileptic seizure had been quickly followed by a second fit, there has been no recurrence of the disease for, I believe, more than a year. It is, however, well known that such a patient cannot as yet be considered safe. The

history of one case, which is still under my observation, will illustrate this statement.

H. C——, aged 51, pianoforte maker, a very intelligent and a very temperate man, with a remarkably fine and powerful bodily frame, after suffering much from anxiety consequent upon pecuniary difficulties and excessive labour at his business, had an epileptic fit on the 19th November, 1851. On the 28th December he had two fits of the same kind. After this he had no return of the disease until the 8th February, 1853, so that there was an interval of fourteen months. Then again he had another fit only eight days afterwards—on the 15th February; and another on the 9th of the present month (April). The irregularity of the intervals between epileptic seizures, and the difficulty of deciding when a patient who has become epileptic under the influence of mental emotion can be considered as actually safe and well, are known to every practitioner. It will frequently be found on inquiry, that when a paroxysm of epilepsy occurs after a long interval there has been some fresh exciting cause, or a repetition of the original cause,—some shock of fear, or grief, or anxiety, or anger, acting through the mind, or some unusual fatigue or attack of sickness disturbing and weakening the body. The practical inference from these facts is obvious. I mean, that a patient who has had one or more epileptic seizures should be most carefully guarded against every influence which, whether acting primarily upon the mind or upon the body, endangers a return or a continance of the disease.

The history of every *cure* of confirmed epilepsy possesses some degree of interest. I am therefore induced to give a few particulars of one case which I have not included in my list of seventeen arising from mental anxiety.

L. G——, aged 40, a butcher, came to the dispensary on the 20th February, 1852, complaining of nervousness and restlessness,—the result, as it appeared, of anxiety occasioned by his having been out of employment. He stated, that, about six years before, he was for three months subject to epileptic fits, which he attributed to excessive eating and drinking. He had been in the habit of eating large quantities of meat, and he was frequently intoxicated. He

sometimes had as many as three or four fits in one day. He was advised to drink less, and did so. About two months after the commencement of the fits, a large abscess formed near the anus. It was slow in maturating; but at length it was opened; and from that time he has had no fit of convulsion. The abscess occasionally closed and opened again, and it did not finally close for two years. I cannot vouch for the accuracy of this history; but the patient himself appeared quite confident as to the facts. The case affords support to the doctrine of the humoral origin of epilepsy which has been so ably advocated by Dr. Todd.

That epileptic convulsions frequently result from poisonous materials in the blood is as clearly demonstrated as any pathological fact can be. Take, for example, the convulsive attacks which are produced by prussic acid, or by an accumulation of urinary constituents in the blood. In other cases such a cause is in the highest degree probable, as *e.g.*, when convulsions precede the eruption of small-pox. Again, there are other cases in which it is certain that the blood is abnormal in quality, although it may be impossible to demonstrate the precise nature of the deviation from the normal state; as, for instance, in a case of gluttony and drunkenness, like the one to whose history I just now referred; and, on the other hand, in that numerous class of cases in which continued anxiety and restlessness are associated with a defective appetite for food, and great impairment of the digestive powers. The cases of epilepsy in which the probability of a morbid state of the blood being the essential cause may at the first view appear to be least, are those which are suddenly induced by terror. But, as there is no *à priori* improbability that the character of the blood may be quickly altered by terror, so there are some facts which cannot well be explained, except on the supposition that the blood is in some way changed by violent mental emotion. I allude to the well-known influence of mental emotion upon the various secretions, and particularly upon the secretion of milk, as tested by the sensitive stomach and nervous system of a sucking infant.

The immediate effect of mental anxiety, or grief, or anger in the nurse upon the infant at the breast is well known, not

only by every practitioner, but by every mother. I have repeatedly been told by nursing mothers, that when they are very anxious, their infants invariably have green stools, and suffer from griping. On one occasion, I attended an infant which had been in good health until the mother was rendered intensely anxious by her dissipated husband staying out all one night; the infant, on the following day, was griped, had green stools, and a fit of convulsions. The man returned; the mother's anxiety subsided, and the child quickly recovered. The most remarkable case of this kind is quoted from a German author, by Dr. Carpenter, in his "Principles of Human Physiology:"(a)—"A carpenter fell into a quarrel with a soldier billeted in his house, and was set upon by the latter with his drawn sword. The wife of the carpenter at first trembled from fear and terror, and then suddenly threw herself furiously between the combatants, wrested the sword from the soldier's hand, broke it in pieces, and threw it away. During the tumult, some neighbours came in, and separated the men. While in this state of strong excitement, the mother took up her child from the cradle where it lay playing, and in the most perfect health, never having had a moment's illness; she gave it the breast, and, in doing so, sealed its fate. In a few minutes the infant left off sucking, became restless, panted, and sank dead upon its mother's bosom. The physician—who was instantly called in—found the child lying in the cradle, as if asleep, and with its features undisturbed; but all his resources were fruitless—it was irrecoverably gone."

Such an event could hardly, as Dr. Carpenter observes, be regarded as more than a simple coincidence, if it were not confirmed by numerous other facts of a less striking character, but equally decisive. There can, I think, be little doubt that the effect of mental emotion in modifying the secretions is consequent upon some previous change in the blood itself. This explanation is certainly more consistent with other facts and with analogy than is the supposition, that the modified secretion results from some direct and immediate influence transmitted through the nerves

(a) Fourth Edition, p. 980.

to the gland itself or to its secreted products. One of my Dispensary patients, a boy about 14 years of age, had a fit of epilepsy after the violent excitement of a quarrel with one of his fellows. Now, it is certainly not unreasonable to suppose, that this boy's brain was poisoned by some noxious modification of his blood, similar to, if not identical with that which, in like circumstances, leads to the secretion, by the mother, of milk so poisonous in its character, that it either quickly kills, or convulses, or gripes her sucking infant. The green stools, and the griping thus induced, are not distinguishable from the same symptoms occurring as a consequence of the mother eating some kinds of vegetables, such as cabbage. She may or may not be inconvenienced by such diet; but the more delicate stomach of her infant will often prove, by its derangement, that some injurious material has passed through the mother's blood into the secretion of the breast.

There is not wanting even direct chemical evidence of changes in the composition of the secretions effected by the agency of the nervous system. Bernard(b) has shown, that when the medulla oblongata of a rabbit is irritated by the insertion of a fine needle, the urine of the animal quickly becomes saccharine, and that the secretion of sugar continues so long as the irritation of the brain remains. Whatever may be the precise *modus operandi* of the cerebral influence, there can be little doubt that the kidneys only secrete or separate the sugar which is conveyed to them by the blood. They probably have no share in the formation of that material. This is a very striking illustration of a change in the vital chemistry of the blood and of the urine affected by nervous influence. The experiment in question is confirmatory of an opinion entertained by many pathologists, that diabetes in the human subject may be induced by over-work and anxiety. I have myself no doubt that this opinion is correct, and within the last few months I have seen two cases of diabetes, the origin of which appears to be clearly traceable to such influences. Another fact which has an important relation to the same subject is the

(b) Archives Générales de Médicine.

influence which opium frequently has in lessening the quantity and the density of the saccharine urine secreted by diabetic patients. This fact appears, indeed, to be the counterpart of Bernard's experiment. If irritation of the brain of a rabbit by a needle, or of the human brain by mental anxiety, will lead to the secretion of sugar by the kidneys, it is not difficult to believe, that the soothing influence of opium may, in some degree, counteract that particular effect of cerebral irritation.

Returning now to the pathology of epilepsy, it seems reasonable to suppose that, however diverse may be the remote causes of the disease, the proximate cause of the epileptic paroyxsm is similar in every case. It is certain, that in a large proportion of cases a morbid state of the blood is associated with the disease, and is, in fact, the essential cause of the convulsion. And lastly, while there is some degree of *à priori* probability, that mental emotion causes epilepsy, through a change effected in the composition of the blood, there are some well ascertained facts which afford positive evidence as to this mode of operation. In fact, it is probable that a fit of anger, or of sudden and violent grief, or terror, may generate in the blood a poison which is sometimes as quickly fatal as a large dose of prussic acid, and which is almost identical with that compound in its mode of operation.(a) In discussing a subject of such acknowledged difficulty and obscurity as the pathology of epilepsy, hypothesis must sometimes serve as, at least, a temporary substitute for demonstration. We have only to be careful not to maintain our favourite hypotheses after they have been shown to be inconsistent with actual facts. It scarcely need be added, that, to use hypotheses with caution, and to abandon them when they have served their purpose, or are no longer tenable, is not only a rule of true philosophy, but also a solemn obligation of duty on the part of every one who proposes to found upon hypothetical opinions, rules for the practical guidance of himself or others.

(a) It is by no means improbable, that a morbid condition of blood, and a minute structural change of the brain, may be concurrent causes of some epileptic seizures, and of those, in particular, which result from a sudden and violent mental shock. (See the previous Lecture.)

I have before referred to the subject of *delirium*, as being one of the consequences of mental anxiety, under which term I include those mental states, which result from grief, over-work, and an over-anxious care for the future, or a dread of ill consequences. In my third Lecture, I gave the history of a poor man (*Case* 2), who was rendered delirious, and, at a subsequent period, epileptic, by continued grief and anxiety, consequent on the misconduct of his wife. The delirium in that case is a good example of the kind of delirium which is sometimes occasioned by intense anxiety. This form of delirium rarely, if ever, occurs without being preceded by some warning symptoms. In this respect it resembles the epileptic disease, which is often induced by similar influences. The warning symptoms, too, are of the same kind. The patient's sleep is disturbed by frightful dreams, which he may remember and speak of with dread during his waking hours, or which may be known to occur only by his being heard to talk frequently, or to moan or scream, during his sleep. When he is talking in this manner during sleep, he will sometimes answer questions as if his faculties were quite alive; but, when he awakes, he may have no recollection of what he has said or heard. At other times, he appears while sleeping to be carrying on a conversation with some person whom he imagines to be present. I was once told by a very intelligent woman, whose husband eventually became insane, and died in an asylum, that he was of what she called "a very close disposition," so that he would never willingly speak of his troubles to her or to any one; but, whenever he had been unusually worried, he talked so much in his sleep, that she learned from him then, not only the fact of his being anxious, but also the particular cause of his anxiety.

The transition from a state of sleeping delirium to delirium in the waking condition is sometimes rapid. An intermediate stage appears to be that in which a man starts up in a state of terror and confusion, looking about him, and sometimes talking wildly, and recovering complete consciousness only after being frequently spoken to, and roused by being touched or shaken. In some instances, the excitement on first awak-

ing is accompanied by a more or less strong and durable temptation to commit suicide, or to do violence to others; and the patient will afterwards describe these feelings as most distressing and terrible. The symptoms which I have described, if permitted to continue unchecked by treatment, may be quickly followed by an outburst of maniacal delirium, or by an epileptic seizure, and sometimes, as I have seen in two instances, by both these consequences in succession. In no case whose history I have investigated has an outbreak of delirium occurred without being preceded, for a longer or shorter period, by some of the warning symptoms to which I have referred. I have sometimes heard and read of men becoming suddenly delirious or mad without any warning and without any appreciable cause. I have never seen such a case in practice, but I have met with more than one case which, without a careful examination, might have passed for such,—cases in which there was a deep and abiding cause for anxiety, which was never revealed even to the nearest friend or relation until it was made known after it had wrought irreparable mischief in the mind and body of the patient.

One case of this kind presented itself in a clergyman, who was possessed of a powerful mind and body, until he suddenly became insane, and subsequently epileptic, when little more than 30 years of age. His habits were strictly temperate, but he was perhaps over-anxious about his work and the results of his labours. His wife observed, that his appearance and manner were changing; he became unusually reserved, and sometimes irritable; in other respects, too, his conduct was strange. He was at a distance from all other members of his family, and his anxious wife had no suspicion either of the real cause of the change which had come over him, or of the further consequences which were threatened. At length he became suddenly and furiously delirious in the middle of the night. The mental disease continued, and became complicated with epilepsy, and, after nearly four years of suffering, he died. Now, the cause of all this mischief was not ascertained until the time for prevention had passed. His income was small, and insufficient for the wants of an increasing family; he was in difficulties on this

account, but no one was aware of the fact until the state of his affairs was disclosed after his illness. He was naturally of a reserved, and perhaps, I might add, of a proud disposition; and he had concealed his difficulties from his wife, probably from an unwillingness to distress her by a knowledge of them. It scarcely need be added, that his own anxiety was rendered the more intense by this reserve, and by his not seeking that relief which might have been derived from such a free out-speaking of his troubles as would have enabled his family to assist him out of them, or to share them with him.

I could give the details of several cases of whose history I have an intimate knowledge, in which consequences equally disastrous, though differing in different cases, have resulted from similar causes, and especially from the influence of suppressed grief or anxiety, the cause for which has neither been known nor suspected even by the patient's nearest friends, until it has been brought to light after the onset of some terrible illness,—an attack of mania, or epilepsy, or paralysis.

Now, it is in the highest degree important, that our attention should be alive to the true nature of these cases; and for this particular reason—that we may often be consulted by an anxious patient before his nervous system has suffered serious injury. He will be apprehensive of some bodily disease, and will come to us with a complaint of some of those symptoms which I described in a former lecture. He feels certain that his heart, or his lungs, or his kidneys, are in a state of incurable disease; and he begs to have our opinion upon their condition. We examine these organs, and we can detect no sign of structural disease, either in them or in any other part. We observe the patient's anxious appearance and manner, and, after inquiring for other sources of disturbance, we may often feel certain that all his discomfort has its origin in some mental influence. If, then, we express this conviction to the patient, in terms which must greatly depend on his circumstances and on the degree of our intimacy with him, we shall probably so far gain his confidence as to obtain from him a confession of trouble and anxiety, of which, perhaps, he had never before spoken to

any one. Or, if he hesitate, as perhaps he may, to make a confessor of his physician, we may at least succeed in awakening his attention to the true source and nature of his sufferings, and so induce him to confide in some friend, and to unburden his mind, so far as this can be done, by giving "sorrow words." In this way we may often be instrumental in preventing the occurrence of diseases which, when once they are fully developed, are irremediable by any means which we can command; while, on the contrary, an error of diagnosis—and particularly as to the origin of the patient's suffering—may be attended with very disastrous consequences, partly by confirming the patient in his fears as to the state of his bodily organs, and partly by suggesting a plan of treatment the very reverse of beneficial.

Before leaving this part of my subject, I will remark, that, when a patient has once been delirious or insane from the effects of mental anxiety, he is very liable to suffer from restlessness, or to have his sleep disturbed by frightful dreams and visions, if at any time his bodily strength be much reduced by illness or over-fatigue, or if he be exposed to any fresh source of mental worry. I have observed this particularly in the case of a poor woman, who has once been in an asylum, and who has several times since complained to me of the symptoms to which I have referred. On each occasion she has been quickly relieved by an opiate taken at bedtime for a few nights. In such cases, it is probable that the mere dread of a return of the disease is often a source of great anxiety. And the same observation is applicable to epileptic patients. One poor man told me, that he always sleeps soundly for a few nights after he has had a fit; and he explained the fact by the feeling of confidence which he has that there is then little reason to fear an immediate recurrence of the fits, which, at other times, he so much dreads, that he cannot sleep with comfort.

Among other consequences of long-continued mental anxiety, I have frequently observed a greater or less degree of that general impairment of all the functions of the mind and of the nervous system to which the term *general paralysis* has been applied. It has appeared to

me, that the most frequent and powerful influences concerned in producing this state of body and mind are,—overwork or a deficiency of work, with the anxiety attendant upon it, an insufficient supply of wholesome and nutritious food, and the impure atmosphere of dwellings and workshops. The intemperate use—or, rather, abuse—of alcoholic liquors is by no means an essential cause, but a very powerful one when it exists; for it is an almost constant source of mental anguish, at the same time that it poisons the body and impairs its nutrition. The brief history of one case will serve as an illustration of this form of disease.

J. M ——, aged 44, an upholsterer, came to the hospital on the 19th January, 1851. His mental faculties were so much impaired, that he could give no account of himself; but I obtained from his wife the following particulars of his history:—No members of his family had suffered from nervous diseases except his father, who was the owner and commander of an East Indian merchant-vessel, and who became insane, in consequence, as was supposed, of misfortunes and losses during one of his voyages. My patient had married about twenty years before; he had then a good business, and for some time went on very prosperously. About ten years ago he began to drink occasionally to excess, but not so as to interfere with his attention to business. He had always been of a somewhat nervous temperament, but the effect of his occasional intemperance was to make him much more nervous and anxious. About five years ago he lost the custom of a firm which had given him the greater part of his business. He now became very anxious and irritable; he could neither sleep nor eat, and about the same time he had some kind of fit, which was attributed to intemperance. His memory and intellect gradually failed; he drank less, but his limbs were so tottering and unsteady that he often appeared to be intoxicated when he was quite sober. This had an injurious effect upon his business, and on one occasion a large order was countermanded because he was erroneously supposed to be intoxicated when he received it. He was exceedingly distressed by this occurrence, as well as by the loss of two of his children, which occurred at a more recent period. This

series of misfortunes had gradually impaired his health, and when he presented himself at the hospital the expression of his countenance indicated a state of childish imbecility, his memory had entirely left him, his perceptive powers were greatly impaired, he answered questions slowly and imperfectly, his speech was thick, and his gait tottering,—yet with all this his muscles were tolerably firm and well nourished.

I saw him several times after his first visit to the hospital. He remained in much the same condition until the 7th March, when, as I afterwards learnt, he became excited by the expectation to obtain some employment which was promised him, and apparently in consequence of this he was suddenly seized with a fit of convulsions. A medical man who was called in immediately took eight ounces of blood from the arm. After this he gradually became lower, and the convulsions, which were accompanied or preceded by loud screams, returned frequently at intervals of about half-an-hour. He died on the following day, about twenty-seven hours after the first seizure. I did not hear of his death until it was too late to examine the body.

It is evident that the mental and bodily powers of this poor man were gradually broken down by an accumulation of injurious influences, all more or less connected with each other. It appears that his disposition was originally nervous, and that an occasional habit of intemperance was the first avoidable cause of disaster. He may have been tempted to this habit by his constitutional nervousness; but any temporary relief which he thus obtained was of course followed by an aggravation of the original evil, and so his descent commenced and continued until the final catastrophe. Great as is the physical mischief which is directly occasioned by an abuse of alcoholic drinks, there can scarcely be a question that as in this, so in many similar cases, the mental anguish which the drunkard experiences is not less powerful in its influence upon the nervous system; its action being primarily upon the mind, and secondarily upon the bodily instrument of the mind.

Besides the cases of general paralysis to which I have referred, I have occasionally observed some form of *local*

palsy in connexion with intense mental anxiety. I do not now allude to cases of apoplexy and hemiplegia which, however, I have certainly known to occur under the immediate exciting influence of distress and anxiety; but I refer more particularly to the partial loss of sensation in some of the fingers or other parts of the body—symptoms which are often a source of great discomfort and alarm to a nervous patient. I am ignorant of the proximate cause of these disordered sensations.

I have before stated, that some degree of impairment of vision is frequently complained of. In one case, a nervous man had been rendered intensely anxious by a change of his situation which he had expected to be for the better proving quite the reverse; he became very restless, and quickly lost the sight of the right eye without any outward change in the appearance of the organ; at the same time, too, the sensation of the upper lip on the same side became impaired. Before he came under my care, he had taken mercury without benefit. His health has since improved in other respects; but when I last saw him he had not recovered either his sight or the feeling in the lip.

A girl who was subject to occasional fits of hysteria, suddenly lost the sight of the left eye from the effects of hard work and anxiety. The pupil on the affected side was much dilated. She had a timid, delicate appearance, and a pallid skin. I gave her sulphate of iron three times a day, muriate of morphia at night, and an occasional dose of compound aloes pill. She quickly recovered her sight, and the pupil regained its natural size.

In the case of one woman, at present under my care, who has been much harassed and overworked, and who complains of the usual symptoms, disturbed sleep, etc.; one pupil is about twice the size of the other; but she declares that her sight is good, and equally so in both eyes.

It is needless to do more than make a passing allusion to the subject of *chorea* as connected with mental influences. It is well known that scarcely any disease is more intimately connected with the emotions of fear and anxiety. Without doubt, some derangements of the bodily organs may concur

in the production of chorea, and these must be regarded in conducting the treatment of the disease; but neither the pathology nor the therapeutics of chorea would be complete without due attention to mental and moral influences.

And, lastly, with reference to *hysteria*, it is unnecessary to insist upon the fact, that, notwithstanding the etymology of the disease, it is by no means limited to the female sex. There is not one of its characteristic symptoms which may not be fully developed in the male. It is a less frequent disease among men, for the reason, that the feeble constitution and the excitable nervous system which predispose to the hysterical paroxysm are less common in men than in women. The *globus* in the throat is the form of hysterical symptom which I have observed more frequently than any other in anxious patients, both men and women. It is always a distressing symptom, and it often alarms the patient greatly. The sensation is usually excited by some sudden emotion, and it may occur at any period of the day or night. In several cases, especially in men, it has been complained of only at night, and, in these instances, it has appeared to be connected with the unpleasant dreams by which the patient was nightly disturbed. The dreams and the hysterical globus have been cured by the same means.

One of the most remarkable cases of the kind was that of a man nearly 60 years of age, who came to the Dispensary, and assured me, that, for the period of a year, he had scarcely passed a night without being disturbed by a frightful sense of suffocation, for the relief of which his son and daughter assisted him to the open window. He had no cough, nor any symptom of disease within the chest. His countenance indicated great anxiety, and he spoke of having been much troubled by circumstances, the nature of which he did not communicate. I ordered him to take five grains of the compound soap pill each night at bedtime. He came again at the end of a week, and told me, that, since taking the pills, he had slept well, and had not once been disturbed by the choking sensation which had so long distressed him. From that time I saw him no more; I therefore conclude that he had no return of the complaint.

I have seen many cases similar, though less striking than this,—similar, both as regards symptoms and the results of treatment. It sometimes appears that local irritation of the throat excites the sensation of *globus* in those who are predisposed to it. When a very nervous woman gets a common sore throat, her distress and sense of suffocation are often quite out of proportion to the local irritation or swelling. One poor woman, who was very anxious, and much overworked, had a slight choking fit while swallowing some food, and afterwards she felt convinced that some substance had lodged in her throat. She went to one of the hospitals, where the house-surgeon passed a probang, but this rather increased the discomfort. She afterwards came to the Dispensary, and told me her history. The mucous membrane of the fauces and pharynx was congested, but her intensely-anxious face and nervous manner, and her description of the *rising* in her throat, were the most significant facts. It was not until after many days, and then very gradually, and with occasional relapses, that she escaped from the painful conviction that there was some solid mass actually sticking in her throat.

LECTURE VI.

One of the chief objects which I proposed to myself in the three preceding lectures was, to describe those milder symptoms of nervous derangement which, in a certain proportion of cases, constitute, in fact, the earlier stage of some of the most formidable diseases with which the physician has to contend. A patient who now complains that he is unable to sleep, or that his sleep is habitually disturbed by frightful dreams and visions, may at no very distant period, if he do not obtain relief from these distressing symptoms, become epileptic or insane. Another object which I had in view was, to trace these diseases to their remote causes; and I have endeavoured to show that, in a larger proportion of cases, the origin of the nervous diseases to which I refer may be traced to the operation of mental influences,—to the influence of anxiety, grief, or terror.

It is frequently asserted respecting patients whose mental or bodily health is much impaired by grief or anxiety, that they must have had some peculiarity of constitution which *predisposed* them to be thus seriously influenced by causes which have no such effect upon many other men who are equally exposed to them. In many cases, too, it is said that the disease, or the tendency to it, has been *inherited* from the parents of the sufferer. I am not prepared to deny the general accuracy of either of these propositions, but I am desirous to guard against some of the practical evils which may result from a vague application of the terms predisposition and hereditary tendency.

With reference to predisposition, the doctrine is true of nervous diseases, as of nearly every other form of disease. Out of a given number of persons who are equally exposed to the same injurious influences, a certain proportion will suffer more than others, and it will often happen that some individuals are scarcely influenced by causes which have a

very prejudicial and destructive effect upon others. Now, what we have to guard against in the use of the term *predisposition* is, the tendency to apply it, in our attempts to unravel the mysteries of disease, in such a manner as would imply a belief, that by the mere use of the word we have given a sufficient account of the phenomena. The propensity to substitute words for ideas, to invent and to apply a name, and then to dismiss the subject without further investigation, is a very common impediment in the way of an actual advance of knowledge, and one against which the pathologist needs to be constantly on the watch.

With respect to the influence of various sources of grief and anxiety upon the mind and body, it is not difficult to predict, that some persons will suffer from such influences in a greater degree than others, and also in a different manner. But our predictions will often be falsified, unless they are based upon a very careful consideration of the entire constitution, mental and bodily, of those to whom they relate; unless, too, allowance be made for the modifying influence of intellectual and moral training. It is quite beyond my present purpose to enter upon the full consideration of this extensive and difficult subject. I wil merely remark, in passing, that it is not those who *appear* to be most sensitive who generally suffer in the greatest degree from the depressing emotions. On the contrary, mental anxiety often exerts its most pernicious influence both upon the mind and the body of those who have a proud and cold exterior, and whose natural reserve of manner might lead to the erroneous belief, that they are little affected either by joy or sorrow. The most powerful mind and body are often unable to resist the influence of *suppressed* anxiety. Grief may be rendered quite intolerable by *pride*, and the spirit that will not *bend* will sometimes *break* beneath a load of care and sorrow.

And now, with respect to the subject of hereditary disease, it is unquestionable, that children often suffer from the same forms of nervous disease as those which have affected one or other parent; and it is an undoubted fact, that nervous diseases occurring in the children of nervous parents, are often more unfavourable, and less influenced by

treatment, than similar diseases occurring in the offspring of healthy parents. It is practically of much importance to distinguish between the various modes in which diseases may be transmitted from parent to offspring. 1st. A disease may be actually inbred, or congenital. 2nd. The tendency to disease may be transmitted, but this will require the operation of certain exciting causes to produce the actual development of disease; and 3rd. The child may acquire from his parents certain habits which favour the occurrence of the same diseases in successive generations.

The practical rule, in reference to this matter, is, that the existence of any hereditary morbid tendency is a powerful reason for the exercise of constant care, to avoid the exciting causes of disease; for, when a disease is not actually congenital or existent, it may often be entirely escaped by a strict avoidance of its known causes; while, on the other hand, the tendency to disease in the offspring will certainly be confirmed by the continued operation of those influences which originally excited the same disease in the parents. The son may not acquire the father's gout by direct inheritance; but, if he inherit his parent's luxurious habits, together with the means of indulging them, he may earn the gout for himself, and this the more readily, in consequence of the morbid tendency which perhaps has been transmitted to him. In short, as there is no disease or morbid tendency capable of being transmitted from parent to offspring which may not be originally acquired by exposure to its known causes, without hereditary predisposition; so there is not one which may not be escaped even by those who are supposed to have an inherited tendency, if they will be vigilant to avoid its exciting causes. And this, I repeat, is the practical lesson to be derived from a study of hereditary disease.

There is something strange and startling in the excuses for self-indulgence which are often based upon the kind of fatalism which is implied in an abuse or misapprehension of the doctrine of hereditary disease. "I know I must suffer from the gout, because my father was killed by the disease; why, then, should I abstain from drinking porter?" Such, in substance, is the reasoning of many a working man who drinks his "two or three pots" of porter daily, but who can

ill afford to suffer from a disabling and painful disease, or to spare the money which it costs him to acquire it.

PRINCIPLES OF TREATMENT.

In my previous lectures I have had frequent occasion to refer to principles of treatment and to the influence of particular remedies upon the various forms of nervous disease and derangement with which I have occupied your attention. I purpose now to devote the remaining portion of this lecture to a more detailed consideration of the important subject of treatment.

There are two methods of illustrating in general terms the intimacy and the importance of the relationship between therapeutics and pathology. The one method is to select a single prominent symptom of disease, and to indicate the various causes and conditions which may give rise to that symptom, these causes being not only of a different nature in different cases, but sometimes even of an essentially opposite character. It follows, therefore, that the removal of that symptom can be successfully attempted only by remedial measures, adapted in each case to the particular nature of the cause which has given rise to it.

Take, for instance, a very common and a very distressing symptom—headache. In what a multitude of causes it may originate, and how essentially different and even contrary to each other are these causes in different cases! First, there are the various kinds of headache which result chiefly from the state of the blood and of the circulation. The blood may be too abundant and too rich; or, on the contrary, it may be scanty and deficient in nutrient materials, and headache of the most intense character may be caused by either of these opposite conditions. It scarcely need be said, that the treatment which will cure one form of headache will certainly aggravate the other. Again, headache may result from contamination of the blood by some noxious materials which have either been generated within the body or introduced from without. An accumulation in the blood of urinary or biliary constituents, or of carbonic acid, is a frequent cause of headache. The two first-mentioned conditions may, in most instances, be traced to

functional derangement or structural changes affecting the kidneys and liver, and to these organs the treatment must be directed, while an excess of carbonic acid in the blood is usually dependent either on some morbid state of the lungs or heart, or on the composition of the atmosphere which the patient has breathed.

In other cases, the headache may be attributed to the contamination of the blood by materials which have been absorbed from the intestinal canal, and the cure of it is to be sought by a strict attention to diet and regimen, and by the administration of alteratives and aperients. Headache appears sometimes to be connected with gout, and it is immediately occasioned, perhaps, by the presence in the blood of some of the peculiar gouty products, whatever these products may be. And, again, headache often forms a prominent symptom in the early stages of the acute febrile diseases. In all the cases to which I have referred, the immediate cause of the headache is, in all probability, a morbid condition of the blood.

In another class of cases, the cause of the headache is of a more local character, and consists in a morbid state of the brain, or its membranes, or of the cranial bones.(a) And, lastly, there is a large and important class of cases which may be considered as intermediate between the two before mentioned,—between those in which the headache results from an abnormal condition of the blood, and those in which that symptom depends upon local disease of the head. I refer to the headache which is excited by the influence of fatigue, anxiety, and various other kinds of mental emotion,—nervous headache, as it is sometimes called. I consider this to be intermediate between the other two classes of cases, because, although the first stress and strain of mental emotion are obviously upon the brain, yet it is equally manifest that, through the disturbing influence which it exerts upon the functions of various other organs, the operation of mental emotion is quickly and widely diffused, and it is pro-

(a) It may be observed that, even this apparently local cause of headache may have originated in some morbid condition of the blood, as, for instance, when disease of the cranial bones has been induced by the poison of syphilis.

bable that the headache which results from it is, in part at least, occasioned by its secondary influence upon the blood and the circulation. It is evident, therefore, that, as this one symptom,—headache,—may result from widely different conditions and causes, so its treatment must be conducted with a constant reference to the nature and origin of the evil which we seek to remove,—the same symptom requiring a different and even an opposite mode of treatment in different cases; and this, as I have before observed, is one method of illustrating the connexion between therapeutics and pathology.

Another method of showing the relationship between these two departments of science is, to examine the various symptoms which may result from the operation of one class of morbific influences, with the view of demonstrating the beneficial effects of one plan of treatment in removing symptoms, which, to a superficial observer, would appear to be, and are, indeed, widely different, but which, being united to each other by the bond of a common origin, are remediable by a single method of cure. For this mode of illustrating the connexion between therapeutics and pathology, I believe that no class of diseases are better adapted than those which have formed the subject of the three preceding lectures,—I mean the various morbid conditions which result from the operation of different kinds of mental emotion; for as there is scarcely any other single kind of morbific agency which may give rise to symptoms so numerous and so diverse as the mental influences to which I have referred, so there are no forms of disease which require for their successful treatment so constant a recognition of their cause and origin. The knowledge of the cause of a disease—I mean of its remote, outward, originating cause—is, in many cases, of more practical value with reference both to prognosis and treatment, than the most minute investigation of morbid structure, or of the processes by which the structural changes have been effected. If we can detect the originating cause of a symptom, or of a group of symptoms and if the cause be one which is removable or avoidable, we may often relieve our patient from his disease by instructing him to avoid its cause, although we may know nothing of the morbid anatomy of the disease, and but little of the

relation and sequence of its phenomena; while, on the contrary, a very exact knowledge of the consequences of a disease, without some insight into its origin and cause, may be entirely useless for any practical purpose. The following remarks with reference to this subject are from the pen of Dr. Latham (a) :—"Our surer knowledge, which regards external causes, is most within our reach; its fruit is most appreciable, and at hand; it concerns the prevention of what is often incurable; it claims an industrious pursuit under a moral obligation, if not from its scientific character. But our more precarious knowledge, which regards internal operations, is what we are most proud of. We learn and we unlearn, and win a truth after the labour of years, and cannot help putting a high price upon it; and, indeed, it has a scientific value which I will not venture to dispute or to depreciate."

We have, in the present day, a manifest tendency to be proud of the knowledge which we possess, or imagine that we possess, of the internal operations of disease; but if we consider the very insecure basis for many of the speculations upon this subject, we shall hesitate before we assign to uncertain and often fruitless hypotheses a scientific character and value, which we deny to that more sure and important knowledge which regards the external causes of disease. There is probably no class of maladies in reference to which it is more important to attend to the remote and outward causes of disease, and to avoid being misled by attempts to explain the proximate cause and the intimate nature of morbid phenomena, than with respect to diseases of the nervous system. I shall not, I trust, be thought to depreciate the value of minute pathological researches. I believe them to be of great importance. But I am persuaded, that, in the present state of our knowledge with regard to many diseases, these researches and their results can claim only a subordinate position, and that they ought not to usurp the place of knowledge, which has a higher practical value and a greater scientific importance. In short, the knowledge that delirium or epilepsy may be induced by over-work and

(a) On Diseases of the Heart.

anxiety appears to be, in every respect, more valuable than any hypothesis or speculation as to the chemical or microscopical changes in the blood or in the brain which may be supposed to be the proximate cause of these diseased conditions.

Those who have done me the favour to attend to the description which I have given of the symptoms which result from over-work, from anxiety, and from various kinds of mental emotion, will anticipate the method of treatment which I am about to advocate. Indeed, if the symptoms have been correctly described, and assigned to their true causes, the method of treatment can scarcely admit of dispute.

The observations which I am about to offer upon the subject of treatment have reference chiefly to the less serious forms of nervous disease, sleeplessness, or disturbed sleep, with its usual attendants, lassitude, loss of appetite, palpitation, and the other symptoms which were described in my fourth lecture.

The first point obviously is, to ascertain the cause of the symptoms, and to determine whether it be still in existence, or whether it have ceased to operate. When the apparent cause of the symptoms is over-work, the patient must be warned to abandon his work for a time, or to lessen the amount of his labour, whether it be mental or bodily, if he have the power to do so. He should be instructed that the sleeplessness or the disturbed sleep which results from over-fatigue has a tendency to become habitual, and to induce other serious consequences. We must, however, carefully avoid giving unnecessary alarm to a patient whose over-work is the result of necessity; to a poor needlewoman, for instance, who works sixteen or eighteen hours a day, and earns, perhaps, as many pence, or even fewer. There is one piece of advice which it is of much importance to enforce upon all nervous patients whose employments are sedentary, or who are disposed to mope within doors. It is, that they should consider it a part of their daily work and duty to take active exercise for at least an hour in the open air. To this it is often objected, that they cannot afford the time; and the reply is, that if they will perseveringly act upon the

advice, they will save their time and their health. They will actually do more work, and they will be less fatigued and distressed by their labours. Advice of this kind I feel it my duty to give and to enforce very often upon the out-patients of the hospital, and in many instances I know that the result is very beneficial. I am convinced, too, that at least one half of these poor, exhausted, nervous patients might be quickly cured without one dose of medicine, by rest and by a nutritious diet. But the cures thus wrought by rest and food might be made to give wonderful statistical evidence as to the efficacy of any new globule or other method of treatment whose virtues it might be important to proclaim!

I have before referred to the importance of relieving the patient from any groundless fears as to the state of his bodily health. This is a point of such obvious importance, that it does not need to be further insisted upon. The anxious patient will often be half-cured by the assurance, that he has no disease which is not remediable; and to give this assurance is certainly one of the most agreeable duties which a physician can have to perform.

When all that is possible has been done for avoiding the causes of mental worry, and when all needful advice and encouragement have been given, we have next to direct our attention to the consequences, some of which will often continue long after their exciting cause has ceased to operate; while others are perpetuated by some persistent and unavoidable source of anxiety. Now, the first and the most frequent consequence of over-work or anxiety—the one, too, which, more than any other, is productive of further mischief—is restlessness, or some form of disturbed and unrefreshing sleep. And the chief cure for this, after the causes have been as much as possible avoided, is an opiate at bedtime. So far as I can see, it is of little importance what preparation of opium or of morphia is used. For hospital patients I generally order the compound soap pill; one advantage of which is, that its name does not indicate its opiate nature. The dose must vary according to circumstances. In ordinary cases, five grains of the pill, that is, one grain of opium, may be taken every night at bedtime. In a

case of much excitement, with extreme restlessness or a threatening of delirium, the dose must be double or treble that which I have mentioned. In such cases, however, the opium would be best given in a liquid state,—in the form of tincture, or the solution of the muriate or acetate of morphia.

The time for the continued exhibition of the opiate must vary according to circumstances, and will be much influenced by the success of the treatment. The object is to break the habit of dreaming restlessness, and to procure sound and refreshing sleep. In many cases this object may be attained by the nightly repetition of the dose for one week. It is seldom necessary or desirable to continue the medicine for more than a month, though in some cases it may be expedient and beneficial to extend the period considerably. In many cases I have found that the beneficial effects of the medicine have been immediate; the patient has slept soundly, the distressing dreams have ceased, the appetite has returned, and all the symptoms which depended on loss of sleep and loss of appetite have quickly disappeared. After a few nights of sound sleep have been procured by the opiate, the dose should be discontinued, and in most cases the patient will continue to sleep as well without the medicine as with it. There is, probably, no one medicine which has the power of quickly removing such a multitude and a variety of distressing symptoms as opium, when its action is really favourable in the cases to which I refer. It is not, however, to any specific efficacy residing in the opium, but to the marvellous influence of sleep in refreshing both body and mind, that the benefit is really due. The value of the opiate consists in the fact, that, on the whole, it is the safest and most certain means of procuring sound sleep.

The use of opium as a medicine is sometimes attended with unpleasant consequences, and it does not always effect what is desired. I proceed now to indicate some of the unfavourable results of the opiate treatment, and the precautions which ought to be observed in the use of the medicine. One of the most frequent discomforts attending the use of opium is a feeling of nausea and faintness either with or without headache in the morning after awaking. The best cure for this is a cup of coffee or tea, with some solid food,

followed by a walk in the open air. In many cases the opium, although at first it may disagree, yet produces no unpleasant effect after the second or third dose.

The nervous patients who require the method of treatment which I am advocating, almost invariably suffer from constipation,—a torpid condition of the bowels being, in fact, one of the natural consequences of the general debility which characterises the patients in question. Although the immediate effect of the opium is to increase the constipation, yet its ultimate tendency is to restore the regular action of the bowels by means of the invigorating influence derivable from sound refreshing sleep, and an increased appetite for food. The temporary constipation may readily be obviated by an occasional mild aperient—a seidlitz powder, or a compound rhubarb or colocynth pill. The inconvenience arising from the astringent effect of opium upon the bowels is so easily met and removed, that it would never deter me from giving the medicine in any case which appeared to require it.

One of the most serious objections to the use of opium, is its tendency, in some cases, to produce an effect the direct opposite of that which we require,—to produce wakefulness and excitement, instead of sleep and composure. It is only in a small proportion of cases that this difficulty arises. It may sometimes be overcome by changing the form of the medicine, or by increasing the dose of the opium or morphia, and, in other cases, by combining the opiate with a moderate dose of antimony—James's powder, or tartar-emetic—a combination which has been strongly recommended by Dr. Graves to procure sleep and check delirium in some cases of fever. It must, however, be admitted, that some patients cannot tolerate opium in any form or in any dose; and nothing can better show the value of this drug than the difficulty of finding a substitute for it. We may try henbane and hop, and these will sometimes effect our object; but their action is very uncertain in comparison with that of opium.(a)

(a) Since this lecture was delivered, I have found reason to believe that one of the best substitutes for opium in the cases referred to, is chloroform, in doses of from ♏x. to ♏xx., made into a draught with mucilage.

It is well to remember that an opiate enema will sometimes procure refreshing sleep when opium, in any form, administered by the mouth is either quite inoperative or productive only of distressing excitement or sickness.

But may not the frequent repetition of an opiate dose become a necessity for the patient? May we not be instrumental in making him an opium-eater? I admit that the danger of such an evil, if real, would be a very fearful one. There are few results of medical practice which I should regret more than the reflection, that I had in any way contributed to render a recourse to narcotics or stimulants habitual or necessary to a single patient. I believe, however, that a cautious use of opium is attended with little danger of leading to so terrible an abuse of the drug.

In giving opium to hospital-patients, I never tell them what they are taking; and one reason for preferring the compound soap pill, in such cases, is, as I have before intimated, that the nature of the medicine is not apparent from the prescription, if the patient should read it. The opium should be discontinued as soon as it can be dispensed with, —as soon, that is, as restlessness and frightful dreams have ceased to harass and exhaust the patient. The rapid convalescence, and the renewed health, and strength, and spirits, which are wonderfully promoted by securing sound and refreshing sleep, will generally enable the patient at once, and without difficulty, to dispense with the use of opiates. I should withhold opium from a patient who neglects any directions which I have given him as to exercise, diet, and the general management of himself, and whose restlessness and nervousness appear to result from such negligence. In other words, I would not encourage a patient to trust habitually to opium for the removal of discomforts which might be avoided by the exercise of self-control, and by obedience to natural laws.

I beg to make an earnest protest against the routine practice of giving opiates to every patient who complains of inability to sleep. Our first care must be to discover, and then to remove the cause of the sleeplessness. We shall meet with some indolent patients, for whom the best soporific is regular employment and daily active exercise in the open

air: for others, who are feeble, tonics and nutritious food will be the appropriate remedies; and again, in other cases, dyspeptic symptoms will cease, and refreshing sleep will return, under the influence of an occasional aperient and a carefully regulated diet. In most cases of this kind, the exhibition of opium would not only be unsuccessful, but positively hurtful.

I have the satisfaction of knowing, that, in several instances, by a temporary use of an opiate at bedtime, I have greatly assisted a patient to break through a habit of chronic intemperance. I will give some brief particulars of one case of this kind.

T. R., aged 40, a carpenter, came to the Dispensary on the 27th May, 1850. For some years he had been in the habit of drinking rather freely both beer and spirits; he had worked very hard, and had suffered much from anxiety consequent upon family misfortune and disagreements. For many months past he had suffered from frequent vertigo and headache; he had restless nights, frightful dreams, and spectral visions; his appetite was bad, digestion feeble, and he frequently suffered from sickness. He had been leeched about a dozen times for the vertigo, and he had continued to drink beer and spirits. Latterly he had been almost incapacitated for work. His countenance was expressive of much anxiety; his eyes were suffused, his tongue coated and tremulous, and his appetite bad. I ordered, on the 27th of May, pil. saponis c. gr. x. om. n.; a mixture of rhubarb and magnesia occasionally. To discontinue the use of beer and spirits.

On the 31st of May he was rather better, and the sleep was somewhat quieter.

On the 3rd of June, the dose of the compound soap pill was reduced to five grains, a mixture containing the sulphates of iron and quinine was substituted for the aperient mixture, and ten grains of compound aloes pill were to be taken occasionally.

On the 18th of June, the report is:—He has continued to take the medicine; he now sleeps well, without dreaming, awakes refreshed, and feels a pleasure in commencing his work at five or six o'clock in the morning, whereas before he

had some difficulty in being up by nine o'clock. He feels much stronger, and less nervous; has lost the dizziness; his countenance is much improved, the tongue is clean and not tremulous; his appetite is good. He has taken neither beer nor spirits, and he has resolved to abstain entirely. The opiate was then omitted, but he continued to take the tonic.

There can be no question that, in this case, the vertigo and other symptoms had been rendered worse by the leeching and by the continued drinking of beer and spirits, while the appetite and digestive powers were impaired. He was quickly restored to health by sleep, and by the recovery of the power to eat and to digest his food. In cases similar to this, after a man has been for a long time habitually intemperate, it is often less difficult for him to abstain entirely from alcoholic drinks than to take them in moderate quantities. I am not sure that this man has continued his abstinence, but I believe that he would return to me if he suffered a relapse.

The cases in which the opiate treatment is most rapidly and completely successful are those in which the nervous symptoms are the result of some past grief, or anxiety, or fatigue, the impression of which remains, and is perpetuated by the patient's inability to obtain refreshing sleep. In such instances, a few nights of sound sleep, procured by means of the opium, rarely fail to effect a rapid cure, and this, too, after the nervous symptoms have continued for many months, or even for years. The first, third, and fifth cases, the particulars of which I gave in a former Lecture,(a) are good examples of the beneficial effects of the plan of treatment to which I refer.

Another class of cases in which equal benefit is often derived from a similar method of treatment, are those in which nervous restlessness has been induced by continued over-work, whether mental or bodily. In such instances, it is obviously desirable, as I have before intimated, that the patient should rest, or diminish his labours, if possible; but the patient may assure us, that he has no alternative but to go on with his work, or to lose his employment, and with it his means of living. In such a

(a) Lecture III.

case, we may often prevent over-worked men and women from breaking down, and enable them to go on in comparative comfort by giving an opiate nightly for a week or two. Refreshing sleep will be induced, the appetite will return, and, as a consequence, the strength and spirits will revive. And the strength and spirits thus obtained are not false and artificial in the same pernicious way as the stimulus obtained from alcohol, by which too many are tempted in the circumstances to which I have referred. The temporary help which a languid body or mind derives from alcohol is generally followed by a corresponding amount of depression, and with this there comes a craving for a repetition of the stimulant. Another bad result of the too free use of alcohol is a loss of appetite and an impaired power of digestion. Now, the effects of the opiate plan of treatment, conducted with the precautions to which I have before alluded, are in most respects the opposite of those produced by alcoholic stimulants; for we seek, by means of opium, a natural remedy for fatigue, that remedy being sleep, which brings with it a desire for food, and the power to digest it. Alcohol is taken for the sake of the immediate stimulus; the subsequent depression is the drawback upon its utility as a means of keeping up the working powers. The object in giving opium is to obtain, not its stimulant effects, which are comparatively slight and transient, nor immediately its composing influence, but the refreshment which follows the latter, and which has nothing corresponding with it among the ordinary consequences of alcoholic stimulants.

My objections to the *abuse* of alcohol as a stimulant do not of course apply to the use of wholesome wine and beer as articles of diet by those who require them, and who appear to derive benefit from them. Moreover, there are certain cases of nervous disease in which some form of alcoholic stimulant may be given with great advantage, either alone or in conjunction with opium. I refer to cases of extreme restlessness, either with or without delirium, and whether resulting from intemperance or from grief, or watching or fatigue, when the bodily powers are very feeble, although under the mental influence there may be great

excitement. In these cases, repeated large doses of opium sometimes fail to procure sleep, but appear rather to have a depressing influence: the patient's skin becomes cold and is bathed in perspiration, while the delirium and excitement continue. In such circumstances, the continued use of the opium is not only useless, but injurious and dangerous, and the surest mode of arresting the collapse, and of procuring sleep, is to give freely either wine or brandy, or, in cases of intemperance, the stimulant to which the patient has been accustomed, with beef-tea, or some other form of nourishment.

It is scarcely necessary to observe, that in all cases of nervous disease we must carefully watch the signs of functional disturbance or of structural change in any organ of the body, and that we must meet such symptoms by the appropriate remedies. And although, in most instances, a tonic plan of treatment is required, yet we must not hesitate to resort to measures of depletion if they are called for by the occurrence of such organic disease as appears to need this treatment.

The cases which are least favourable either for the opiate or for any other plan of treatment, are: 1st, Cases of confirmed hypochondriasis or melancholy of very long duration, and especially when these have the character of religious despondency; 2ndly, Cases in which extreme nervousness has resulted from great terror, or from a sudden shock which has left a deep and durable impression upon the mind and nervous system; and, lastly, Cases in which the symptoms are perpetuated by some constant source of anxiety or sorrow.

These classes of cases, although very unfavourable, and often little benefited by any plan of treatment, whether medical or moral, are yet by no means hopeless nor always incurable. Their unfavourable and unmanageable character is, however, greatly confirmed when they are complicated with epilepsy; and this whether the epilepsy has been induced by a sudden shock of grief or terror, or whether it has supervened upon long-continued anxiety and nervousness.

It is beyond the limits of my present design to consider the treatment of confirmed epilepsy or of confirmed insanity.

Those physicians who are best qualified, by their sound judgment and by their great experience, to speak on this subject, are the most ready to admit how unsatisfactory, in a large proportion of cases, is any attempt to cure these terrible diseases when they are chronic and confirmed, and how utterly hopeless it becomes when the two forms of disease co-exist, as they often do, in the same subject. Few scenes can be more sad or sickening than those presented by the epileptic wards of a lunatic asylum.

The great prevalence of insanity among us is sufficiently indicated by the number, the magnitude, and the crowded state of the asylums, both public and private, which are scattered throughout the country. I have extracted from recent Number of the *Lancet* (February 5, 1853) the following paragraph, which is headed, *Insanity among the Working Classes*:—"An official report, just published by the parochial authorities of Marylebone, states, that insanity has lately increased to such an extent among the working classes, that none but those whose duties bring them into contact with the sufferers can form an idea of its fearful spread. There are no less than 494 chargeable to the parish. In St. Pancras, insanity also prevails to an unusual amount, especially among the humbler classes. It is to be hoped that this painful fact will be made the subject of official and medical inquiry, with a view to tracing its origin, and to retard, if possible, its progress."

It is gratifying to observe, that, under the influence of that humane and enlightened system of treatment which is now adopted in the hospitals and asylums for the insane, the number of cases of *recent* insanity in which a cure is effected forms a very large proportion of the total number admitted; and the proportion of cures appears, in fact, to be steadily increasing. In St. Luke's Hospital, the number of cures during the year 1851 was as high as 74 per cent.(a) Gratify-

(a) See the *Physicians' Report and Statistical Tables* for 1851. In contrast with the favourable results of treatment in cases of recent insanity may be placed the painful records of those asylums which are destined for the reception of pauper lunatics after the disease has become chronic and confirmed. Out of the 963 patients in the Hanwell Asylum when the

ing and encouraging as is this result, there is probably no one who will refuse assent to the proposition, that, as in all cases of disease, so especially, and, for many and obvious reasons, in cases of mental disease, *prevention is better than cure*. It is probable, too, that many cases of confirmed insanity, which resist the most skilful treatment, might never have passed into that incurable stage if preventive measures had been adopted before the full development of the disease. In describing the earlier symptoms, and the causes of those forms of nervous derangement which, in their extreme results, tend to fill our hospitals and asylums with the paralytic, the epileptic, and the insane, my object has been to direct attention to these cases at an early period of their progress, when they often admit of a speedy cure. I believe that any physician whose duty it is to prescribe for the numerous out-patients of a London hospital, may be the means of *preventing* as many cases of insanity and epilepsy in one year as can be cured during the same period in any hospital or asylum in the kingdom.

But we have not discharged the whole of our duty with reference to these terrible diseases until we have pointed out the fact, that, in a large proportion of cases, their cause lies deeply rooted in some of those social evils which are beyond the reach of the materia medica. There appears little reason to doubt, that the chief causes of insanity among the working-classes are these—1st. Their dwellings are in general, and for many obvious reasons, unfit for the habitation of human beings. 2nd. A large proportion of the occupants of these dwellings, though living in a Christian community, are in a state of almost heathenish ignorance. 3rd. The atmosphere of the greater number of the workshops is as injurious to health as is that of the private dwellings of the poor. 4th. The time of daily labour is often much too long, and this, in many cases, is rendered necessary by a very inadequate remuneration for the work done. 5th. Intemperance is a very prevalent vice; and, indeed, it appears to be almost a necessary consequence of

last *Report of the Committee of Visiters* was published, Dr. Begley states, that "the possibly curable do not exceed fifteen in number, and of these probably not more than ten will recover."

the four first-mentioned conditions: for men, and, alas! women too, fly to the gin-shop to escape from their wretched homes, to drown in the oblivion of drunkenness the cares and troubles of which they have never been taught the origin or the end, and to seek a temporary relief from the physical exhaustion occasioned by excessive labour in an impure and overheated atmosphere. Insanity appears to be a natural product of such a soil as this.

As the pathology of insanity can never be fully comprehended by those who seek for it only in the morbid anatomy of the brain, so its prevention, to the greatest possible extent, cannot be accomplished by any of the agents which are included in the list of our materia medica. It scarcely need be added, that for *the right use of the materia medica*, as well as for the credit of ourselves and of our Profession, it is as important that we should know what is unattainable by medicines, as that we should be well instructed how to accomplish that which is possible by these means.

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