mornings to pick up eggs that their ducks laid in a field at the back of their garden; and, seeing one in the adjoining garden, he crossed the fence and brought it home with the rest. In the afternoon, the owner of the garden came and said that he had made a hole in the top of an egg and put strychnine into it, and placed it in his garden to poison magpies; and this must have been the egg the boy had eaten, for the man who placed it there, when he got up, went out to take it away lest an accident might occur, but it was gone. Imagining that the magpies had taken it, he was quite contented, until he heard that a boy was poisoned by eating an egg, when he immediately came and informed us of what he had done.

ON

THE SCIENTIFIC VALUE OF THE LEGAL TESTS OF INSANITY.*

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It is my object in this paper to examine the scientific value of the legal tests of insanity; and to show that the two professions, the legal and the medical, which frequently come into collision on this matter, approach it from points of view so widely separated, that their united action is at present almost impossible; further, that this is so, because the idea that is entertained by the lawyer as to what the word insanity means is so different from that which we hold to be true, that nothing less than hopeless confusion can often arise, when what we may term a not very friendly conversation occurs between the learned counsel and the scientific witness in a court of justice; and that it cannot be otherwise, if the present legal tests of insanity are maintained, in the present state of science. The unsatisfactory state of the law, in regard of this matter, is exhibited, and that with increasing frequency, year by year. We see prisoner after prisoner sentenced to be hanged—in conformity with legal dogmata, as they are pronounced by our learned judges, but in spite of scientific protest that such prisoners are insane—and we see the sentence subsequently revoked, by appeal to the Home Secretary, who acts upon the advice of scientific referees, and of the judge who presided on the trial: the former often only repeating what had been urged in the evidence for the defence; the latter agreeing in the judgment which he was bound, legally, to oppose. My wish, in bringing the matter under your notice, is to take the first step towards the holding of a conference, that shall be quite friendly, between some members of the two professions, with the purpose of devising means for bringing the legal criteria of insanity into harmony with the facts of science.

The end to be obtained by the lawyer is identical with that set before him by the physician; viz., the diagnosis, discrimination, or distinction of insanity from sanity, and from feigned disease. The object of the two professions, when they come into contact, is the same; it is not then to determine what insanity is—i.e., in what it consists, what is meant by the word; but what are the signs, criteria, or tests of its existence. The medical profession may engage itself upon this prior question, and it has done so, in its study of the nature or pathology of insanity, in all its forms, phases, and degrees; and it is by reason of its having done this that it is able to furnish an account of its signs or tests. The legal profession has scarcely directed its attention to this point; it has regarded only certain forms and degrees of insanity, and these from a particular position, and with a special object; and it is because it has occupied that position, has been thus limited, and been actuated by that special motive, that it has erected its distinctive marks of the condition. We of the medical profession regard insanity of mind as the outcome of a diseased state of the body, having a definite origin, causation, development, and history; the presence of which can, in a few cases, be at once recognised by some rough sign or coarse symptom, such as great disturbance in the thought, feeling, or conduct of an individual, but which often, and for a long time, presents no such obvious and wide departure from the state of mental health, and yet may be as surely present, and as familiar to the skilled observer of bodily as well as mental changes, as if there were raving frenzy, the most obvious delusions, or the wildest crime. The legal profession, on the other hand, regards insanity in its relation mainly to gross criminal acts or to capacity for the disposition of property; and it sees nothing, and avowedly knows nothing, of the disease except in this narrowed field—narrowed often not only in regard of place but of time—and it

has drawn sharp lines, and has insisted upon distinctions which it is comparatively easy to draw or make, but which, I humbly venture to say, are artificial lines, untrue to Nature, and the recognition of which is fraught with danger to humanity and justice.

In order to establish the position I have assumed, I propose to examine *seriatim* the scientific value of the legal doctrines with regard—1, to the tests of insanity generally—i.e., as to what is legally understood by the words “insane” or of “unsound mind”; 2, the legal test of insanity when this condition of mind is made the plea of innocence in criminal trials; and 3, the legal dogma in respect of mental capacity—testamentary and other—in cases of alleged mental weakness, or of “partial insanity”.

My object is, not to point out all the criteria of insanity that we, as medical practitioners, should employ—this would be a work far beyond the limits of my time and your patience—but simply to show that those which are now legally employed are unsatisfactory and untenable, because opposed to scientific knowledge.

1. As to the legal doctrine with regard to insanity generally, Shelford (Leonard Shelford, *Practical Treatise of the Law concerning Lunatics, Idiots, and Persons of Unsound Mind*, 2nd edition, 1847) gives this definition of sound and unsound mind. “A sound mind is one wholly free from delusion; an unsound mind, on the contrary, is marked by delusion” (p. 41). “The true criterion, the true test, of the absence or presence of insanity.....may be comprised in a single term, namely, delusion” (p. 42). Delusion is thus defined by Shelford: “A belief of facts which no rational person would have believed” (p. 42). It is, says he, “the true and only test. In the absence of any such delusion, with whatever extravagances a supposed lunatic may be justly chargeable, and how like soever to a real madman he may either speak or act on some subjects or on all subjects; still, in the absence of anything in the nature of delusion, so understood, the supposed lunatic is not properly or essentially insane”. (P. 42). The term “lunatic means every insane person, and every person being an idiot or lunatic or of unsound mind” (p. 6). (8 and 9 Vict., c. 100, s. 114; c. 126, s. 84.)

Regarded from a scientific point of view, this cannot be held to be a correct definition or safe criterion of insanity. It is incorrect, because many insane persons have no delusion; and it is unsafe, when delusion is said to be present, because the value of delusion varies between the widest ranges possible; and although sometimes recognisable as such with the greatest ease, it is, at other times, scarcely separable from the errors of judgment committed by those who are indisputably sane.

In the earlier stages of a well-known form of insanity, viz., melancholia—that kind of disease which has very frequently led to suicide—there is often nothing which could be called delusion. There is an overwhelming, crushing feeling of unrest, distress, fear, or actual terror. The patient cannot find comfort anywhere; he may be surrounded by friends and circumstances of the kindest and most favourable sort, but the past to him seems gloomy, or only a painfully bright contrast with the present shade, while the future, both in this world and the next, lies hidden in impenetrable and oppressive darkness—a darkness that may be felt, but cannot be expressed. In this state the patient often admits that he knows not what is troubling him; that there is no reason why he should not be happy; that there is nothing which he ought to fear; but yet, in spite of reason and assurance and fact, he is dejected, sleepless, hopeless; “man delights him not, nor woman neither”; life is a burden he would gladly cast aside, death is a horror he dare not face; and yet his torment becomes so great and so intolerable that the idea, or the impulse, which has perhaps often, for a moment, presented itself to him before, and has been shrunk from with alarm and loathing, becomes realised; an open window or a river furnishes the opportunity, and, so far as we can tell, the misery is over. The physician knows that this is a form of bodily disease, with a history as definite as that of measles; an inquest is held upon the body, and the verdict, returned without delay, is that of death in a condition of “temporary insanity.” Insane undoubtedly the patient was, but his condition was one in which there was no delusion, and, tried by that test, he should have been pronounced sane, and condemned to a felon’s grave. But common sense is sometimes found in a Coroner’s court, and it overrides legal definitions; and, moreover, common humanity is almost always there, and it deals tenderly with all those whose troubles have driven them to take refuge somewhere beyond the reach of our assistance, solace, praise, or blame. This action of the jury is an instructive comment upon the nature of the case I have attempted to describe. It shows the kinship of the jury, supposed to be sane, with the melancholiac, pronounced to be insane. The latter does that which is against his reason, against his conviction of right, to the urgent distress, as he well knows, of

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those about him, and who are to him most dear, and with a persuasion that he is passing to woes that he sometimes *believes* may be infinite, in order to escape from woes that he *feels* to be intolerable. The jury acts on feeling as it were instinctively, or with a blind impulse, and often distinctly against conviction of right, and with no delusion. The jury does not admit—human conscience will not admit—that suicide is in itself a test of madness; and yet, when the case comes before it, and it has to give a verdict upon A or B, it acts, like the melancholiac, upon *feeling*, and softens its own admission of insanity by the meaningless or most inappropriate qualification “temporary.”

A lady of great mental power and culture attempted to destroy herself, but failed, and was horrified at her conduct, and for weeks was the subject of intense remorse. Persuaded that her conduct was the result of physical disease and not of moral depravity, she regained composure, and for many months appeared quite well. But, suddenly, another desperate, and this time successful, attempt at suicide was made; many hours, however, elapsed between the injury she had inflicted and its fatal issue, and during this time her repentance was profound, and she could neither give an explanation nor attempt a justification of her conduct. She had no delusion; her sense of right and wrong was of the keenest kind; she acted upon a blind morbid impulse, the result of cerebral disease, for which she was no more accountable or responsible than would be the man who, in a fit of delirium from typhus fever or inflammation of the membranes of the brain, should jump from a window or brain his attendant with a hammer.

It is not only so with melancholia, but it is true of all forms of insanity, as I have already said, that the condition is one of disease of the nervous system, having close analogies with disease in other organs or systems of organs; and, like other diseases, it has its history, and owns no sudden and abrupt commencement, and has no invariable pathognomonic sign. It often happens that the apparent commencement is abrupt, that something an individual has said or done has been so unlike what had been expected, that friends begin to think there must be something wrong. It may be, but it very rarely happens, that some obviously insane delusion, rambling talking, absurd or violent conduct, is the first fact that has awakened suspicion of insanity. Usually such suspicions have existed for a longer or shorter time; and when they have not done so, it is because those who should have entertained them have been either slow to observe, and slower still to think, or have been blinded by prejudices, which, in the relatives of one unquestionably insane, are sometimes so strong that they furnish evidence of the family and hereditary taint of mental failure, shewing itself in another phase. How often it happens, the physician knows full well, that, when insanity has declared itself in this way, the friends, looking back into the past, recognise—in the words or silence, in the conduct, the apathy, or inaction of the patient—that which should have been a warning or a ground of action; that which was regarded as a mere whim, or oddity, or dulness, or bad temper, or perverse judgment, or pardonable vanity, but which now is distinctly seen to belong to a train of symptoms gradually leading up to the present phrensy. Known as a whole, known intimately, there has been no sudden change; there has been slowly progressing disease, and that which seems abrupt is abrupt in seeming only; there is a difference in the kind of revelation that is given to us, but to the individual the conduct and the words come as naturally from the perverted thought or feeling as they did in months or years that have gone by. Often some accidental circumstance, some apparently trivial event, may be the determining cause of the outbreak—the immediate precursor of the declared symptoms; but the conditions have been there before, and, as in the old adage, the new event was but as “the last straw” that made the burden intolerable, that led to the terrible *dénouement*. The back had been bowed down, and, wearied with its burden by accumulating weight, had groaned, audibly or inaudibly, beneath it through long weary hours or years, and it needed but an additional “straw”, a mere trifle at the last, to break through the barriers of reserve, to master the overstrained powers of resistance, and bring disorder into the place of order or seeming order, madness into the place of calm.

It is by an investigation of insanity in its early stages that the physician appreciates its nature, and learns to know its signs. Everything which can throw light upon its possible causation has to be taken into account in his diagnosis. The influence of hereditary taint is such that it requires his closest attention. The presence or absence of insanity in parents, ancestors, or collateral relations will be duly regarded; but not only so, the existence of a neurotic, or morbidly nervous propensity, in the family of a suspected person has its influence upon his judgment. We meet, for example, with epilepsy in a relative, or hysteria, or intemperance, torticollis, or some erratic nervous pains; we learn that some of the family suffered early from paralysis; that

such an one was “queer”; that another could “never be made to do anything”; and that, as a whole, there was “a something strange” in many of the household. Further still, we know that insanity has some kind of relationship with those enfeebled states of nutrition that go by the names of tuberculosis, scrofulosis, and the like; and that, with them, it may sometimes be found diffused, in a variety of forms, among those who have been the offspring of repeated intermarriages of relatives. Again, we know pretty well some of the most frequent determining causes of the affection—such as intemperance in regard of alcohol; venereal excesses; over-exertion of brain, especially in youth; worry and anxiety in after years; the pressure of want; the struggle to maintain appearances; the concealment of grief; the bitter pangs of jealousy; disappointed hope; smothered affection; the constant wear and tear of petty annoyances, so petty often that the most provoking thing about them is to feel their littleness; and yet further, all those strange *emotions* which often conflict so fiercely with *thought* in regard of life and motive, the beginning and the ending, the whence and the whither of that strange, and yet best known, thing we call ourselves—those questionings that find no answers that will satisfy that self, however glibly or confidently they may come from the lips of those we love or have been taught to reverence; all those mysterious alliances that we have with a world we cannot see, but which, in some form or another, make up what we term the *religio*, or religion of our life;—these, any or all of them, enter into and mould and fashion the healthy brain to do healthy work; or, in undue order, or with extreme force from without, or by reason of some undue susceptibility within, disturb the growth of brain, derange the relations of its parts, upset the harmony of function, and result in an unsound mind.

But outside the region of mind and emotion, there are physical disturbances of great significance which the skilled physician can observe and interpret, but which might be unnoticed or even denied by the patient and his nearest friends. A gentleman had a trifling source of annoyance; was sleepless at night, worried in the day; he took a holiday and change of air, but was still uneasy and distressed; admitted that there was no cause for his anxiety, and talked rationally on everything. He seemed, however, to attach an exaggerated importance to his own position and that which had disturbed it. He always “thought rather much of himself:” “there is nothing in that,” said his friends; but he every now and then “clipped his words,” and his lower lip trembled, and his gait was in a trifling degree unsteady, his legs a little wide apart, his step short and uncertain. He would not admit it; his friends saw no difference in him in these respects. One pupil was a little larger than the other, but I could not ascertain when this alteration had commenced: his sight was good. A week or two after my seeing him, he made a desperate attempt at homicide, apparently unprovoked: he knew and admitted that what he had done was wrong, said that he should or ought to be tried for it, and be hung, and be damned, but that he should do it again if he had the chance, in spite of all its wickedness and consequences. Some time afterwards, he told me that he was “the Holy Trinity”; and I need not tell medical men that he passed into a state of “General Paralysis of the Insane.” Here, for some weeks, the most characteristic features of disease were physical, not mental; and he could not have been legally pronounced insane, although medically we should have said that he had most serious brain-disease.

When we contrast the condition of an acknowledged lunatic at the present time with that which the same person exhibited ten years ago—and with regard to whom there would be no difficulty or doubt in affirming that now he is insane, and that then he was of sound mind, memory, and understanding—we may learn much with regard to the legal and the medical criteria of insanity, and may see plainly the wide divergence between the views and the methods of the two professions. According to the theory and practice of the one, there must have been a period when this individual passed, as it were *per saltum*, from the one condition to the other; according to the knowledge of the other, the transition has been so gradual that no such sudden leap was ever taken. The mental state and capacity might have become the topic for legal inquiry at any period of those ten years; and, according to the practice of the one profession, a definite answer would have been demanded from the other as to the presence of delusion and the time of its appearance, or of the knowledge of right and wrong; and by these standards, these convenient but arbitrary lines, the judgment and decision of the jury would be ordered; but, according to the other, there would be often an impossibility in affixing any such value to so-called delusion, in determining the period of its passage from a fancy or odd notion into a fixed belief, or in saying when there was a distinct perturbation, supposing it to exist, in the knowledge of right and wrong. The one profession would practically say,—here is a line sharp and hard, and the accused must stand on one side of it or on the other, and may have done so at all periods: we should reply,—the line that you draw

is artificial, would include too much, and exclude too much; or, it has no bearing upon the case at issue; the man is insane—*i.e.*, of diseased mind, although he may have no delusion that we can discover upon any point or in any direction. We regard his family history, his early training or want of it, his habits, personal condition, circumstances, and health; we recognise in him the evidences of disease of nervous system, of feeling, of speech, of gait, of motion, and of conduct, and are convinced that he differs essentially from those who are sane.

The importance of this view of the matter may be made more apparent by reference to disease of another kind and of another system of organs. Let me take the illustration of a "fatty heart" and of "angina pectoris". A man falls down suddenly and dies in the street or in his house, and *post mortem* examination reveals the existence of fatty degeneration of the heart, which is held sufficient to explain the occurrence; and the death is, and with propriety, referred to natural causes. Sometimes he may have been subjected to violent emotion, to over-exertion, to prolonged abstinence, to the depressing effects of chloroform, or to other influences which may be regarded as conducive to this end; but in other cases no one of these influences can be detected; there has been nothing "out of the way", nothing that could of itself be supposed to exert such a baneful influence upon even an enfeebled heart. Upon inquiry, we may find that ten years ago this man was robust in frame, of unquestioned health and strength; that he had no sense, no warning, then, of the impending evil. Nay, we go further, and assert that, to the best of our knowledge, he was at that time sound; but during those ten years there has been a gradual failure; very slight may have been the indications that it gave at an early period; they may have attracted no attention from any one—not even from the sufferer himself; there may have been nothing pointing to the heart; he may have mentioned occasional, uncaused weakness, uneasiness of breathing, or the sense of breathlessness, of tired limbs, and the like; and these may have been referred to the fatigue of business, the sharpness of the air, the slight ascent of the road on which he walked, and all may have passed away; or he may have kept all to himself, and said nothing but cheery words, and strained himself to keep up to his earlier standard of walking, of playing, or of work. But time goes on, and the discomforts become more controlling, and the doctor is called upon, and the patient is told that his "heart is weak", but that there is "nothing organically" wrong; that there is no "valvular disease". So it often happens that he is rallied, and puts himself to his neglected exercise, thinking to throw off the weakness, or to call back his strength. He faints, and narrowly escapes with life; takes more care; his over-exertion explains all, and he will be wiser for the future. He gradually accepts diminished power and a narrower field for work; but some day, perhaps while resting in this even narrowed field, the great crisis comes, and there is an end of the trouble and the pain.

Now, if we were asked *when* did fatty degeneration begin; when was it present to such a degree as to render the man incompetent to climb a mountain, when to run up a hill, when to walk up an ascent, when to walk on the level, when to do this or that, or when to live or when to die, we should have a series of questions, which might sound very clever, but which could not be answered, because the knowledge that we can gain is not fine enough for the purpose. We may say that it is or would have been unsafe to have tried this or that, but we cannot affirm that the patient might not have gone through the exercise, and that without distress; but between ten years ago, when the man was healthy, and now, when he is hopelessly enfeebled, is moribund or dead, we can fix no date and say before this his heart was sound or sane, competent to do all that man might wish to do, and after this his heart was unsound or insane, incapable of being trusted to walk upstairs, incapable of allowing him even to sleep in safety.

The gradual damage to a brain and the insidious malnutrition of a heart have histories, like and unlike: failure in the intellectual and moral life is the outcome of the one; failure in the bodily power and the physical life is the fruit of the other; but each has or may have a slow course and progressive development; each may be disregarded in its earlier stages; each may furnish its occasional symptoms of alarm, and each may break out suddenly, or with apparent suddenness, and do its worst; but the physician knows that the course is, in the majority, slow, and slowly downwards; that the beginning is insidious and past his finding out; and that it would be but scientific arrogance to pretend to say that, during life, he could draw a definite and universally applicable line between varieties of health and actual disease, between fitness and unfitness for work, between competency and incompetency, between safety and danger, between sanity and insanity, between that which would not endanger life and that which must inevitably be the cause of death. In each particular instance he may, if well informed, advise wisely and well; but he can do this only by regard to all the circumstances and conditions of the particular indi-

vidual, and by utter disregard of all general and artificial lines, all arbitrary tests, and all and everything that interferes with his individual study of the individual case. His inquiries are based upon the recognition of a variety of symptoms, and we cannot rely upon the presence or absence of this or that particular sign. There is no vital function which is so simple as it sometimes appears to be in books. Nerve and muscle and vessel touch each other at many points, and become intermixed in action; life, healthy and unhealthy life, is complex in its simplest act; in its most intimate working we find the faultiness of our *differentia*; as we do, indeed, when we analyse to the furthest point the *differentia* of structure; and it is impossible, and may always be impossible, to say in which direction the first sign of failure shall appear.

If the illustration from fatty disease of the heart may serve to explain in some measure the view that we hold with regard to depraved or deteriorated nutrition of the brain, the example of "angina pectoris" may elucidate that which we entertain in relation to the more violent outbursts of madness or mania. Silently, slowly progressing up to a certain point, the changes upon which angina pectoris depends go on, and then comes a sudden, frightful pang, which, like a demon, tears the body, as it were, almost asunder, and then departs, "leaving it half dead", but only to return again and again, provoked or unprovoked, until its work is done. Vague threatenings, other and outside symptoms, often misunderstood or disregarded, have been the heralds of its approach; but between the times of attack, it is wonderful how calm and free from all physical distress the patient may not only appear, but be. And yet, there is the disease ready at any moment to break out, and certain to do so at no very distant day; but not even the most skilled auscultator may detect its presence; not even the most experienced physician can say when the next pang shall come. If we were to attempt to apply to such a disease any such test as that which is required in the case of insanity, it is obvious that such application would be absurd; for, during it may be long years before the distinctive symptoms had presented themselves, the conditions upon which they depended had been gradually developing, and had rarely failed to give some notice of their presence, and the distinctive features are found to be but an exaggeration of what had been felt before; the lesser degrees were concealed or borne in silence, and the severer have rendered such concealment impossible.

We cannot draw the line between health and disease in such chronic maladies; and yet, according to the legal theory, it must be drawn, and men must be ranged, all of them, on one or the other side. It would appear as if the lawyer regarded the passage from sanity to insanity somewhat in the light of the "transformation scene" in a pantomime—as a sudden leap taken, it may be, by the pedagogue, with his huge mask and ponderous clothes, and more ponderous manner, into the harlequin, with his lithe limbs, bodily contortions, and fantastic fooleries. And he is right, but thus far only, that sometimes the change does seem sudden and astounding; but it is so in seeming only; the clown and harlequin, the pantaloon and columbine, were all there before; under their flatulent dresses, their painted faces, their solemn voices, and their stately steps, there lay hidden the arms and legs trained to antics as unlike the movements that preceded them as are the ravings of a madman to the calm and dispassionate discourse forced on himself by one who sometimes feels that he is not what he tries to appear, quite sane. The difference is this, that the pedagogue of the early scene might have been stripped and the harlequin revealed: here we have to deal with dress; but we cannot so strip our patients; and, fine as is much of our diagnostic power, it has not yet reached the point that is required of it by the legal tests; and it is worse than absurd to ask questions that can have no answer, and then act upon some principle that is altogether wide of them. I might be asked, Can you physicians, by inspection of the dead body, always say that the mind was either healthy or diseased? and I answer emphatically, No; but I assert that the history of disease during life is obvious enough, and as obvious as that which exists in other classes of morbid change, and in other systems of organs.

Enough has been said to show that the presence or absence of delusion cannot be regarded as a sufficient test of the presence or absence of insanity, and that the latter is a disease which is often not only wanting in regard of this symptom, but which is recognisable by other and much more important signs; viz., changes in feeling or emotion, and in habitude of mind rather than in the special deviation of its workings; in a loss of power rather than in a perverted action; and in certain evidences—outside the range of mind or *morale*—of altered nervous state, such as paralyses, tremors, and the like. But further, delusion when present, varies in its value between such wide extremes, that it would be hopeless and unjust to constitute it as a test. Shelford defines it as a "belief of facts which no rational person would have be-

lieved" (*loc. cit.*, p. 42); and this, so far as it goes, may be accepted. But who can decide what and how much a "rational person" may believe? Some people are credulous and some are sceptical; some believe only in themselves, while some place implicit confidence in certain statements that come to them with a special kind of authority. There are "rational" people who believe many things that others consider absolutely irrational, and which they utterly discredit. The things, the propositions, the notions of right and wrong, that were received as true by masses of educated persons a hundred years ago, and in this country, are, many of them, rightly or wrongly, utterly repudiated now. There is change in regard of credible things; there is addition and elimination; and we believe that there is growth, and that "the thoughts of men are widened by the process of the suns". Some of us believe that we are wiser than our fathers were, and know more than our fathers did; but some think that we are now following only the cunningly devised fables of science, and that we should do well to swallow a few large camels in order that we might not waste energy in straining at insignificant gnats. But with regard to delusions, it is obvious that their range is wide; and that, with respect to some alleged delusions, it is simply impossible to bring them into contact with fact. For example, regarding all those morbid ideas which have to do with the feelings of misery that some lunatics entertain with regard to the course of their own thoughts—that their imaginations, wishes, and purposes, have been wicked to a degree that is beyond that of other human beings—who can say when and at what point this feeling of personal sinfulness is morbid, and when and where it is, according to the belief of a large number of good people, and in conformity with certain printed books, and certain texts of very high authority, but the most hopeful sign of the commencement of a religious life? Very often, however, some feelings of this kind have passed on into the condition of melancholia, or of mania, or of some other form of declared insanity. Again, a common class of delusion is that with regard to the affections—esteem and confidence of others; but who in every instance can measure the value of the ground upon which these alleged delusive notions rest? In the presence of any third person, A may treat B with all the kindness and consideration that B requires; but when alone, there may be an altered manner, a silence, a tone, a look, a gesture, that shall be quite enough to account for the notion that all is not as it used to be; enough sometimes to convert a so-called delusion into a very real and disagreeable fact. When a man says that he is Julius Caesar, or possessed of countless millions of money; when he affirms that his legs are made of glass or his head of butter; that he is the Devil impersonate, or the Holy Trinity, there can be no hesitation as to the mode of treatment (both social and individual) that he requires. If he really believe his statements, he has a delusion, and is undoubtedly insane; but when his, as it appears to others, unreasonable idea or delusion is, that his wife is unfaithful to him, or his son unkind, or that some friends have altered their feelings to him, since his condition, it may be, has changed from prosperity to adversity, who can tell how much truth there may be in all these assertions? or, if no real truth, how much there may have been which should justify, in one depressed by circumstances, the ideas and the feelings he had entertained?

I do not for a moment wish to underrate the occasional value of delusion as an indication of insanity; but I reaffirm that it is not always present, and that, when present, its value, as a sign, is of very variable amount, and may be nothing.

ON SOME OF THE SYMPTOMS PRODUCED BY URÆMIC POISONING IN CHRONIC BRIGHT'S DISEASE.*

By P. W. LATHAM, M.D., F.R.C.P.,

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[AFTER referring to the importance of being able clearly to understand how the various symptoms in chronic Bright's disease are produced, Dr. Latham proceeded as follows.] It is to Dr. George Johnson that the merit is due of having discovered the true cause of one of the complications of this disorder, viz., the production of hypertrophy of the heart—hypertrophy, that is, without valvular defect, and more especially of the left ventricle. He has pointed out that in chronic Bright's disease the morbidly altered blood is impeded in its passage through the minute arteries not only of the kidneys, but of the system; the impediment being caused by excessive contraction of the muscular walls of these vessels. This contraction in time develops hypertrophy of

the muscular coat, the existence of which can be demonstrated after death, when the minute arteries are examined under the microscope. As the tonic contraction of the small arteries opposes the passage of the blood, greater force is required to drive it onwards; and so the hypertrophy of the left ventricle is developed by the resistance offered to the circulation. The explanation is so simple and satisfactory as to carry conviction with it.

Now it appears to me that this excessive contraction of the small arteries in different organs will help us to understand several of the other complications which arise in Bright's disease, the endeavour to explain which has led to so much discussion. I will discuss first that paroxysmal dyspnoea or asthma which sometimes shows itself. I take this first, partly because, by means of auscultation and percussion, we can tell more readily what is actually going on in the lungs than in other organs; and partly because a very striking instance (which I shall presently relate) of this form of disorder came under my notice at the early part of the year, and led me to make the remarks with which I am now troubling you.

Let us consider what would be the result if excessive contraction of the minute branches of the pulmonary artery took place. There would be impeded circulation of blood to the pulmonary capillaries; and, though air would be freely admitted into the air-cells of the lungs, the patient would experience "want of breath": he would, in fact, be much in the same state as if he had embolism of the pulmonary artery, except that the obstruction, instead of being at the commencement of the artery, would be at its ultimate ramifications. At the same time, the heart tries with increased force to drive the blood onwards; there is increased pressure upon the minute branches of the pulmonary artery; and partly from this cause, and partly from the deficient amount of albumen in the blood, the serum filters through the minute vessels into the tissue and air-vesicles, oedema of the lung is developed, and thus in a secondary manner the dyspnoea is increased.

By what general and physical signs would such a state of things as I have here described be recognised? First of all, from the impediment to the aëration of the blood, the patient would have dyspnoea, or rather, as he requires free action of the diaphragm, orthopnoea. There would be a certain amount of blueness of the lips and skin; and, as the serum filters through the tissue into the air-cells and finer bronchi, coughing, with copious frothy and serous expectoration, would take place. With the expectoration of large quantities of serous sputa, there may be in some degree vicarious elimination of the abnormal constituent of the blood; or, during the paroxysm of dyspnoea, the amount of the abnormal constituent may be lessened by the action of the kidneys. The minute arteries would then be no longer so strongly excited to contract, and the dyspnoea for a time would subside.

On listening to the breathing of a patient under these circumstances, we should expect to hear the expiratory murmur generally over the lungs, but mixed up with moist rales; and to find the percussion-note normal, unless the serous fluid have driven all the air out of the air-cells, in which case we should find in the most dependent portions of the lung no respiratory murmur, and the percussion-note dull.

Now, at the time when I was considering these points, a particularly interesting case was recorded in the BRITISH MEDICAL JOURNAL for March 30th, by that very accurate observer and accomplished physician, Dr. Gairdner of Glasgow. It so well exemplifies the view which I have been led to adopt with regard to this paroxysmal asthma, that I am very glad to avail myself of the case as an illustration. The particulars are not recorded as having any bearing whatever on the condition of the minute arteries, but on account of the appearance and disappearance of certain cardiac murmurs. With that portion I shall not trouble you. I wish merely to direct your attention to the symptoms which the patient presented when he first came under observation, and which you will see, as I read the account, presented some difficulty as regards their explanation.

"J. D., aged 35, a hairdresser, was admitted to the Glasgow Royal Infirmary on January 8th, 1872. The description of his symptoms, which was recorded in presence of the clinical class on January 15th, was in many points that of a case of spasmodic asthma with nocturnal exacerbations, attended by wheezing and coughing, marked orthopnoea, and expectoration of frothy mucus, leading on to the end of the paroxysm. Notwithstanding a certain amount of dullness on percussion at both bases, the state of the respiratory murmur gave no sufficient indication of the cause of the distress; the urine was albuminous, of specific gravity 1010-1012, acid, pale yellow, with hyaline tube-casts and a few blood-corpuscles. There was a moderate amount of dropsy of the limbs, and the complexion bore strong traces of the anæmia of renal disease. The physical examination of the heart led to no very clear inference as to its condition—a rumbling prolongation of the first sound, which could not be definitely pronounced either exocardial or