A theory as to the proximate cause of insanity : together with some observations upon the remote causes of the disease / by Beverley R. Morris.

A THEORY

AS TO THE

PROXIMATE CAUSE OF INSANITY,

TOGETHER

WITH SOME OBSERVATIONS

UPON

THE REMOTE CAUSES OF THE DISEASE.

BY

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THE first chapter, on a Theory as to the Proximate Cause of Insanity, appeared a few months back in the "Provincial Medical Journal," as did also the last, on Spinal Irritation, which the author has appended to these observations, as he thinks it may tend in some measure to illustrate the more important matter which precedes it. The author has received much gratification from finding that his views on this most interesting subject, have met with the approval of several physicians who have made mental diseases their more particular study, and whose opportunities of testing their truth have been extensive.

York, June 20th, 1844.

CHAPTER I.

A THEORY AS TO THE PROXIMATE CAUSE OF INSANITY.

It has been admitted, I believe, by all pathologists who have directed their attention to the morbid appearances in cases of insanity, that their investigations have accomplished but little in pointing out the actual origin of insanity, which still remains a *vexata quæstio.* It is true that they have brought together a vast mass of information as to the remote or exciting causes, but we do not go to the bottom of the matter when we say that insanity is *caused* by, perhaps, twenty distinct and unconnected affections, mental and corporeal.

To ascertain satisfactorily the proximate and consequently actual cause of insanity, we must look much deeper, and trace the effect produced on the brain by these remote causes severally, and if it can be proved that in all cases one uniform condition of the brain exists, I think we may then safely conclude that abnormal state to be the proximate physical cause of insanity.

In the following remarks I shall endeavour to connect the morbid appearances generally with the state of the mind, and shew the manner in which both the mental and physical changes have been induced. To particularize would require a much greater amount of statistical information than we are at present in possession of. I cannot, however, help here expressing my regret that it has been so often the custom of

pathologists to pay more attention to the examination of the cranium than of the other regions of the body, many of them only recording the lesions observed in the brain. I do not find any fault with the minuteness of their inquiries on this point, but I should wish to see equal care bestowed on the notation of disease in the thorax, abdomen, and elsewhere.

In order to obtain the requisite information, it would be necessary to embody the results of *post-mortem* examinations in tables, embracing each region, and each organ, whether affected or sound; the species of insanity, as well as the particular passion or faculty distorted, should be noted, together with the duration of the disease before as well as after treatment; the previous state of the mind, the ostensible exciting cause, and other particulars, which I need not here specify. The amount of information obtained in this manner would be very great, for it is hardly to be expected that changes in such an important organ as the brain, should produce no effects on distant parts, which have evidently a very close sympathy with it in temporary affections; for instance, whenever a child is attacked with obstinate vomiting, we are always suspicious of the brain, although the other symptoms of an abnormal condition of that organ may be either very obscure or altogether wanting. On dissection, we probably find inflammation of the substance of the brain, with or without the effusion of serum into the ventricles. Here, then, we have extensive cephalic disease indicated by the disarrangement of the functions of a distant organ; it is of little consequence to the establishment of the theory I am about to bring forward, that other symptoms of disease of the brain coexisted with the irritability of the stomach; all I wish to prove is that it was a *symptom*, caused directly or indirectly by the disease set up in the great nervous centre; in this instance the brain is the only organ really implicated, the external effects emanating wholly from it, with no organic change in the parts manifesting them. If proper means are had recourse to successfully, the brain resumes its original condition, and the affection of the stomach, having no longer an exciting cause, subsides. In

this case we find a cause of short duration exciting an easily appreciable symptom; but it is not necessary that such immediate and tangible effects should be produced, to prove the intimate connexion existing between the brain and various organs of the body; the exciting cause in the brain may be slight, and the effects it produces may be also slight, and yet, if long continued, it will ultimately produce more palpable proofs of its power, in some of those distant disorganizations usually set down as accidental, and in no way connected with any affection of the brain.

The doctrine that insanity is a disease of the moral and intellectual faculties only, and curable by merely moral treatment, is now but little held; and it is generally acknowledged that it is dependant upon some physical change, but of what nature has never been very distinctly pointed out.

The theory I am now bringing forward will, I think, reconcile many discrepancies which have hitherto appeared in the history of insanity, and greatly aid us in the prosecution of our researches into the pathology of the disease in the dissecting-room.

It may be well to state, that I am now only treating of the *immediate* cause of insanity; the *remote* or *exciting* causes must be considered separately.

Some writers have taken very considerable pains to prove that insanity is always accompanied by *some* disease of the brain, and have recorded many cases to establish this position; assuming it as proved, I shall proceed to point out the particular affection of the brain which I conceive to be the immediate cause of the disease in question.

Insanity, then, I believe to be always caused by irritation of some portion of the brain, and not by inflammation in any case. The irritation may be idiopathic, in which case, in its early stages, no alteration of structure in the brain or elsewhere, consequent upon it, will be found; or it may be induced by either the irritation or inflammation (mostly of the chronic type) of distant organs, more particularly those which are usually observed to have some effect on the cerebral

system—viz., the digestive canal, the liver, the lungs, the genital organs. Here, however, we come to a very difficult point, and one which, with our present amount of information, from the causes above named, we are quite unable to settle; I mean in what cases those distant affections respectively are the effects, or the remote causes of insanity, and in what cases they are merely accidental.

This can only be satisfactorily ascertained by extensive and combined necroscopic researches; we might then not only determine this point, but also ascertain what effects were produced by each species of insanity, and we might possibly be able to shew what portion of the brain was affected when particular faculties of the mind were impaired.

I say *possibly*, because hitherto the investigations of pathologists into the effects of disease of the brain on particular mental faculties have been entirely inconclusive; at the same time this circumstance should only stimulate us to increased and more minute inquiries into a subject of, at least, very great interest. But at present I think we are without any certain evidence of the various faculties of the mind having each its separate portion of the brain; in other words, we cannot localize the faculties.

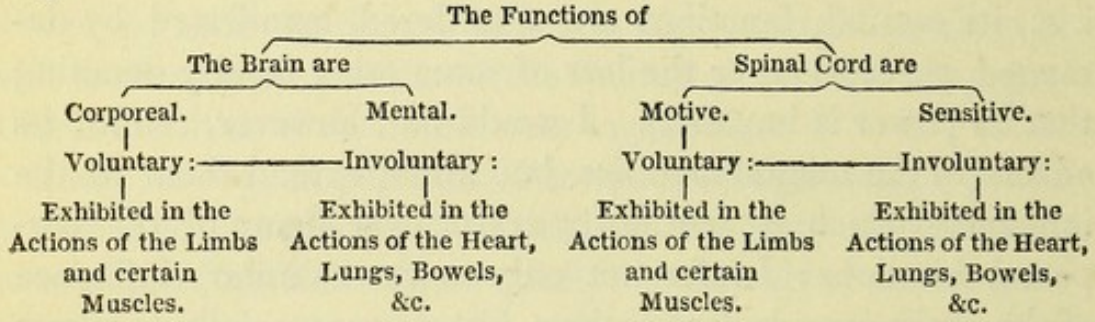
We find so much similarity in the structure and functions of the brain and spinal cord, that I think it is quite fair to infer that they may be similarly affected, and that, when they are so, analogous results may be expected; for instance, we find both *idiopathic* and *reflexive* irritation of the spinal column producing the same effects, though perhaps in a different order: thus, in a case of idiopathic irritation of a certain portion of the dorsal spine, we have an acute submammary pain produced; again, in another case induced by constipation of the bowels, we find, after a time, the submammary pain produced; and again, we may have both the submammary pain and the constipation of the bowels following idiopathic irritation of the same portion of the spinal column.

From these facts we may conclude, reasoning analogically, that in irritation of the brain we may have two sets of effects

produced—one manifested by some impairment of its mental faculties, and the other by the induction of some distant disease, either functional or organic, probably of a passive nature; the part, by the withdrawal of a certain portion of its nervous power, being unable any longer to resist the encroachments of disease. When irritation is induced in the spinal cord, we find that its ordinary functions are disordered—i. e., the nervous functions of the supplied part are deranged—usually manifested by diminished power. In like manner, I believe that, when irritation exists in the brain, its ordinary—i. e., its mental, functions are disordered, manifested by deranged perception, or the loss of some other faculty denoting that its power is impaired. I would not, however, confine its effects to the mental faculties, but would extend them to the influences which it manifestly exerts over many of the corporeal functions; I refer not only to the voluntary influence of the brain over various actions, but more especially to where it exerts an influence entirely independent of the will. That it does so act we have only to refer to the effects produced by disease of the brain upon distant organs. I here object to Dr. Gooch's supposition that insanity is a "*temporary conversion of human into animal nature.*" Were this the case, I do not see how we could reconcile with it the derangement and disease of those organs which are strictly necessary to animal life, as consequent on insanity; and yet most writers on the subject allow that such is the case.

With regard to the *causes* which induce irritation of the brain, I think they may be referred to two classes—one acting *through the mind*, which I would call idiopathic—the other acting through the *corporeal functions*, and hence I would call it reflexive. We thus find the analogy between irritation of the brain and that of the spinal cord to be complete. The mental faculties of the brain I conceive to be analogous to the strictly nervous functions of the spine manifested in disease by what are termed neuralgic affections. Its corporeal functions are of two kinds, voluntary and involuntary, and these are analogous to the voluntary and involuntary motive powers

of the spinal system; not that any spinal act is, strictly speaking, voluntary, except by being united with the voluntary nerves of the brain. The mental and corporeal functions of the brain are so closely united, that I think we shall never be able to separate them anatomically, and say that this is strictly mental and this corporeal. The following table will exhibit the close analogy existing between the functions of the two great nervous systems better, perhaps, than any other way. The ganglionic system I look upon as supplementary and adjuvant:



It is to a diminution in the action of the involuntary cerebral power that I would attribute those corporeal changes which are the almost constant attendants in one shape or another on insanity. During health, the spinal cord is enabled, by the assistance it derives from the cerebral system, to carry on those acts which are necessary to the perfection of animal life; when, however, the nervous influence of the brain is removed, or in any way diminished, it becomes unable to carry on effectively its work, and, by slow degrees perhaps, disease of some kind, always indicative of diminished power, is established. We find that melancholia is frequently consequent on an hypochondriacal state, dependant, of course, on deranged digestion—thus favouring the idea that there is such a state as reflexive irritation of the brain. This condition would probably be found conjoined with spinal irritation.

The *intolerance of bleeding*, which is mostly present in insanity, is a strong point in favour of my theory, that irritation of the brain is the cause, for we frequently find extensive bleedings to be the cause of spinal irritation, and, that, in its more aggravated forms, and these cases will not bear the

slightest depletion without manifest injury. Were insanity dependant on inflammation of either the brain or its membranes, we should find that extensive bleeding would not only be borne, but would be beneficial. Dr. P. Latham has recorded that, when the prisoners at the Milbank Penitentiary were exposed to malaria, and at the same time kept on low diet, diseases of debility made their appearance, and, lastly, when of course the debility was greatest, convulsion, delirium, apoplexy, and mania. He also records that bleeding was not borne at all.

There are, however, some cases of insanity which not only will bear moderate depletion, but absolutely require it; and these are either those in which the cephalic irritation is accompanied by a state of the system above par, or else complicated with inflammation, generally of its membranes. Too much caution, however, cannot be exercised in its use. Even in these cases, however, it will be observed that I charge the insanity to the irritation, and not to the inflammation present.

It may be well here to consider the state of the system in delirium tremens and puerperal insanity. In both, there is great vascular excitement, arising from irritability, and not from inflammation; in both there is great intolerance of bleeding; both diseases are generally found to occur in people much debilitated, suddenly or gradually, from some cause or another, and in both the treatment is much alike in principle. Here, then, we find two diseases of the nervous system exhibiting symptoms of irritation of the brain; both curable by measures calculated to allay such irritation; and both shewing an intolerance of bleeding, entirely inexplicable on the supposition that they arise from inflammation. Indeed, the usual cause of delirium tremens—viz., the withdrawal of some habitual mode of exciting the circulation generally, is sufficient to induce us to set it down as a disease of debility rather than one of undue exaltation.

In certain cases of temporary congestion of the blood-vessels of the brain, we find temporary illusions produced;

were the cause continued, we should find its effects also to be permanent. During dreams it is probable that there is always increased vascular activity, if not congestion; this acting as an irritating stimulant to the brain, we find in some cases of dreams events recalled to the memory which had been long forgotten in its waking moments.

It is probably owing to the same cause that epileptic fits so often happen during sleep, generally towards morning, the usual time of dreams. Irritation of any organ we mostly find to be accompanied, if not caused, by congestion of the blood-vessels; in fact, there is such an intimate connexion between the blood-vessels and nerves, that it will be very difficult, if not impossible, to refer accurately the effects produced to the right system. In theory they are both perfectly distinct, but not in practice. It is probable—nay, nearly certain—that during intense thought the blood-vessels of the brain are in an increased state of activity; now, if this state be kept up for long periods, and constantly repeated, we may reasonably expect that some morbid change will be produced, more particularly in those cases where an hereditary predisposition exists; hence the probability that insanity may be induced by the too great application of the mind to any one idea.

Is it not also possible that in hereditary insanity there may be some morbidly delicate formation of the blood-vessels of the brain, which may render them unable to resist any extraordinary impulse? Their coats may be thinner, or they may be of a softer texture than is usually the case. In connexion with this supposition, it may be well to notice the fact that, in cases where insanity has been developed in one or both parents, the children born after such development are more obnoxious to the invasion of the disease than those born before it; this fact, of course, proving the increased debility of the parents since the incursion of the mental disease. The unusual delicacy of these children acts as the predisposing cause, and there is no greater reason for saying, that this state cannot be removed by appropriate treatment, than there is for asserting that scrofula is incurable.

It is also ascertained that where hereditary taint exists, those who in their childhood have suffered from convulsions are more liable to become insane than those who have escaped, during their early years, the visitation of such an indication of, at least, great physical derangement. It is also possible that those atmospheric causes, whatever they be, which induce periodic exacerbations, may act by stimulating the vascular system to the propulsion of a greater body of blood through its vessels, and that those of the brain, being unequal, from a morbid delicacy, to sustain with impunity the passage of this increased volume, become temporarily congested, and thus cause the paroxysms.

There can be no question of the fact of an hereditary predisposition existing; but it is probable that the cases set down under this head are more numerous than they should be, for the constant terror and fear which such persons must be in, of its development in themselves, would have a considerable effect in bringing about the very consummation they dreaded. This, however, would not account for all the cases, as there are many, who, being ignorant of the fact of its having existed in the family, yet become subjects of it. It is curious that in these cases the same species of insanity is usually developed that had existed in the ancestor; but this, of course, must be subject to considerable irregularities arising from varieties of temperament, &c. &c.

We find in some persons a much greater degree of resistance to the encroachments of disease than in others, and few will deny that this applies with equal force to mental as bodily diseases. This will account for the fact, that in some cases a trifling exciting cause, mental or physical, may produce such irritation of the brain as may be followed by the establishment of mental disease, while in others it may have no effect in developing any abnormal condition of that vital organ.

In this outline of my theory of the proximate cause of insanity, it may be thought that, having coupled irritation of the brain and congestion of its vessels so frequently together, I look upon them as synonymous terms; such, however, is far

from being the case, and although a congestive state of the vessels of some portion of the brain will very generally be found to accompany insanity, yet I believe its real cause to be irritation of the nervous structure of the brain; although it is very possible that we may have to act on the brain through the vascular system to remove such state. Neither the brain, nor any portion of the nervous system can bear compression, in any shape, and we consequently find that any invasion upon its limits is always attended by some manifestation of its dislike of restraint. In the nerves, this is shewn by neuralgic pains, &c. In the brain, generally by impairment of some of its functions, by headache, &c. This may be caused by the agency of any medium, either by the pressure of fluid, such as that from congestion of its vessels, or by the growth of bony or other tumours pressing upon any portion of its nervous substance. In these cases we find, if the compression is not carried too far, that the organ is only irritated; but unless the removal of this cause be possible, of course recovery must be hopeless. Any deposition in the cranium, such, for instance, as that arising from inflammation of any portion of the brain or its membranes, or that following injuries of the head, or the results of apoplexy, may cause such irritation of the brain as to induce insanity.

Having thus briefly stated the views which have led me to form this Theory of the Proximate Cause of Insanity, I now proceed to offer a few observations on the remote, or exciting causes of the disease, trusting that the importance of the subject may lead to its candid consideration in all its bearings, by which alone we can hope to arrive at a definite conclusion in any case.

CHAPTER II.

ON THE REMOTE OR EXCITING CAUSES OF INSANITY.

It will be seen from the preceding remarks on the Proximate Cause of Insanity, that I believe it to originate in a peculiar state of the brain, present in every case of the disease, and that I look upon what have hitherto been called the causes of insanity only in the light of remote or exciting causes; in which supposition I am borne out by the fact, as I believe, of every one of those causes, as they are called, existing in certain states of the system, without a development of insanity following, as the constant and necessary consequence. This irregularity and uncertainty led to a very great multiplication of these supposed causes; any lesion—more especially of the brain—which was found coexisting with insanity, was set down as its cause in that instance, and these particular instances having frequently been treated of as general, much confusion has, in consequence, arisen. I do not mean to assert that these alleged causes exercise no influence in inducing insanity, but that their influence consists only in their producing a certain state of the general system, which is peculiarly favourable to the development of irritation of the brain—the actual physical cause, as I conceive, of insanity. Such a state of the system I believe to be one of debility; and though insanity may, and occasionally does, occur along with a full bounding pulse, or with inflammation of some of the parts within the cranium, yet all these cases appear to me to be complications, such as insanity complicated with inflammation of the arachnoid, &c., just as we have complications of disease in other parts of the body—as, for instance, tubercular phthisis, complicated with pleuritis, &c.

I have before stated that I referred all the remote or exciting causes of insanity to two classes—to the one, those which

act through the mind; to the other, those which act through the corporeal functions. Both these classes of causes induce irritation of the brain,—that produced by the former class may be called idiopathic—that arising from the latter, reflexive. I proceed to consider those causes which act through the agency of the mind upon the brain, inducing what I have called — though the term may not be strictly correct — idiopathic, or mental irritation of the brain. Many subdivisions might be made of the causes comprised under this head, but it is not my intention to enter minutely into a strict logical division or definition of them, as but little practical advantage would, I think, result from such an attempt. Even to enumerate all the alleged causes of insanity comprised in this class would occupy too much of my space; it will be sufficient for my purpose to note a few of the most important, under which, as heads, most of the others may be ranked, and I shall offer a few remarks upon each as I go along.

I. Perverted or faulty education is, I have little doubt, a much more frequent inducing cause of insanity than is generally supposed. When a child has implanted in him any passions or appetites in a disproportionate or excessive degree, and in his education no endeavours are made to restrain or eradicate them, or to counterbalance their influence by the encouragement of other opposite qualities, which may originally be defective in degree, these passions and appetites become daily stronger. Untaught to control them when a child, they become uncontrollable in the man; the evil becomes stronger, while the power to resist becomes weaker, till at last the mind gives way in the struggle, and the man is the slave of passions without the will or the power to resist. Indeed, habits of self control—mental control especially—should be inculcated from the earliest years, for although the want of such habits of control may not always result in madness, or mental delusion, or even in what is called eccentricity, yet its effects cannot be looked upon in any other light than as vicious, and even the very best of our faculties may become perverted and debased by an excessive and misdirected exercise of them. Under this head of perverted

education may also be mentioned undue indulgence by parents, an education unsuited to the person's station and prospects in life, and a total neglect of education, properly so called.

II. Habitually ill-regulated mind and temper is another inducing cause of insanity; though, perhaps, properly it should fall under the former head, as being clearly a consequence of faulty education. The power of shifting the mind at pleasure from one subject of contemplation to another, and directing its sole attention and energy to the subject immediately before it, is a proof not only of a strong but of a well regulated mind; and from the existence of this power in a greater or less degree may be inferred the strength of a mind, and also the degree in which it is under regulation and restraint.

If any organ of the body is kept in full action for too long a period, it becomes wearied, and, if this is still continued, some morbid change takes place, and the organ is permanently injured; in the same way we find that the brain is frequently disordered by a too intense application of the mind to any pursuit, it first gets wearied, and then, no respite being obtained from labour, it finally becomes irritated, and mental incapacity, in some shape, is the result. Whenever the power of changing the current of thought from one absorbing subject to another is weakened or impaired, much mental injury is to be feared, and treatment of an appropriate kind cannot be too soon resorted to. The constant brooding over any idea or train of ideas disorders the functions of the brain, disturbs their healthy balance, and is too frequently the precursor of insanity, particularly of the monomanic kind.

III. Under certain circumstances, solitude acts on the mind so as to induce insanity; but in order to produce this effect, the victim must be so entirely excluded from all society as never to have an opportunity of hearing or seeing a fellow-creature, he must not be allowed to occupy his time in either mental or mechanical pursuits, and everything must be removed from his cell that can in any way prevent his mind from preying upon itself. But in some cases only a portion

of these adjuvants may be present, and yet insanity be the result. Of this we have had many melancholy proofs of late, though it is probable, that at any rate some of these cases may have occurred in persons who have laboured under a predisposition to the disease before being subjected to the exciting cause. It would have been well if the previous history of these individuals had been investigated, as the knowledge of this is essential to a due estimation of the effect of solitude as an inducing or exciting cause. Many things may have conspired with the solitude to derange the mind—remorse, anxiety, and fear for the future, one or other of them being constantly present, with nothing to divert the current of the thoughts, may have acted on a mind naturally weak and habitually ill-regulated, so as to induce mental delusion. However, no one will deny that solitude is a depressing agent, and therefore it may induce irritation of the brain, which seems to me to be always accompanied by general debility.

IV. All the depressing passions, acting of course as debilitating agents on the general system, are remote causes of insanity; among these may be mentioned grief, fear, fright, anxiety, disappointments of various kinds, &c.

V. In some cases the original depressing cause has been Nostalgia, or the grief that accompanies a separation from one's home and kindred; and this is not always the case when the return is hopeless, but even when it is merely deferred; the apparently long period before the desire can be gratified acting on a mind morbidly attached to the land of its birth: hope probably is a quality of such minds that has either not been cultivated, or else has originally existed but to a small amount.

VI. We seldom, probably never, find any of the exhilarating passions acting so as to assist in the production of insanity; joy has been charged with doing so, but I much doubt the propriety of allowing it to remain any longer in a catalogue quite long enough already without it. Those cases that are said to have originated in sudden and extreme joy, I should place under the next head—viz.:

VII. Sudden mental shock, which includes surprise of a

joyful kind, as well as that of a contrary character. It is not the joy or sorrow that inflicts the injury, but the sudden and unexpected mode of its communication; I would also refer many of those cases of insanity resulting from unsuccessful speculation to this head.

VIII. A considerable number of cases of insanity are said to arise from the excitement of religion. I think these may very frequently be traced to the injudicious and dangerous abuse of certain doctrines, others equally important being kept in the background, and the effects produced may generally be referred to fear. I do not however deny that there are cases of an opposite character, but I believe them to be rare. Might not many of these cases have been found to have arisen subsequently to the commencement of insanity, and so be a consequence rather than a cause.

IX. The excitement arising from politics is an occasional remote cause of insanity, nor can we wonder at this, when we look at the extreme excitement which is kept up during an election, though, perhaps, as in the last class, some of these cases might prove to have arisen subsequently to the commencement of insanity.

X. One of the most frequent mentally exciting causes of insanity is domestic unhappiness, and by far the larger number of cases occur in the female sex, doubtless arising from their having fewer external engagements to draw the mind from the constant brooding over its own wretchedness. In connexion with this cause, we should also probably consider poverty, which is very often at the bottom of domestic unhappiness.

XI. Disappointed affection, and disappointed ambition, are very common exciting causes of the disease under consideration, more particularly the first of them.

All these different causes of insanity, and many others which I have not mentioned, might, I think, very properly be comprised under four heads.

1. Perverted or faulty education.
2. Excitements.
3. Disappointment and distress of various kinds.
4. Sudden shocks of any kind.

It will be seen from the foregoing observations that I believe all these mental causes to act as debilitating agents. What is more common than to hear a person say, "Oh! I was very much shocked by such and such intelligence, and *have been fit for nothing since*"—and how constantly do we see hysteria, which we know to be a disease of debility, brought on by similar agents! Hence I would estimate the importance of any one of these exciting causes by the amount of depression, primary or secondary, that it is capable of producing; and, of course, this varies considerably in different individuals, arising from varieties of temperament, habits, and education.

In considering the physical causes which operate indirectly on the mental functions of the brain, much difficulty must, in the present state of our knowledge, be felt in deciding which are, and which are not, connected with the production of that irritation of the brain, on which such mental change depends. In order to obtain some sort of classification, I shall, as far as practicable, consider them as originating in the various regions of the body; and first of all, I may be allowed to place

THE PHYSICAL CHANGES IN THE BRAIN ITSELF, OR THE ORGANS IMMEDIATELY IN CONTACT WITH IT.

It will be remembered that I believe irritation of the brain may be caused by any pressure exerted upon its nervous structure, and such being the case, it will be easily seen how tumours within the cranium, or deposits of any kind act. In numerous cases of insanity, we find some change within the cranium; either there has been inflammation of some of the membranes, which are found thickened to such a degree as to cause an injurious amount of pressure on the delicate nervous structure around it, or we may find the remains of extravasations of blood, the results of apoplexy, or we may discover some exostosis growing from the internal table of the pericranium—perhaps the result of some severe blow; or it is very probable that we may only find the blood-vessels enlarged, either generally, or in some portion of the brain; but in all these instances, it will be seen that the same agent, pressure, is at work, and this is just as much the case when that pressure

is derived from fluid in the enlarged blood-vessels as when it is derived from an internal exostosis, though of course the chances of cure are much greater in the one case than in the other. When the irritation is kept up by any internal exostosis or spicula of bone, the furious paroxysms are usually constant, as might be expected, and we can hope for no removal of the disease; but when the irritation is caused by a congested state of the blood-vessels, we find that the exacerbations occur only periodically, and cases of this kind present many favourable points. A paroxysm of the disease will, in this last case more especially, be brought on by any increased activity of the circulation, from whatever cause arising, whether from alcoholic stimulants, the excitement of the passions, or from purely external agencies, such as peculiar states of the atmosphere, as when it is highly charged with electricity. Dr. Allen's supposition, that in the *permanently* insane, what are called paroxysms are only the irregular increase of the animal spirits from atmospheric causes, and not exacerbations of the disease, is ingenious and deserving of attention. Any one who has felt the extreme buoyancy of spirits produced in himself by certain states of the atmosphere, will easily understand how it may act on one who has lost the power of self-control.

Here perhaps should be noticed epilepsy, which is, in very many cases, the precursor of insanity. The constant and oft-repeated attacks of this distressing disease produce a paralyzing effect on the brain, and the mental faculties very frequently suffer more or less impairment. This is particularly the case when the attacks become of very frequent occurrence.

AFFECTIONS OF THE PULMONARY APPARATUS

Are very commonly attendant upon insanity, and are sometimes stated to have been the exciting cause of the disease; and I have certainly seen cases where the mind was impaired, in which the only physical disease I could detect was chronic bronchitis. However, I should be inclined to look upon diseases of the lungs in general more as a consequence than

a cause of insanity, and as arising from the debilitated state of the system; and in support of this I would remark that the diseases of the lungs usually found in the tables are of the chronic type, and more or less dependant on debility, and not on an active inflammatory condition. (The greater number are set down under the head of pulmonary consumption.) In these cases the supply of blood to the brain is deficient both in quantity and quality, either of which would be sufficient to produce great disturbance of its functions.

AFFECTIONS OF THE DIGESTIVE SYSTEM.

Intemperance is a very fertile remote cause of insanity, and it seems to act upon the brain in two ways; first, as a stimulant to the nervous and vascular systems, and, secondly, by impairing the digestive functions, and producing so much disturbance there as to induce reflexive irritation in the brain, and frequently also in the spinal cord. In the first case, the constant state of excitement in which the nervous system is kept, together with the state of depression invariably following, which acts as a strong inducement to a repetition of the cause, may be considered amply sufficient to account for any derangement in its functions, mental or corporeal. Cases of insanity which appear to be derived from this effect of drunkenness, should be separated from those in which the irritation of the brain seemed to follow the extensive derangement of some portion of the digestive apparatus, brought on by intemperance, which thus doubly acted in a remote way, as bringing on the distant organic change, which in its turn affected the great nervous system. We should also be careful not to confound those cases in which drunkenness was only a manifestation of insanity, arising after the invasion of the disease, and not preceding it, as in other cases. As might be expected, we find extensive derangements of the digestive system to be very often attendant on insanity, and the mental disease may, in many cases, be traced to the effects of this state on the brain; we also find that by attending carefully to the improvement of the tone of the stomach and bowels, we place the individual in a favourable state for the cure of the

mental disease. It is not uncommon for the insane to complain of strange feelings in the abdomen, such as of animals gnawing them, &c.; this will generally be accompanied by a red tongue, and other symptoms of extensive disorder, and must, of course, be attended to. I believe such feelings to be very seldom imaginary, and we should always examine into them with care.

AFFECTIONS OF THE GENERATIVE SYSTEM.

Celibacy has been mentioned as a remote cause of insanity, and it certainly appears from the tables that a large proportion of the inmates of asylums consist of the unmarried. May not this partly be accounted for by the irregularities and vices, which though not a necessary, are a too frequent consequence of the unmarried state? The following table gives the average proportion of the married, single, and widowed, in the Retreat, near York, since its foundation in 1796, to the present time, and those admitted into Hanwell Asylum during 1840-43. I have chosen these asylums, because the one is entirely appropriated to pauper patients, and the other chiefly to those in easy circumstances.

	Hanwell.	Retreat.	Total.
Married	305	117	422
Single.....	365	308	673
Widowed	96	44	140
Unascertained	13	...	13
			1248

Prostitution has been mentioned as another remote cause of insanity; I should feel inclined rather to consider the state of moral degradation in which the unfortunate females are placed as the real cause; but an extreme abuse of the sexual impulse in either sex may act as a highly debilitating agent, and in this way, we might expect, as is really the case, the majority of instances of this kind to occur in the male sex. The

changes which take place at puberty, there is little doubt, have considerable influence in developing insanity, particularly where it has an hereditary existence; the great revolution which then takes place, both moral and physical, is abundantly sufficient to account for this fact.

Lastly, I may mention

HEREDITARY PREDISPOSITION.

This is a very frequent remote cause of insanity, and if my theory be correct, the solution of this is not difficult; for if insanity be always preceded and accompanied by a peculiarly debilitated state of the constitution, can we wonder if the children of such parents should partake of that debility? Can we wonder at their inheriting the peculiarities of their parents? In all probability their education, moral and physical, will be of the same character as that of their parents; can we then be surprised at the same results following? Much, however, I am confident, may be done in eradicating hereditary predisposition to any disease, by the use of appropriate and rational treatment; but to effect this with any certainty, such treatment should commence in infancy, be continued with the child's growth, and should not be relaxed till he arrive at man's estate. Before this plan can be generally adopted, many prejudices will have to be overcome, and much false pride laid aside. Few are willing to acknowledge the existence of any hereditary disease in their family, such being considered a reproach, and generally a sufficient reason for putting a stop to a desirable alliance; and I confess with much reason, for who would wish to entail on his children's children, even the possibility of being afflicted with such a terrible disease as loss of the highest and best faculty of their nature. How anxious should be their endeavours to remove an hereditary taint, when it does without question exist. Every feeling of shame and false pride should be swallowed up in the all absorbing one of rescuing those most dear to them from what is far worse than death, the destruction of the mind.

I think it is Dr. Prout who says that the manifestation of a gouty diathesis in elderly persons, indicates an analogous state

of the system to that shewn by the existence of scrofula in its various forms during early age. May not insanity fill up the gap which is thus left, and indicate a similar state of the system in the period between youth and age? We should then find that those subject to scrofula in early age, would be probable subjects for insanity in middle life, and if they escaped this, for gout in old age. Looking upon insanity as a disease of debility, we shall find many points of resemblance between the three diseases, although it may not do to carry out the parallel too far; I merely allude to it without wishing too much importance to be attached to it. But should it prove correct, it might lead to important results in the management of the children of insane persons, in whom, of course, we should be led to expect a predisposition to mental disease; it will be remembered that I threw out a hint to this effect in my previous observations. These three diseases, perhaps more than any others, have been said to arise from hereditary predisposition.

I have given the following tables to shew the usually alleged causes of insanity; they are taken, with some little alterations, from Dr. Conolly's admirable reports of Hanwell Lunatic Asylum, to which I refer for further information on these subjects, to be gathered from a variety of tables, drawn up with much care and great labour, and embracing a vast mass of important facts, which will well repay the labour of an attentive perusal. It will be seen that I have not alluded to a large proportion of the exciting causes set down in these tables, which themselves are but a portion of those I might have accumulated: I have not done so, because my intention was rather to illustrate the theory I have brought forward than to enter minutely into details, which, however interesting in individual cases, do not, in my opinion, lead to any practical results generally; and if the principles I have laid down be attended to, no difficulty will be found in placing any particular alleged cause in its proper situation under its appropriate head. In the use of the term "cause," in the above remarks, I must all along be understood to have used it in its limited or qualified sense of "remote, or exciting cause."

Remote Causes of Disorder in 772 cases admitted into Hanwell Asylum during the four years ending September 30th, 1840—1843.

MORAL CAUSES.	Males.	Females.	PHYSICAL CAUSES.	Males.	Females.
Disappointed affections...	8	17	Epilepsy	49	39
— — ambition ...	1		Apoplexy	1	
— — views ...	2		Paralysis	19	10
Domestic unhappiness ...	12	26	Meningitis	2	
Poverty...	34	39	Injury of head	23	5
Reverses	24	7	Intemperance	104	17
Jealousy	1	1	Teetotalism?	1	
Fright	10	18	Opium eating	1	
Grief	5	27	Sensual excess	1	
Violent temper		1	Cold	1	
Excitement of religion...	7	13	Exposure to weather ...	1	
— — politics ...	2		Hot climate	4	
Conscientiousness... ...	1		Congenital defect... ...	12	12
Mental anxiety	11	9	Mother alarmed when pregnant		2
— application (extreme)	1		Impression on mother's mind when pregnant		1
Over exertion of memory	1		Ill treatment...	1	
Apprehension of loss of sight		1	Imprisonment	2	
	120	159	Fever	8	9
Hereditary disposition ...	46	20	Typhus fever	1	1
Physical causes	238	147	Nervous fever		1
Not ascertained	77	111	Metallic fumes	2	
	481	437	Disease of heart	1	
Deduct repetition from combined causes ...	81	65	Hepatic disorder		1
			Scrofula	1	
			Pulmonary consumption		1
			Influenza	1	1
Total	400	372	Over exertion	1	
			Fatigue...		2
			Over study	1	
			Hysteria		4
			Suppressio mensium ...		3
			Uterine excitement ...		2
			— irregularity ...		1
			Period of life		7
			Pregnancy		4
			Miscarriage		1
			Puerperal		16
			Milk Fever		3
			Nursing		3
			Age		1
				238	147

Remote Causes of the Disorder in 222 Patients discharged cured from Hanwell Asylum during the four years ending September 30th, 1840—1843.

MORAL CAUSES.	Males.	Females.	PHYSICAL CAUSES.	Males.	Females.
Disappointed affections..	4	5	Epilepsy	2	
— — ambition...	1		Paralysis		2
Domestic unhappiness...	6	8	Injury of head	8	4
Poverty...	10	12	Intemperance	51	12
Reverses	4	4	Teetotalism?	1	
Fright	3	2	Imprisonment	3	
Grief	3	8	Fever	2	3
Excitement of religion...	7	5	Scarlet fever...		1
— — politics ...	2		Measles...		1
Mental anxiety	8	2	Disease of heart	2	
— shock		1	Gastric irritation... ...	1	
Apprehension of loss of sight...		1	Hepatic disorder		1
			Hysteria		2
			Uterine irregularity ...		1
	48	48	Period of life		3
			Pregnancy		2
			Puerperal		9
			Nursing		2
			Age		1
				70	44
			Hereditary disposition...	22	5
				92	49
			Moral causes	48	48
			Not ascertained ...	22	25
				162	122
			Deduct repetitions from combined causes ...	41	21
			Total	121	101

CHAPTER III.

SPINAL IRRITATION—ITS CAUSES, SYMPTOMS, AND TREATMENT.

READ BEFORE THE MEMBERS OF THE YORKSHIRE BRANCH OF THE PROVINCIAL MEDICAL ASSOCIATION, AT THEIR ANNUAL MEETING, HELD AT YORK, JUNE 29, 1843.

I BELIEVE it is scarcely possible accurately to define *irritation*, it so closely approximates and so often runs into inflammation. Mr. Lawrence says, "that the term *irritation*, if used in contradistinction to *inflammation*, does not denote any definite state; that generally the term *irritation* is used to denote disturbance of the nervous system; but if we adopt it in reference to the body generally, we shall in most cases analyse it into something like *inflammation*." And yet irritation is very different from inflammation, though in certain cases we have some difficulty in discriminating between them.

With regard to the morbid appearances presented in this disease there is but little known, as patients so rarely die of it, and therefore the opportunity of obtaining a *post mortem* inspection but seldom occurs; at the same time, you would not expect to find any serious lesion, probably in most cases merely congestion of the blood-vessels of the affected part. But then again there are cases where the disease is induced and kept up by morbid deposits within the theca, or else by actual disease with distortion of the bones. The latter may generally be greatly relieved; the benefit in the former case

depends much on the nature of the deposit. The position which I intend attempting to prove, is that you will have different morbid actions produced according as different parts of the spinal cord are in a state of irritation. Thus, when the cervical portion is engaged, you will have pains in the scalp, shoulders, arms, cramps in these regions, difficulty in deglutition, nervous cough, disordered digestion, hiccough, dyspnœa. When the dorsal portion is engaged, you will have nervous pains in the integuments of the thorax, and perhaps abdomen, more particularly the sub-mammary and sternal pains, disordered digestion, lassitude, and inaptitude for business, &c. When the lumbar portion is engaged, you will find the region of the loins, the genital organs, the lower limbs, more or less affected. When the sacral portion is diseased, you would expect to find the parts supplied by the sciatic nerves the seats of pain. In most cases these symptoms are only occasionally present, but in severe cases some of them are never absent.

The brevity of these observations prevents my going into a more detailed account of the arrangement of the symptoms.

It is well known that any severe injury to the medulla oblongata produces immediate death, by paralysing those muscles by means of which respiration is carried on; the pneumogastric nerve, which plays such an important part in respiration, being injured, reflects the injury to the spinal nerves which supply the intercostal muscles and the diaphragm, and thus *entire paralysis* of the respiratory muscles is the consequence, producing suffocation and death. Should, however, the injury be of such a nature as only to produce irritation of this portion of the spinal cord, we shall then only find symptoms of irritation, such as hiccough, resisting all ordinary remedies, but which in general readily yields to counter-irritation over the upper portion of the neck—in fact, spasmodic action, as a result of irritation; paralysis, when the injury is more severe.

With regard to the origin of spinal irritation, but little is known with any certainty—whether it originates in local

causes affecting the spinal cord, not subsiding but keeping up the irritation once established, or whether it is induced in the nervous centre by disease of a distant organ, either functional or organic, by a reflex action, as is supposed by my old teacher, Dr. Graves, I do not pretend to say. My own opinion is, that it may originate in either cause, and that in very many cases the disease will not subside unless you act on the distant organ as well as the nervous centre; for instance, spinal irritation, caused by neglect of the bowels, if of any standing, will not be cured merely by purgative medicines, nor by counter-irritation alone; but if the treatment is directed both to the bowels and spine, a cure will speedily result. I believe it often happens that a disease is established in the spinal cord by reflex action; that the distant organ may become healthy, and yet the irritation still remain in the nervous centre. The ordinary exciting causes of the disease under consideration are—*cold, a disordered state of the bowels,* and *uterine irregularities of various kinds. Excessive depletion,* also, is very frequently followed by spinal irritation, the nervous system, sympathizing largely with the general disturbance. In these cases, it is impossible to be too cautious in the use of the lancet, or any other mode of depletion, although to a casual observer they may seem imperatively to demand it; we very generally find them complicated with more or less disorder of the bowels.—The treatment of such cases is obvious.

It is astonishing to what an extent some women allow constipation of the bowels to go without adopting any mode of relief; and this I believe to be one of the most frequent causes of reflexive spinal irritation, and perhaps one of the causes which gives the great preponderance of cases of this disease to the female sex, probably ninety-seven or ninety-eight per cent.

Even in temporary derangement of the bowels and liver you will very frequently find spinal irritation to exist, manifested by muscular pains in the thorax, arms, neck, &c., along with tenderness on pressure over the spine. This form,

however, requires nothing more than attention to the bowels to effect a cure, as the irritation has not existed sufficiently long to become established as a separate disease. In these cases it usually disappears as rapidly as it arose, on the action of a smart purgative.

In many cases I have been able, on ascertaining the seat of pain, to lay my finger on the diseased portion of the spine immediately. Of course in this, as well as in most diseases, anomalous symptoms will occasionally present themselves, which it may be difficult to locate, but this would be no argument against the soundness of any general proposition. All the symptoms I have enumerated have usually been referred to spinal irritation generally, as if irritation of *any* portion of the spinal cord, would produce *each* and *every one* of them, and this extreme vagueness has led many to abandon the examination of the spine altogether, perhaps thinking it impossible that disease of any one organ could produce so many and such varied results; forgetting the numerous organs that are supplied by different portions of the spinal system, and its immense importance in the animal economy.

A feeling of pain in the affected portion of the spine I do not believe to be, in general at least, indicative of this disease; the prominent symptom is mostly pain in some distant organ, and which is frequently greatly aggravated by pressing on the spine over the origin of the nerve supplying the part. The patient now complains of acute pain being excited in the spine by pressure, where before she was quite unconscious that any morbid action existed. Occasionally, however, the patient will complain of severe pain in the spine; but may not this arise from an acute inflammatory condition, rather than from irritation? In many cases, too, you find irritation of the spinal cord, complicated with an inflammatory condition of its membranes; under such circumstances, you will find both pain on pressure, and a sensation of pain, acute or dull, according to the tissue engaged. Spinal irritation does not, however, necessarily cause *pain* in the organ supplied, but may be manifested by functional disorder only; this

is particularly the case when the bowels are the site of disorder.

I believe that in cases of spinal irritation, we shall find tenderness on pressure over the vertebræ in that part of the spine where the disease exists, always present,—an invariable symptom.

Local spasmodic affections occasionally, but rarely, depend on local disease of the nerves of the part. In general they will be found to be produced by distant irritation, sometimes of the spinal cord, at the origin of the nerves supplying the part, and sometimes by intestinal irritation, acting of course through the spinal cord, as the medium of communication. In a case of tonic contraction of the fingers and toes of a child, about a year and a half old, to which I was called in, it appeared to me to have been caused by a large quantity of calomel, which the child had previously taken for some other affection, and readily yielded to a few doses of castor-oil and warm baths, along with slight counter-irritation to the spine, both dorsal and lumbar, which was evidently very painful on pressure.

A case is mentioned by Dr. Alison, of Edinburgh, of extreme spinal disease, as probably arising from the effects of mercury, but this is denied by Mr. Bradford, of London, who had mercurialized the man for syphilis, and who says the disease existed previously.

One patient, in whom, at one time, hiccough was a very prominent and distressing symptom, which was not removed by ordinary counter-irritants, I found instantly relieved by applying a small cupping-glass at the upper part of the cervical spine, which was very tender on pressure. I believe that this symptom will generally be found whenever the irritation affects the origin of the pneumogastric nerves.

A case of hiccough, removed by a seaton over the origin of the phrenic nerves, is mentioned by Dr. Watmough, of Pocklington, but in this case the irritation at the origin of those nerves is not very distinctly marked, unless it were from sympathy with the injury which the inferior dorsal and upper lumbar medulla spinalis had received, which is quite possible.

Hiccough is also sometimes produced by irritation of the dorsal portion of the spinal cord, but I am inclined to think it much more rare than that arising from disease affecting the medulla oblongata.

I must not be supposed to state that hiccough has no other origin than disease of the spinal cord; every one is well aware that ordinary hiccough may arise from various matters offending the stomach, and is easily removed; but even in these cases the impression is first conveyed to the spine by the incident excitor nerves, and from thence to the muscles engaged in hiccough by the reflex motor branches.

It will also arise, almost constantly, from excessive loss of blood, and is a very bad symptom when occurring in puerperal women after flooding, as denoting great nervous derangement and depression.

When the disease exists lower down in the medulla spinalis, other symptoms arise, one of which I believe to be frequently confounded with cardialgia and angina pectoris, from both of which, however, it is entirely distinct. The symptom to which I allude is pain, mostly of a persistent character, referred generally to about the junction of the seventh or eighth rib with its cartilage, but sometimes to other sites. Usually, the seat of this pain may be covered with the finger; but occasionally, in cases of long standing and of an aggravated character, it may extend to a considerable distance round this spot, which will, however, still be referred to as the point where it is most severe. In a case of spinal irritation, about the middle of the dorsal region, which was under my care a few months ago, the pain extended from the extremity of the seventh rib over the whole abdomen, and round to the spine; all of this was removed for a time by a small blister over the seventh vertebra, and afterwards cured by keeping up counter-irritation for a considerable time, along with gentle aperients. The origin of this case was distinctly referrible to cold.

In another case, of four months' standing, the only complaint made was of pain in three spots, one in each sub-mammary point, the other about the centre of the sternum. I found tenderness on pressure over the third and seventh dorsal

vertebræ; I have noted, "all the functions regular." I only ordered, in this case, counter-irritation to the spine, which entirely removed the pain from the three points in a few days. I subsequently ordered very gentle laxatives, as the bowels seemed to be rather inclined to be torpid; probably I was not sufficiently minute in my inquiries, on this head, in the first instance. Pressure on the tender portions of the spine caused intense pain in the distant points. This case is interesting, as being one in which spinal irritation existed, which was not distinctly traceable to irritation or disease of any distant organ, and which readily yielded to topical treatment.

Irritation of the cervical and dorsal spinal cord will frequently cause a nervous cough, exceedingly difficult to remove, unless counter-irritation over the affected part is had recourse to, when it generally is easily removed.

Dr. Ducros, of Marseilles, has given nine cases of nervous asthma, relieved by applying ammonia over the cervical vertebræ, over the origin of the pharyngeal plexus. In these cases, the benefit was of course derived from its acting as a counter-irritant, and removing, at least for a time, the congestive state of the spinal blood-vessels causing the distant irritation.

Dr. Laycock refers spinal tenderness to a neuralgic condition of the spinal cord itself. I confess that I cannot see much similitude between an ordinary neuralgic nerve, where a paroxysm of pain is the prominent symptom, and spinal tenderness, which is only made manifest when pressure is applied. I do not consider those cases where pain is a prominent symptom to be referrible to spinal irritation, which, I believe, always manifests itself either in pain or functional disorder of the organ or organs to which its ultimate branches are distributed. May not Dr. Laycock have confounded spinal inflammation, a very obscure disease, with spinal irritation, as he mentions, as one of its symptoms, slight tumefaction of the affected part, generally indicative of deep-seated inflammation; spinal irritation must be common in all diseases of organs supplied by its ultimate branches, generally

induced by reflexive irritation, and therefore its presence in a great many diseases is no reason for denying its existence idiopathically, or its importance remedially.

Ordinary *tic douloureux* may, and very probably does, owe its origin to irritation at the roots of the engaged nerves, and hence the difficulty of its cure. This irritation may be induced by tumours, or bony deposits pressing on some portion of the nerve, and I have no doubt that this is a very frequent cause of this disease.

In inflammation of the spinal cord itself, I believe you would seldom find pain a prominent symptom; indeed I think the facts we are in possession of, with regard to this most obscure disease, tend to shew that the spinal cord has no sensibility, properly so called; but should its membranes be involved, or primarily engaged, pain in the back will be urgent, but not, I believe, on pressure. In fact, under the head of spinal irritation, both inflammation of the cord itself, inflammation of its membranes, inflammation of its bony coverings, and true spinal irritation have been confounded together, and this has led to the unsatisfactory conclusions usually formed with regard to this disease.

Dr. Henry M'Cormac, in his *methodus medendi*, seems much to doubt the existence of the disease in question at all, on the ground that he has found spinal tenderness on pressure, without any existing neuralgic affection of the chest, &c. This appears to me to be very bad logic. It is probable that, in the cases alluded to by him, the symptoms were indicative of an irritated state of the corresponding portion of the sympathetic nerve, caused perhaps by the state of the bowels, or some other exciting cause.

Dr. Addison, in his work on the "Disorders of Females from Uterine Irritation," mentions the pain under the left mamma, or some part of the abdomen, which he vaguely refers to irritation of the cardiac orifice of the stomach; some cases, however, he looks on as neuralgic. The pain of the abdomen, he says, he has more than once mistaken for peritonitis, but, of course, the nature of the pulse, and the

other symptoms, should be sufficient to guard us against this error. He recommends cold and astringent injections to the uterus, and anodynes to the seat of pain, with attention to the bowels. This treatment must, I should think, however, have often disappointed him, though I do not deny that the uterine affection may have been the first exciting cause of the spinal disease producing the pain.

Mr. Tate, who has published a small work on *Hysteria*, looks upon its symptons as produced by irritation of the spine, induced perhaps by uterine disease. He believes the spinal cord in hysteria to be always in a state of inflammation or irritation, and that by removing this state the constitutional disease is also cured.

Dr. Marshall mentions one case of *diabetes mellitus* as cured by counter-irritants to the spine; he thinks that diabetes depends on irritation of the nerves supplying the stomach and kidneys, and hence the treatment. The spine is not mentioned as being tender on pressure. I have had no opportunity lately of putting this theory to the test, but it is quite possible that it may have some foundation in reality, and of course the amount of importance to be attached to it will entirely depend on its being borne out by further observations.

Mr. Teale, in his excellent treatise, refers those irregular pains, often called rheumatic, fixed pain in the shoulders, occiput, pleurodynia, constriction across the epigastrium, cramps, &c., to irritation of the spinal cord. In almost every case he has found tenderness of the spine over where the nerves supplying the painful part pass out; and even when it exists with deformity, the pain may be cured, though the curvature remains. Of this I had, about a year ago, two very good examples, in two girls, aged nine and fifteen, in whom the only prominent symptom was pain under the left mamma, existing with considerable distortion—one lateral, the other posterior. There was much tenderness on pressure in the distorted portion of the spine in each case, which was removed, along with the induced distant pain, in a few days, by counter-irritation alone. Mr. Teale believes that irritation of the sympathetic nerve

may be detected by its general connexion with irritation of the spinal cord corresponding to its diseased portion, induced through its communicating branches.

With regard to the treatment of spinal irritation, it will be inferred from my preceding observations that I should not recommend any one line of conduct in all cases, to the exclusion of every other. I do not recommend counter-irritation to the spine or purgatives, or both as specific in this disease; no, where the bowels are in fault primarily, or as a sequence to the nervous derangement, I should place full confidence in aperients and liniments to the spine, followed up, if necessary, with tonics. Where it is complicated with any uterine affection, the appropriate treatment should be directed to the uterus, and combined with counter-irritants to the spine. Where it exists with anæmia, counter-irritants and mineral tonics are indicated. In fact, wherever functional disorder exists, either as the cause or consequence of spinal irritation, measures must be taken to remove it, as well as the spinal disease; but when the nervous disease is manifested merely in functional nervous derangement, it will be easily subdued and removed by local treatment, applied to the spine.

I do not deny that some cases of spinal irritation will occasionally yield without local treatment, and I more particularly allude to those cases where it is temporarily induced by temporary derangements of distant organs, though I would not entirely limit it even to these cases; yet of this I am convinced, that in every case of any standing you will greatly accelerate the cure by counter-irritation to the spine, and some cases you will find entirely unmanageable till you have recourse to it; and in all cases it is a perfectly safe remedy, if not carried too far. The form of liniment which I find most effective is twenty drops of croton oil, a scruple of tartar-emetic, a drachm of liquor potassæ, and seven drachms of water. It brings out a small rash, which is easily kept up. As an aperient and tonic, pills of sulph: iron, aloes, ipecacuanha and capsicum will be found to answer well in most cases, but of course the details of the treatment must be altered to suit

the peculiarities of individual cases. In these cases, perhaps, more than most others, change of air, sea-bathing and occupation, are of the greatest use in preventing a recurrence of the disease, by inducing a more healthy and natural performance of the functions of the body, without the aid of medicine, which frequently leaves the patient without disease perhaps, but still in a very favourable state for its redevelopment on the slightest exciting cause presenting itself.

In cases of spinal irritation, where the head was a good deal affected (generally in cases induced by excessive loss of blood), I have found much benefit from the following:—

℞ Tinct. Ferri Muriatis, ʒiss.
—— Cantharidis, . . ʒss. misce.
Sumat Guttas xxv—xxxvj ter die
ex aquæ cyatho vinoso.

I have now given a very short outline of spinal irritation, its causes, symptoms, and treatment on rational principles; very much, however, still remains to be done before we can determine the exact amount of importance to be attached to it; but I think I have brought forward sufficient facts to prove that much may be done by directing some of our treatment to the spine, even when its irritation does not exist idiopathically, but merely as a symptom of distant derangement. The great mistake has been, that very generally the treatment of these affections has been entirely directed, either to the spine alone, the bowels alone, or the uterus alone, and so on; and this narrow view of the subject has, of course, given to these cases a character for greater obstinacy than I believe them to possess.

T. C. Savill, Printer, 107, St. Martin's Lane.