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A THEORY

AS TO THE

PROXIMATE CAUSE OF INSANITY.

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“*Mens sana in corpore sano.*”

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 *vezata 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 show the manner in which both the mental and physical changes have been induced. To particularise 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* examination 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 connection 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 disorganisations 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* cause should 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 of the remote causes of insanity, and in what cases they are merely accidental.

This can only be satisfactorily ascertained by extensive and combined microscopic researches; we might then not only determine this point, but also ascertain what effects were produced by each species of insanity, and we possibly might be able to show 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 or 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 localise the faculties.

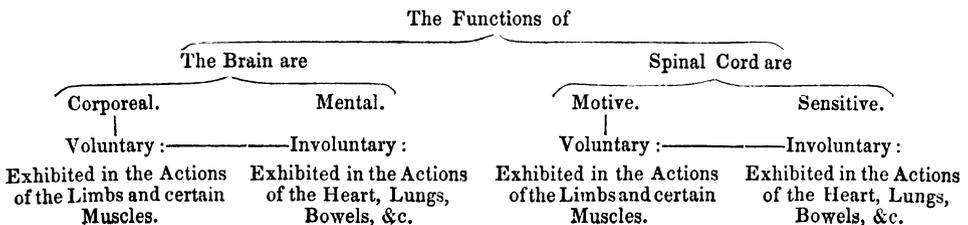
We find so much similarity in the structure and functions of the brain and spinal cord, that I think it is quite fair to infer that they may be similarly affected, and that, when they are so, analogous results may be expected—for instance, we find both *idiopathic* and *reflective* irritation of the 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

* For farther information on this subject, I would refer to my paper on Spinal Irritation, which appeared in this Journal for September 9, 1843.

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 become 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 favoring 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 favor 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 showing 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 connection 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 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 is 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 produced 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 connection 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 incurability 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 shown 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 tumors 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 is 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 shall not pursue the subject any farther, for although very much more might be written, I hardly think a more prolonged investigation of the theory in its present state, would materially assist in elucidating those facts by which it must, of course, ultimately stand or fall. I would, however, venture to hope, that it may, imperfect as it is, receive that candid consideration which a subject of such exceeding interest and importance deserves; and if it shall be the means of throwing any light upon so confessedly obscure a point, I shall be most amply gratified and repaid.

York, December 28, 1843.

EXTRAORDINARY CASE
OF
SEVERE ULCERATION OF BOTH LEGS.

By W. WHITCOMBE, Esq., of Presteigne.

TO THE EDITORS OF THE PROVINCIAL MEDICAL
JOURNAL.

GENTLEMEN,—Should you deem the following case worthy a place in the Provincial Medical Journal, I shall feel obliged by its insertion.

I am, Gentlemen,

Your obedient servant,

WILLIAM WHITCOMBE, M.R.C.S.L.

Presteigne, Dec. 30, 1843.

1841, Jan. 19th. Visited M. A. W., aged fifty-two. She states that, thirty years since, she had an ulcer on the left leg, near the instep, which continued for several years; that she became, at length, pregnant with an illegitimate child; that, during pregnancy, the ulcer healed; that, after weaning, an ulcer spontaneously appeared on the right leg; that it continued several years, and eventually extended over the whole of the leg. Being an union patient, she was then removed to the poor-house, where the leg was amputated immediately below the knee. States that the stump healed soon, and this occurred about two years since. After the stump had healed she left the house, and came to reside at her present residence; and, shortly after, an ulcer again showed itself on the left leg (the one originally affected). Being afraid of being again removed by the parish officers, she has been unwilling to apply for medical or other assistance, having a small out-door allowance; but her neighbours had advised her to apply for an increase of that allowance on account of her infirmities. I was, therefore, requested to see her, since, though belonging to a parish in another union, she was a resident in a parish I attended.

Her present appearances are ulceration extended completely round the tibia and fibula; these bones entirely denuded of all integument or muscle to within two inches of the knee joint. The whole of the foot had come off at the ankle joint *six weeks previously*. She has hectic fever and diarrhoea; asked me if the leg could not be taken off below the knee; ordered brandy, and nourishing broths. In consequence of my applying to the board of guardians at their next meeting, the officers of the parish to which she belonged were communicated with, and they sent their own medical officer to visit her, who had her removed into the workhouse, a distance of twelve miles, where, as I afterwards heard, she gradually sunk, in about ten days.

From the fact of an ulcer of a scrofulous nature appearing, for a period of thirty years, upon one or other of the legs; and, after the age of forty-five years, when the menstrual discharge had ceased, becoming so extensive as to require amputation of the one extremity, I certainly felt at a loss for reasons justifying the removal of the remaining one.

As this case has been the only one I have met with of such an extensive nature, I have forwarded it to you for insertion.