

**Spinal affections : a popular lecture on disorders and diseases of the spine
... / by Henry Crowhurst Roods.**

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SPINAL AFFECTIONS.

A
POPULAR LECTURE
ON
DISORDERS AND DISEASES
OF THE
S P I N E,

IN WHICH THE CAUSES, NATURE, SYMPTOMS AND CURATIVE TREATMENT OF THESE AFFECTIONS, ARE INVESTIGATED AND EXPLAINED,

BY

HENRY CROWHURST ROODS,
MEMBER OF THE ROYAL COLLEGE OF SURGEONS, LONDON.

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A LECTURE.

LADIES AND GENTLEMEN,

IN offering to your notice some observations on the subject of spinal affections, I do not profess to instruct you how to distinguish one from another, the several diseases to which the spinal column is liable, and by which it is often attacked; nor is it my intention to attempt to lay before you, in detail, the various measures necessary to be adopted for the effectual treatment of these affections. To discover the precise nature of a disease and to devise appropriate means for effecting its cure, are duties peculiar to the physician, and by those only who are conversant with the structure of the human form, who have made themselves acquainted with the several organs of the body, in a state of health, and have studied them in their diseased states also, can the precise nature of any affection be discovered or appropriate treatment for effecting its removal be prescribed. My object is not therefore to make ill-instructed, or superficial, non-professional doctors of you, but rather to call your attention to a class of

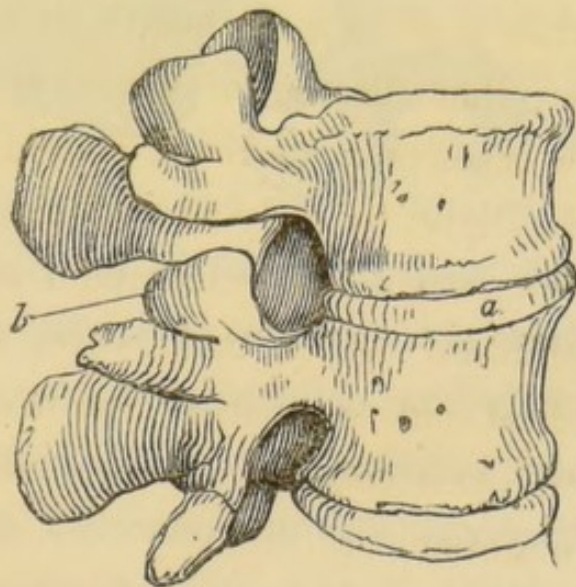
diseases and disorders, which are too generally productive of great and serious ill consequences, and which I believe may often, by early attention, their precise nature being discerned, and a judicious system of treatment adopted, be rendered far less destructive and painful than they commonly prove.

To those amongst you, who are charged with the pleasing duty of watching over and studying the welfare of those whom Providence has committed to your care, I need hardly say, attaches the responsibility of marking the first symptoms of disease, occurring in the younger branches of the human family; and although you cannot discern the precise nature of diseases, you can, as a general rule, discover readily whether a child is in health or not; and if it can be shown that disease of whatever nature, can even in a few cases only, be readily cured, or rendered comparatively slight, by early and judicious treatment, it cannot but appear a duty, incumbent upon all those who have children under their care, to apply for efficient medical aid, so soon as the first symptoms, indicating the existence of disease, shall have attracted their notice.

Lateral curvature of the spinal column and consequent deformity of the body, may take place at any period of life; it more frequently however commences in early life, and perhaps oftener, before than after the age of fifteen, whereas disease more gene-

rally affects the spinal column after that period than before. But at whatever period of life affections of this important structure occur, they are always productive of much suffering; hence it is of the highest importance, that they should be early discovered and promptly and judiciously treated.

It will perhaps enable you more clearly to comprehend the observations I shall have occasion to make respecting the seat of the several maladies to which I purpose directing your attention, if I first describe generally the anatomical arrangement of the bones and other textures, constituting, or intimately connected with the spinal column.

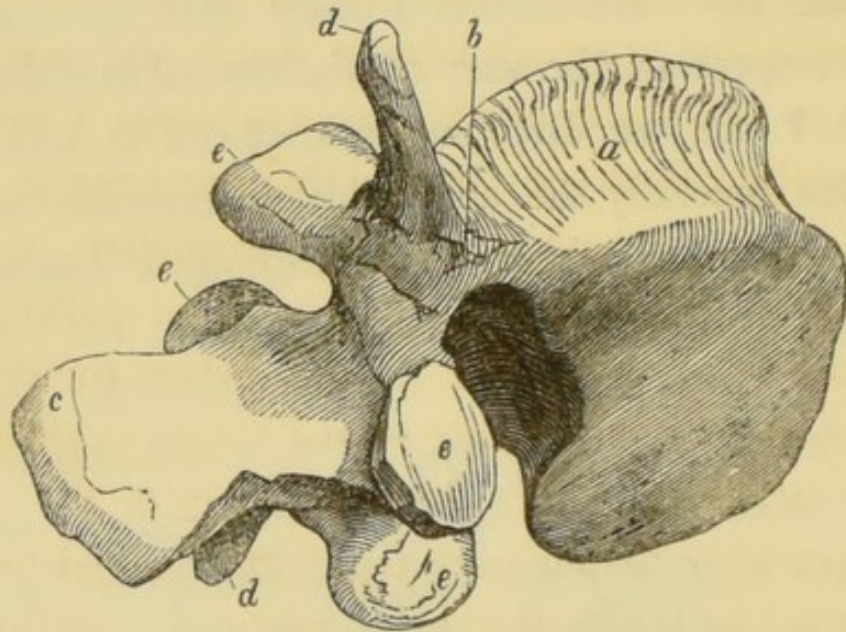


Sketch showing the intervertebral fibro-cartilage (*a*) and the junction of the articulating processes (*b*).

The osseous portion of the spine, which I here show you, consists of a series of superposed bones, twenty-

four in number ; all of which, though varying in size and differing slightly in the arrangement of their various processes possess certain characters in common ; these bones are named vertebræ.

The lumbar vertebræ being the larger, and the processes more distinctly marked in them, I select one of these as a specimen of the whole.



Each vertebra then consists of a body, (*a*) an arch, (*b*) and certain processes or projecting portions of bone, proceeding from or attached to the arch ; these are the spinous processes (*c*) projecting backwards, the transverse processes (*d d*) one on either side, and four articulating processes (*e e e e*), two attached to the upper and two to the under surface of the arch ; the bodies and processes of the bones vary in the different regions of the back ; the bodies diminish gradually in size from below upwards, the upper

vertebra being little more than a ring of bone, the inclination of the spinous processes of the dorsal bones is, as you perceive, more or less downwards ; these differences are however of little importance to our subject.

The texture of the several parts of the bone varies ; that of the body is cancellated, cellular and of a spongy appearance, light but firm ; whilst that of the arch and processes is more dense and compact ; between the bodies of the bones is placed a peculiar fibro cartilaginous body, termed the intervertebral substance, which is here artificially represented ; it is of an elastic or slightly yielding nature, particularly towards its circumference, so that when compressed by the edges of the bodies of the bones, as when the body inclines to either side, the edges of the bones are permitted to approach each other, somewhat on the side to which the body inclines ; whilst the centre of the bone is firmly supported, and rests as on a moveable pivot, the intervertebral substance being in the centre semigelatinous and inelastic. This substance constitutes an important part of the spinal column ; its uses are various, its elasticity permits of a yielding or bending of the spinal column in all directions, forwards, backwards and towards either side, which could not take place, if the flat surfaces of the bones were immediately opposed to and rested

upon each other ; it defends the bones from injury, and modifies the effect of shocks, from falls on the feet and so forth, on the brain and spinal marrow.

The vertebræ are all securely bound together, by firm ligamentous bands, of which I here show you some recent specimens, taken from different animals ; by means of these ligaments, bands, and membranes, you observe that with the arches of the vertebræ, a continuous canal is formed, extending from the head downwards throughout the whole length of the spinal column ; within this canal the spinal marrow is securely lodged and defended from external injury. This delicate and important structure is a prolongation of the fibres of the brain and from it those nerves take their rise, the branches of which are distributed to almost every part of the body ; these nerves pass out from the spinal canal on either side, between the arches of the vertebræ, as I here show you. The articulating processes have each a smooth surface, which in the natural position of the bone, is placed opposite to that of a corresponding one of the vertebra above, or below ; the smooth surfaces of the upper articulating processes meet those of the lower processes of the vertebra above, and with the assistance of cartilage ligaments and synovial membrane, perfect joints are formed by each pair of these processes. The articulating processes serve to prevent

displacement of the bones, and to these processes and joints, I shall have occasion to refer more particularly hereafter. The spinous and transverse processes are merely levers, to which the numerous muscles, whose office it is to support and move the spinal column, are attached and on which they act.

The whole of these several parts of the spinal structure, the bones, ligaments, membranes, tendons, nerves and so forth, although differing in their organisation and texture, are still united into, and constitute one whole though complex structure, by means of cellular membrane or tissue, and hence when one part becomes the seat of disease, the malady can extend itself, more or less readily, from one texture to another, through the medium of this all pervading cellular membrane or tissue.

It should have been mentioned that the bones in their natural state, are covered by a membranous sheath, called the periosteum, in which the arteries that convey nutriment to the bone, ramify together with their accompanying veins and absorbent vessels.

Having premised thus much, I shall now proceed to the consideration of the diseases to which this important structure is liable.

Affections of the spine may conveniently be divided into diseases and disorders; by the term disorders, I here designate those affections of the spine, in which

a yielding or bending of the column, from whatever cause it may arise, takes place, uncomplicated with disease of any of the textures forming parts of this structure or connected therewith. These curvatures always occur laterally and are hence usually denominated simple lateral curvatures of the spine; they do not supervene as consequences of disease, on the contrary, they are generally uncomplicated with it, though not always or necessarily so, and the remedial measures requisite and best calculated to restore the column to its natural position, differ widely from those, by means of which, diseases properly so called of this structure, can be effectually treated. Diseases of the spine, and to these I shall chiefly confine my remarks, may be divided into two classes; first those which are of an inflammatory nature and in which all the consequences of inflammation, viz: suppuration, ulceration, and mortification may occur, and secondly those of an irritative character, as distinct from inflammation, in which the parts affected do not become disorganized even when the affection continues for a long period. Inflammation is said to terminate in resolution, suppuration, ulceration or mortification; by resolution is meant, that the diseased action subsides, and the affected part regains its natural healthy condition, no disorganisation of the structure of the part in short takes place; the

other terminations would be better named results or consequences of inflammation, seeing they constitute only other stages of the disease. When suppuration takes place in an inflamed part, matter is deposited, which when collected into a cavity, is termed an abscess; if this matter escapes naturally or is discharged by an opening made by the surgeon, the healing process is set up in the part, which usually recovers pretty nearly its former condition. In cases of mortification the life of the part is destroyed, and consequently restoration is impossible, and although the dead parts can be separated from the living textures and be thrown off by the powers of nature, and the neighbouring parts be placed in a condition, wherein the healing process may be set up, yet the dead parts cannot be restored; but new flesh or bone may be formed, which will supply more or less perfectly the place of that destroyed.

The ulcerative termination of the inflammatory process, is that which chiefly concerns us, as being more immediately connected with the diseases we are now treating of.

It is necessary, perhaps, I should explain to you, that in the living animal economy, an incessant change of the elements of the body is constantly taking place in every part of the frame; each portion of the body requires a frequent or perpetual supply of

nourishment: this nourishment is prepared by the digestive or assimilating organs, from food taken into the stomach, and when prepared is called chyle; by means of absorbent vessels, here named lacteals, the chyle is absorbed from the alimentary canal and conveyed to the heart; by which, having undergone certain changes in the lungs, it is distributed in the form of blood, through the numerous arteries, to all parts of the body, and by them deposited in a way yet unknown to anatomists, for the growth and nourishment of the frame. The blood having passed through the capillary arteries, returns by the veins to the heart and lungs, there to receive fresh supplies of nutritious matter, and undergo changes to fit it again for arterial circulation. If, however, this process of deposition of new matter constantly went on, the body would continue to increase in bulk throughout life the same as it does in infancy and childhood. This not being the case, there is, doubtless a cause why it is not so; and we find, on inquiry, that another class of vessels is employed in the economy, whose office it is to remove the older parts, or those no longer useful and necessary; and thus to counteract the effects which would otherwise follow from the constant deposition of fresh matter by the arteries. Those vessels are named absorbents, and their office is to remove or destroy, as that of the arteries

is to nourish and repair, the human fabric. Now these absorbent vessels act an important part in some affections; we find, after a part has been inflamed, as in the case of a common boil for example, that the swelling gradually subsides; this subsidence is effected by the absorbent vessels, which remove the substances deposited in excessive quantities, by the arteries of the part, when in an inflamed condition. The inflammatory action of the arteries stimulates the absorbents, which then act more energetically; this increased activity of the absorbent vessels, when once excited, or the exciting cause continuing to operate, may persist; and it is no uncommon occurrence for a surgeon to witness an ulcer, or open sore, on the surface of the body, gradually enlarge; this enlargement is occasionally very rapid, and may prove destructive to life. In these cases the absorbents have been stimulated into a state of increased activity, and their destructive action continues; they eat away, as it were, contiguous structures, and destroy even themselves. For the proper understanding of the nature of some states of spinal disease, an acquaintance with this destructive power and process of the absorbent vessels is absolutely necessary, and I hope the explanation I have endeavoured to give, is sufficiently clear to enable you to comprehend its nature.

The ulcerative termination, result or sequence of inflammation, is then rather the establishment of a fresh disease, than the cure or termination of the old one, which still in a degree continues; the two sets of vessels in carious or ulcerative disease of the vertebræ, are as it were opposed to each other, the one endeavouring to restore and build up the injured or suffering part, whilst the other as pertinaciously pulls down and destroys; and the latter being unfortunately assisted by circumstances and conditions, which will hereafter be more particularly adverted to, too often succeeds in destroying portions more or less extensive of the spinal column, thereby entailing upon those who have the misfortune to be afflicted with disease of the spine, sufferings both severe and lasting.

It is extremely desirable to ascertain, if possible, in what part that formidable malady, to which the term spinal disease is especially and appropriately applied, and in which the bones become carious, and are together with the intervertebral substance, the ligaments and so forth, removed by the ulcerative process, commences; if this point could be determined, fewer difficulties would be met with in tracing the causes of the affection.

Some persons have contended, that this disease (as well as psoas and lumbar abscesses, which, from the

fact of the vertebræ being usually diseased in these cases, have some affinity to the affection we are now discussing), commences in the intervertebral substance; others that the body of the bone is first affected, and that the disease is of a scrofulous nature; the point must continue to be involved in some doubt, for the reason that the disease has usually made considerable progress before a medical man is consulted, and it is then (even in the event of sudden death occurring from other causes), too late to discover, by dissection, where it commenced, as both bone and neighbouring parts would, under these circumstances, be found in a diseased state. It is, nevertheless, important that this point should be farther investigated, and I hope to be able to lay before you reasonable grounds for the opinions I entertain, viz., that spinal disease does not always, nor even generally, commence either in the bone itself or in the intervertebral substance; that it is not a scrofulous disease, though persons of a weak or (so called) scrofulous constitution may be, more frequently than robust persons, the subject of it; and that it is a disease of a common inflammatory character, commencing often in the joints formed by the articulating processes, which may by judicious treatment be arrested and cured in its early stages, and many of those deplorable consequences be obviated,

which too often follow the prolonged neglect, and injudicious treatment of these afflictions,

It is a well-known and well-established fact, that lowly organised structures (amongst which are bones, ligaments, cartilage, &c.), are not prone to take on inflammatory action; but when inflammation does attack these structures it often proves destructive.

Bone, however, and its periosteum, ligaments, tendons, and so forth, when injured by blows or other causes, take on diseased action in consequence, the same as soft parts under similar circumstances; they also suffer from diseases extending to them from contiguous structures; still it cannot, I believe, be denied, that idiopathic or spontaneous disease in bone, ligament, tendon or cartilage, is, as to that occurring in other textures of the body, comparatively rare. If this be true as regards the osseous portions of the body generally, why should the bones of the spine be supposed to form exceptions to a general rule? and if the ligaments, cartilages, and tendinous structures connected with the great joints of the frame, as well as the multitude of small ones, which are perpetually in use, and are often the seat of disease, are, as can readily be proved to be the case, in the vast majority of instances, secondarily affected, and the bones likewise, surely it is reasonable to suppose that similar rules will hold good, when

applied to similarly organized structures connected with the spine? Diseases of joints usually commence in the synovial or lining membrane (such at least is the conclusion I have arrived at, after a careful consideration of facts that have been presented to my notice), which being a secreting membrane, is liberally supplied with blood, highly organized, and prone to disease; over exertion frequently causes inflammation of this membrane, of an acute or chronic character; when the latter (the pain being usually slight, though constant), the sufferer is too apt to consider it as a trifling affection; hence, no means being adopted for effecting a cure, the disease persists, ulceration of the inflamed membrane takes place, and the bones, cartilages, and ligaments connected with the joint become involved. Such cases are of every day occurrence in the knee-joint, the elbow, the hip, wrist, and so forth; may not then similar consequences to the joints of the spine, and contiguous bones follow, as effects of like causes? I believe they may, and shall relate some cases in support of this conviction hereafter.

Scrofula is no longer considered by well-informed medical men as a disease of a specific or peculiar nature; those affections usually denominated scrofulous, such as glandular swellings and abscesses,

diseases of bones, &c., are regarded by the most eminent of the faculty as the effects of common disease upon weak constitutions ; these affections are more difficult of cure, than like cases occurring in robust individuals. The inflammation of a gland or other part, in the case of a robust person, will require very different treatment to that which would be applicable to a similar affection occurring in a person of weak constitution. The loss of a quantity of blood will at once cure many inflammatory affections attacking robust individuals, whereas such loss of vital fluid by the feebly constituted, would rather aggravate than subdue the evil. All diseases attacking persons of weak constitutions, have a tendency to persist, and to extend their ravages ; they are often slow in their progress, as is the case in glandular (or as it is frequently termed scrofulous) abscess, for example, which often enlarges slowly and gradually for a long time, or having quickly attained a considerable magnitude, it then remains apparently stationary for many months before matter is formed in it, and when collected into a cyst or cavity forming an abscess, the purulent fluid differs much from that which is termed healthy matter, or such as would be found in a robust subject ; the powers of the system generally are weak, the circulation is weak, the blood does not possess

good nutritive properties, and hence the disease is weak ; it is inflammation still, but inflammation without power.

Some of the foregoing remarks may, perhaps, appear at first sight irrelative and unnecessary ; they will, however, enable you to comprehend more readily the observations I am about to make relative to the nature and progress of spinal disease.

Diseases of the spine, usually, though not always, come under the notice of the surgeon before the worst and most alarming symptoms manifest themselves ; and the inconveniences felt and complained of are usually as follows ; a constant gnawing pain, more or less severe, is felt at some part of the back, generally at the upper part of the loins or the lower portion of the dorsal region ; the pain, in some cases, has been felt for several months ; it has gradually increased in severity ; it is generally worse towards the latter part of the day, and less severe in the morning, and it was preceded, and is accompanied by a feeling of weakness in the affected part of the back. When asked if the back has been hurt, the patient almost invariably replies in the negative. Notwithstanding this, it very frequently turns out upon close inquiry, that he has, nevertheless, suffered a slight hurt, though he invariably asserts it could not be that which had caused the back to be

bad, it was a mere nothing. We shall see in the sequel whether it is wise to regard these slight hurts as trifles not worth notice. If the disease is not arrested at this stage, another and a more alarming group of symptoms supervenes: the bodies of one or more of the vertebræ give way, the spinous processes project backwards beyond the normal line, and form what is termed angular or posterior curvature; one spinous process is sometimes twisted out of the direct line, causing a kind of notch in the back, or it presses upwards against the process above; the spinal marrow in the more serious cases is compressed, and loss of sensation, and of the power of motion in the lower members results; the pain is greatly aggravated, and extends round to the chest and stomach, inducing constant nausea and distressing sickness; delirium sometimes supervenes, and, altogether, the helpless condition of the sufferer is truly deplorable.

From the slight sketch here given, you perceive that the only symptom indicative of the existence of a formidable disease of the spine, is pain, accompanied by a feeling of weakness; the pain often for a length of time so slight as hardly to attract notice; but persistent, nevertheless, more or less severe at different periods of the day, and gradually, though slowly, and almost imperceptibly, increasing in severity. In other instances the pain is more violent,

the inflammatory action being doubtless of a more or less acute character, the functions of the stomach are disordered, acute pain is felt in the side, and many other symptoms present themselves which need not be enumerated here. These symptoms, whether more or less acute, all indicate that something is out of order, and if the warnings are not attended to, sooner or later the spinal column will give way, and then no additional evidence will be needful to prove, that disease had long been committing ravages on an important part of the frame; insidiously undermining the foundations, and removing one by one the props which sustained the fabric of the spinal column, until at length the weakened bodies of the bones, ceasing to be capable of supporting the superincumbent weight, are crushed, and all the terrible train of consequences quickly follow.

There can be no question, that, in cases such as I have endeavoured to describe, disease exists from or before the time at which the first feeling of weakness is noticed, or slight pain experienced; there can be no doubt that this state of disease continues, increases, and extends itself to neighbouring parts, a fact that may be fairly inferred from the constant and gradual increase of pain and weakness; and which is proved in severe cases by the great destruction of bone that takes place.

As I before stated, the cause and origin of this form of disease, and the structure in which it commences, have not been satisfactorily ascertained, or determined; and as the knowledge of these points might assist us sometimes in arresting the progress of a formidable, though apparently slight disease, in its early stages, further investigation is desirable; and should we fail in our attempts to elucidate the questions as to the nature, causes, and seat of the disease we can, at all events, do no harm by offering our opinions on the subject.

I stated in a former paragraph, that the patient who applied for relief of a disease of the spine, usually denied, or had forgotten, that the back had previously received an injury, but that on closely questioning the sufferer, I usually ascertained that some slight accident had occurred; so apparently slight however, generally, as to have been thought of no more, after the first slight pain had subsided, and this had occurred, perhaps six, nine, or twelve months prior to the time of consultation.

I should say, as the result of my own observations and experience, that the most frequent seat of pain in the back, in the early stage of spinal disease, is the upper part of the loins, or lower part of the dorsal region of the spinal column. Here, then, we may reasonably presume the malady begins; and

although it may extend its ravages, either upwards or downwards, or both, yet here where the pain is felt it commences. The next question to be answered is, in what structure? With the exception of some portion of the neck, the freest and most extensive movements of the spinal column take place in the loins: will not this fact throw some light upon the inquiry?—probably it may.

Now, although those parts of the body, in which free movement is necessary, are usually so constructed as to admit of its taking place, without any unusual risk of injury, yet a certain limit is imposed on the extent to which motion can be carried, with impunity. Examples of this limitation present themselves in every joint of the body, and the usual consequences resulting from attempts voluntarily, or involuntarily, made to pass the prescribed bounds, are fractures and dislocations of the bones, laceration of ligaments, and so forth. So also is it with regard to the joints of the spinal column; as I before mentioned, the movements of the spine take place rather as a result of a general yielding of the whole column, than in consequence of any considerable power of motion being possessed by any one or more of the vertebræ. A twisting movement, as in turning the face from side to side, can take place to a small extent only; and thus, the pelvis being fixed, the head, when assisted

by the whole twenty-four vertebræ, cannot describe in the generality of persons more than one-third of a circle; the articulating processes place this limit to circular motion in the spine; the other motions of the spine consist in a bending of the column in any direction, these are also for the most part accomplished by a general yielding of the whole column, although, excepting the neck, the freest movement obtains in the loins; this then is the part, at which we might "a priore" expect casualties to occur; the parts being in motion, a sudden jerk, or twist, might easily carry the movement a little beyond that intended by the mover, or permitted by the construction of the parts, to take place with impunity. Hence injury to some of the textures connected with the column would necessarily result; the articulating processes might be fractured; the capsular or synovial membranes be torn; or the ligaments connecting the bones might be lacerated.

However slight or trifling these accidental injuries may appear, and I freely allow, so far as the parts immediately suffering, are concerned, that the accident may be regarded as slight; the portion of bone fractured is small, the joint injured is small, and the ligaments torn could perhaps be dispensed with; yet a little spark often suffices to kindle a great fire, so likewise an accident of this nature, trifling in itself,

may be the cause and commencement of a great and formidable disease.

In the majority of accidents which happen, implicating or injuring joints, some inflammatory action is set up in the parts, which subsides more or less quickly, as it is judiciously or improperly treated; and whenever any portion of the body is injured, an increased activity of the arteries in the immediate vicinity of the injury commences, lymph is deposited by them, the part swells, and the healing process begins; this increased activity of the circulation does not amount to inflammation, but the parts in which it obtains are in a state of excitement, consequent to, and necessarily attendant upon it, which renders them peculiarly prone to inflammation. A slight irritant applied to an excited surface will produce inflammatory action, which it would not do if applied to the same part in a healthy or unexcited condition. This fact, as connected with the healing process, is of great importance; without the increased activity of the circulation in an injured part, whereby new matter is speedily brought by the arteries to repair the wounded structure, the surgeon would never dare to use a cutting instrument, lest his patient should bleed to death; nor could injured parts be healed. When this state of activity of the circulation is carried beyond certain limits it ceases to con-

stitute the healing process ; it then becomes inflammation and consequently disease. Hence the importance of removing all sources of irritation from an injured part ; excitement being, as I before stated, a necessary effect of injury, and inflammation a probable consequence of irritating a part in an excited condition ; so inflammation when excited, may and will be maintained or increased, by the continued application of an irritating cause, and the effects usually resulting from long continued inflammatory action, will follow.

I have now endeavoured to give you a general description of the structure of the spinal column, and the uses of its several parts. I have endeavoured to prove that diseases of this portion of the frame are governed by the same laws which obtain, with respect to like diseases affecting similar structures in other regions of the body. I have described the common consequences of inflammation ; the effects of injuries ; and of irritants applied to injured parts ; and dwelt at some length on the ulcerative process, as being intimately connected with spinal disease. I have attempted to show that idiopathic disease in bones is not common ; that scrofula (although the name is retained and often used), is not considered by well informed medical men a peculiar or specific disease ; but that (so called) scrofulous disease, is

common disease operating on weakly constituted persons.

The usual account given by the patient of the symptoms occurring in the early stage of the disease has been laid before you, together with some account of the more formidable symptoms which supervene in the more advanced stages of severe cases of the malady; and I shall now proceed to describe the causes of the affection, and endeavour to show how and where it commences; the causes and mode of its extension, and by what means it can be arrested and cured in its early stages.

From the frequent occurrence then of slight accidents, whereby injury is inflicted on some structure connected with the spine; and from the fact that in most cases that have come under my notice, it has been ascertained that some time prior to the manifestation of the first symptoms of the affection, a slight accident has happened, and the back has been hurt, although the patient rarely attributes the disease to the injury, which on the contrary is always very lightly spoken of, as a mere trifle, forgotten almost as soon as felt, and would not have been mentioned had inquiries not been instituted, knowing also that diseased action being once set up in a part, is liable to extend itself, and will persist for a great length of time, especially when the exciting or

any irritating cause continues to operate ; and that when this state of disease continues to exist for a long period, disorganisation of the structure diseased is likely to take place ; and seeing that the small joints of the spinal column, with their capsular ligaments and synovial membranes, are the parts most exposed to, and, therefore, most likely to be the seat of injury, a strong conviction obtains in my mind of the correctness of the opinion ; that spinal disease very frequently (to say no more) begins in the joints formed by the articulating processes of the vertebræ, and that a slight injury inflicted on these parts, is a frequent cause thereof.

The question will naturally suggest itself to your minds, how can so slight a cause give rise to such serious results ? Slight causes will however, we know, sometimes produce great effects ; and the manner in which this apparently slight cause succeeds, in effecting so great an evil as that of establishing a disease of the spine, I suppose to be as follows :

Supposing one of the joints before mentioned to be injured ; the immediate effect will probably be a sharp pain in the suffering part, which gradually subsiding, after a few minutes in some cases, a few hours in others, ceases and is forgotten. Still the sudden pain is sufficient evidence that some part has been hurt, whilst the speedy cessation of pain would

naturally conduce to the conclusion, that the injury inflicted was neither extensive, nor of a serious nature ; but however slight the lesion, reparation becomes necessary, and the reparative process would at once commence. An increased activity of the arteries would be the first change occurring in the immediate vicinity, and as a consequence of the lesion, by which the irritability of the part would be augmented, and its susceptibility to take on morbid action increased. In slight accidents of this kind (we will suppose the person to have a fall, or the pain results from a sudden twist or bend of the spine), the pain though severe for the moment, soon passes off, and no one thinks of taking precautions for obviating ill consequences, which are never expected to result from so slight a cause. The pain subsides, the lesion is not on that account healed ; the irritable state before alluded to, accompanies the efforts of the system to heal the wound, the patient follows his usual occupations, the tender and irritable surfaces of the articulating processes, or the injured part, whatever it may be, is irritated by the constant movements of the spine ; chronic inflammatory action is set up ; the suffering part being, however, of small extent, little or no inconvenience is felt by the patient. The inflammatory state once established, and the irritating causes—viz., the movement of the spine

and consequent friction of the tender parts, continuing to operate, the efforts of the constitution to heal the wounds are unavailing; the diseased state is kept up, the inflammation increases in intensity, extends its bounds, and contiguous textures become involved in the disease, which spreading amongst adjoining tissues, or along the continuous periosteum at length reaches the surface of the bodies of the vertebræ, and then the real and serious mischief begins. Hitherto it has been merely a slight inflammatory affection involving structures performing no very important functions in the economy, which parts were nevertheless kept in an unhealthy, irritable, or slightly inflamed state, by the irritation caused by the constant movement of the body; and thus other structures in their vicinity were exposed to danger, and became involved in the disease.

When the inflammatory action reaches the bodies of the vertebræ, and the intervertebral substance, the circumstances of the case are entirely changed. The inflamed part is now subjected to pressure, and however slight the inflammatory action may be, the result of that combined with pressure will be an increased activity of the absorbent vessels, and the speedy commencement of ulceration in the affected part. At this stage of the disease cure is yet possible, and the vertebræ may be saved. It is only at

this stage that the weakness and pain usually begin to attract serious attention, and being yet comparatively slight, means are rarely used for effecting their removal. The inflammatory and ulcerative actions continue, increase, and reciprocally aggravate each other; the pain becomes more severe, the spongy texture of the bone is weakened, and eaten away by the absorbents, until it ceases to be capable of sustaining the superencumbent weight of the column and trunk, and the consequence is, that the body of the bone is crushed, whilst the harder portions, the arch and its processes, not having to contend against inflammation combined with pressure, remain comparatively free from disease and being firmly bound to the arches above and below, and also secured by the articulating processes, retain in a great measure their position; although being pressed backwards by the falling down of the body of the vertebræ above, the spinous process projects, and angular or posterior curvature is the result.

The foregoing account supposes only one of the vertebræ affected, and, as in great numbers of cases, several bones are involved, the above may be regarded as a slight case of spinal disease. This, then, appears to me the usual course of spinal disease; and we need not the intervention of the scapegoat scrofula, to enable us to explain these which are common

effects of common disease, and such as might be expected to result from causes such as I have pointed out. True, the inflammatory action would be more likely to persist and extend itself in persons of weak and delicate constitutions, in whom the "*vis medicatrix naturæ*" operates less potently and effectually than in the robust; and this will account for the greater frequency of these affections amongst the weaker portion of the community.

Doubtless many slight injuries, such as I have several times alluded to, heal almost immediately, both in the robust and others also; in some cases acute inflammation is set up, which spreading extensively amongst neighbouring structures, and causing great suffering, renders it imperative on the sufferer to apply for medical aid; and by active treatment and rest, the affection is often speedily and effectually cured, and the ulcerative process prevented.

The causes of these affections may operate with more or less violence; a fall or blow may be slight or severe, and the immediate effects will correspond, but the ultimate consequences of either cannot be foreseen. Prudence would, therefore, suggest the propriety of endeavouring to arrest the progress of disease in so important a structure as the spinal column, in its earliest stages; and the surgeon should attack it vigorously the moment symptoms indica-

tive of its existence manifest themselves, applying all the available powers and resources of the healing art, to arrest and cure if possible a disease, which if not subdued will entail miserable and lasting suffering on its victim. I shall here relate some cases illustrative and confirmatory of the opinions and views which have been laid before you.

Miss —, a young lady enjoying general good health, of ordinary strength, and healthy appearance, about eighteen years of age, parents healthy; in attempting suddenly to lift the end of a piano-forte, which proved heavier than was anticipated, felt a sudden and sharp pain in the back, which caused faintness and sickness; the faintness passed off, and in a few hours the pain had altogether ceased. About nine months after this I was consulted; she then complained of pain at a particular part of the back, she was tolerably easy during the night, but soon after she rose in the morning the pain recommenced and quickly became severe, and of a smarting character, so that she was unable to sit up except for a short time, and was compelled to recline frequently during the day for half an hour or an hour at a time, to obtain relief from pain. This pain had been felt for three or four months, she was however uncertain as to the precise period, as it attracted but little attention for some time; weakness of the back had been felt for

a long time previously, that is to say, for several months before positive pain supervened. On my applying firm pressure upon the spinous processes of the two upper lumbar vertebræ, she complained of deep-seated pain and of sickness; at this spot, the smarting pain had been so long felt; there was some tenderness on either side of these spinous processes, but none elsewhere; nor, was pain produced on the application of firm pressure to the spinous processes of the remaining vertebræ. This was decidedly a case of spinal disease, and had there existed any doubt on the subject, the subsequent yielding of the column would have removed it. Appropriate treatment was adopted, but the disease, although its course was arrested, and the more severe symptoms obviated, was not wholly eradicated and the parts restored until after a long course of treatment and confinement to the recumbent position. The consequent deformity was, however, extremely slight, and the patient eventually recovered, and is now well.

No other tangible or probable cause of disease presents itself in the foregoing case, than the slight accident mentioned above. The constitution of the subject was good; the first symptoms of morbid action in the affected part did not manifest themselves it is true, until after a considerable period of time had elapsed from the occurrence of the accident; still

the progressive increase in the severity of the symptoms was extremely slow and gradual, after they first obtained the notice of the sufferer, and from what has been before advanced, the malady was likely to have existed for some time previously to its causing pain, which I have shown, would hardly be felt till the disease had extended itself considerably, or had reached the bodies of the vertebræ. I conclude, therefore, that the accident was attended with slight injury of some portion of the spinal structure, that the injury gave rise to disease, which slowly extended itself, and was followed by results, such as I before stated might be expected under similar circumstances to take place; the case offers a favourable example of the slowness of the progress of disease of the spine, from its commencement, to the stage at which the symptoms become somewhat urgent.

Miss —, a young lady about twenty years of age, of delicate constitution, parents healthy, was about to sit down in a chair, which at the moment was removed from behind her, and she fell heavily backward on the floor. She did not complain of being hurt, but felt faint and sick; slight faintness and sickness recurred several times during the evening and the following day. About three weeks after this event, some weakness of the back was complained of, which was soon followed by pain; and six weeks or

two months after the occurrence of the accident I was consulted. The pain now complained of was referred to the lumbar region, and was described as being sharp and smarting, particularly after walking, standing, or sitting for a short time. The pain often extended round to the left side, and was accompanied by sickness, and frequent violent attacks of retching. There existed much tenderness about the lumbar region, which extended upwards in a less degree for a considerable distance; firm pressure applied to the spinous processes of the two upper lumbar and the inferior dorsal vertebræ caused great pain, and excited sickness and retching.

The case was regarded as an incipient spinal disease, and treated accordingly as such. As the symptoms indicated a more active inflammatory condition of the affected parts than ordinary, antiphlogistic remedies, such as cupping, blisters, and so forth were prescribed. This patient recovered after a comparatively short course of treatment; one vertebræ only yielded slightly, and the deformity was scarcely perceptible. This case offers an example of disease of the spine, occurring in a tolerable healthy though delicate individual, and partaking of an acute inflammatory character, in which the symptoms manifested themselves earlier than usual, increased more rapidly in severity, and imperatively called for active anti-

phlogistic treatment at an early period of its course. The rapid recovery shows the advantage of adapting active treatment in cases where acute inflammatory action is going on; whilst the deformity that ensued, though slight, proved the diagnosis correct.

E. —, a robust servant girl, of great muscular strength, about twenty-two years of age, had assisted in removing the furniture of the family when changing their residence; and possessing great strength, she had foolishly exerted it to an unnecessary extent, choosing to carry heavy articles alone, rather than receive assistance. Whether any mischief was done by this proceeding, I will not pretend to say; she was unconscious of having at any time then, before or since, hurt her back. She, however, applied to me about six or eight weeks after the time, above alluded to, for advice; she then complained of a gnawing, deep-seated pain at the lower part of the back; in the morning, on first rising it was scarcely felt, but soon afterwards it returned daily, gradually increased in severity through the day, and at night was very bad. The pain was first felt about three weeks or a month before I saw her; after which time it gradually increased in severity. On applying firm pressure to the third lumbar vertebræ, the deep-seated pain was much aggravated, and she complained that it made her feel sick; the other portions of the spine

appeared perfectly free from disease, as on applying firm pressure to the rest of the spinous processes no uneasiness resulted.

Inflammatory action was presumed to be going on in the affected part, and to have reached the body of the bone, and the previous over exertion I considered the cause of it. The nature of the case was explained, and the necessity of care pointed out; she was unwilling to leave her place and could not rest without doing so; therefore cupping glasses were applied to the back, with decided benefit, the pain having diminished considerably. At the expiration of a week it had increased and become as severe as before; she was now strongly advised to submit to an appropriate course of treatment, and she deemed it prudent to follow the advice given; she was again cupped; a large blister was afterwards applied and kept open for about a week and she was directed to remain in bed, which she did for ten days or a fortnight, after which not the slightest pain or tenderness was felt.

I do not assert that this case would have terminated in caries of the vertebræ, had it not been early subjected to treatment; but judging from the gradual invasion and progress of the affection, the increasing pain consequent to the long continuance of the erect position of the body, its manifest inflammatory nature

and the general similarity of the symptoms, to those which are usually observed in these cases, I decidedly think there are good grounds for supposing such would have been the result of the case, had no means been used to remedy the increasing evil. Without denying then that other causes operate in the production of spinal disease, and without asserting that it does not occasionally commence in this or that structure, I think you will allow that the facts which have been produced, are sufficient to justify me in affirming that spinal disease does often originate in the joints formed by the articulating processes of the vertebræ, or in the ligaments and membranes connected with the arches of the spinal bones. That a frequent primary cause of such disease is an accidental injury inflicted on some of these textures; that the injury is followed by inflammation, which extending to the bodies of the vertebræ, becomes the means of destroying, by the establishment of the ulcerative process, assisted by pressure, the spongy bodies of the bones and the intervertebral fibro-cartilages; that the disease begins and extends itself, in the way I have described, and that it may, in many instances, be arrested and cured in its early stages, by the judicious application of remedial means. The foregoing observations have reference chiefly to inflammatory disease of the worst kind, and in tracing

the origin, causes, nature, symptoms and progress of this formidable affection, I have enumerated the chief symptoms which characterise the slighter inflammatory diseases of these parts. It must be confessed that it is sometimes extremely difficult, if not altogether impossible, especially in the early stage of these affections, to determine positively which particular part of the spinal structure is affected; fortunately, the remedial means applicable to each case, will be similar in all, though the mode and measure of their application must be regulated according to the indications of each particular case.

Before concluding this portion of my discourse, I must add a few words respecting the treatment of spinal disease. This is not however an affection that can be treated by non-medical persons, and consequently what I am about to state, is not intended to teach you how to cure the disease; you will nevertheless learn that it is not without a definite object in view, that unpleasant remedial measures are sometimes prescribed by medical men.

The objects we desire to accomplish in the treatment of disease of the spine, are first to arrest the progress of the morbid action, and then place the affected parts in the most favourable circumstances, for the establishment and continuance therein of the healing process.

The first thing to be done is to remove all sources of irritation, and of these, as I before mentioned, pressure and friction are the two chief, in an inflammatory disease of the spine; these then we endeavour to avoid by enjoining quietude and rest in the recumbent position of the body: secondly we endeavour to arrest the progress and diminish the intensity or activity of the inflammatory action in the part, by the abstraction of blood, by leeches or cupping, if necessary; and in the next place by the application of counter-irritants, such as blisters, stimulating liniments, issues, setons and so forth. Having reduced the inflammatory action, we have succeeded in placing the parts in the most favourable condition for the healing process to be set up; the course of this process, may however be interrupted, and it frequently is so, in consequence of the patient fancying himself well because he feels no pain, and who acting upon this erroneous notion, gets about prematurely. The healing is a slow process, at best, in these cases and it must be confessed, it is a sore trial of patience for a person to keep quiet for months, when he thinks there is no occasion for him so to do.

The great and most important remedy in these affections and without which all others may be in vain employed, not only without advantage, but

merely with the effect of reducing the strength of the patient, and thereby doing harm rather than good; is rest, recumbent and quietude alone, by removing the sources of irritation, will in many cases be the only requisite curative measures; frequently when the sources of irritation are cut off, the diseased action quickly subsides. Believe me, rest and recumbency are our sheet anchors, in the treatment of spinal disease.

I propose now to direct your attention to the second or non-inflammatory class of spinal affections.

Many persons suffer from a great variety of anomalous morbid symptoms, which it has been usual for medical men to designate hysterical. Hysteria is declared by some writers to be an affection that occasionally simulates almost every disease to which the human frame is subject. This, it must be confessed, is one conceding a tolerably extensive range to our disorder, and for my part I do not profess to believe in the existence, or to understand the nature, of such all-pervading, changeable and intangible diseases. Doubtless numerous morbid sensations are frequently experienced by so-called nervous persons; but disease has a local habitation, though its consequences or

effects on the frame may be extensively or universally felt; and although the symptoms, which indicate the presence of disease may not point directly to the spot where morbid action is going on, yet morbid phenomena may be generally considered as conclusive evidence of the existence of morbid action in some part of the body, and it is the duty of the physician to discover if possible its locality.

Those morbid phenomena often described as hysterical affections simulating spinal disease, it appears to me, would be more correctly designated morbid sensations resulting from and dependant on irritation of some portion of the spinal structure. It is not easy to determine the precise seat of this irritation; whether it affects the roots of the nerves, the spinal marrow or its membranes, or some other structure; though the roots of the nerves are doubtless implicated more or less in most cases. We know that a state of irritation, distinct from inflammation does occasionally obtain, in other parts of the body; we know also that the chief pain attending disease in the hip joint, is often referred to the knee, and it is quite certain, that those who would attempt to cure disease of the hip, by applying remedies to the knee, would most assuredly fail to accomplish the object they had in view.

The attempt to enumerate the multitude of anoma-

lous symptoms termed hysterical, would prove an endless and hopeless, as well as an unprofitable task. The sensations of smarting, tingling, burning, the pains, tenderness and so forth referred by one to the back, by another to the chest, abdomen, legs, arms, or head, are a few of the symptoms called hysterical, and I feel perfectly assured that the presence of morbid action in some structure of the body must give rise to them; and seeing that those nerves, branches of which are distributed over the whole surface of the skin, as well as to the muscles and other structures proceed from the spinal marrow, it is probable that morbid sensations similar in character, such as described above affecting all or any parts of the surface of the body, may result from some peculiar state or condition of the spinal chord, its membranes or other textures connected with the roots of the nerves. I will not affirm that all anomalous morbid sensations such as are alluded to above, depend on spinal irritation; but I know and unhesitatingly assert, that many of those miscalled hysterical affections, simulating spinal disease, are in fact, cases of spinal irritation, which are in general easily curable, by a short and rational course of treatment.

As these affections are not characterised by a class of symptoms, common to all, but on the contrary,

have each their particular groups, which vary so much, that rarely do two persons complain of the same sensations, the relation of the particulars of a few cases will probably interest you more and furnish you with more intelligible information respecting the nature and symptoms of those disorders, which I believe to consist in an irritable state of the spinal chord, its membranes, the roots of the nerves or parts connected with them and which occasionally simulate spinal diseases, than a long and tedious dissertation on the subject. I shall therefore proceed to describe a few cases in detail.

Miss —— a middle aged lady requested my advice under the following circumstances. Some years previously she had suffered for many months, from an undefined affection of the spine, and apprehending a similar attack she consulted me; she complained that for a month or more, her back had felt weak, which had compelled her gradually to curtail the length of her walks, till at the time I saw her, she could hardly walk a quarter of a mile and not even that short distance without resting; it was with difficulty she could walk up stairs and a feeling of stiffness and numbness pervaded the lower members, which she was unable to move so quickly as usual.

I found, on examining the back, a slight degree of

tenderness existed generally about the loins, but firm pressure on the spinous processes did not produce pain ; at one spot however about an inch to the left of the spinous processes of the lower dorsal vertebræ, there was extreme tenderness, and when this circumscribed spot, not larger than a shilling, was touched, the effect was similar to an electric shock ; the slightest touch caused a sudden involuntary contraction of almost all the muscles of the back. A blister was applied to the back and kept open for several days, and the patient confined to the recumbent position ; at the expiration of ten days, the legs had recovered their strength and freedom of motion and the weakness of the back was no longer felt.

Miss —— a young lady about nineteen years of age, complained of tenderness and smarting about the shoulders and back ; a slight touch or blow produced extreme pain and smarting, which lasted for a considerable time ; she had constant pain in the head, complained of weakness in the arms, pain in the left side and tenderness of chest and abdomen ; she was under treatment for disease of the lumbar vertebræ. On examination the back was found extremely tender on both sides of and upon the spinous processes ; at the seat of disease the tenderness had greatly increased since the last examination, and it

now extended up to the head. A large blister over the diseased part, viz: the loins, removed all the tenderness and smarting, &c., from the back, shoulders, arms and so forth, and the disease progressed favourably afterwards. Several similar though slighter attacks occurred in the course of the treatment of this case, which were cured by the same means. The next is one of the most serious cases of spinal irritation that have come under my notice for some years past; the sufferings of the patient were great and recurred at short intervals for several years, whilst the curative treatment was both short and satisfactory.

Miss —, a lady about twenty-four years of age, came under my care, in consequence of an attack of influenza, whilst on a visit near to my place of residence. I was one day hastily summoned to visit her in consequence of the occurrence of a severe paroxysm of pain, which alarmed her friends. She complained of violent pain under the left breast, extending down the side to the hip, thigh, and leg, and round to the back. The violence of the paroxysm having abated, she gave me a few hours afterwards the following account of her health. She had been subject to these increasingly violent paroxysms of pain at intervals, varying from one to two or three months, for three or four years past, for which she had repeatedly been bled,

and had had leeches and blisters applied to the side, and physic in abundance had been taken ; her general health had been declining gradually for a long time in consequence of these violent attacks, which threatened to break it up altogether. These paroxisms of pain were followed by extreme tenderness down the left side ; the thigh and leg on that side were for several days afterwards painful and almost powerless ; the pain did not appear to me to be of a common spasmodic character, and it was clearly not the result of inflammation. On farther inquiry, I learned that for some days immediately preceding these attacks, dull, but increasing pain was usually felt in the back, and which extended round to the side, beneath the breast, the chief seat of violent pain in the subsequent attack ; which led me to think it not improbable these frightfully violent paroxisms of pain might depend on some affection of the spine. I therefore requested permission to examine the back, which was readily accorded. I found a great degree of tenderness existed throughout the whole length of the spinal column, more particularly at the lower portion of the dorsal and upper part of the lumbar region, where on pressure being applied upon the spinous processes, pain was felt (deep-seated), which extended round to the side and chest, and caused sickness. I was apprehensive that disease existed

in the bone, but hoped, nevertheless, in consequence of the absence of pain in the worst or most tender spot, the back not generally feeling painful, except a few days prior to a paroxysm as above described, and as no constant pain increasing towards evening was complained of, that such was not the case; but that the pain, etcetera, depended on, and resulted from irritation of the spinal chord or its membranes. I told my patient that I thought we might probably succeed in removing the cause of her suffering, and she at once expressed an anxious wish that the attempt should be made.

The patient being in a very debilitated state, it was deemed inexpedient to abstract blood, either by leeches or cupping. I applied a large blister to the back and enjoined recumbency. A discharge was kept up from the blistered surface for several days, which was then allowed to heal; and at the expiration of a week or ten days, I was much pleased to find, on examination, that the tenderness of the back had almost entirely disappeared. About a week after the blister had healed, some slight tenderness still remaining, I applied another, and kept it open as before, and from that time all tenderness, and every other morbid symptom disappeared. She rapidly regained her strength, and for six months afterwards, during which period I had frequent opportunities of seeing

her, she continued in a state of robust health ; and I believe has had no return of the complaint since. No paroxism of pain recurred after the first blister was applied ; the weakness of the limbs passed off, and perfect recovery took place.

It is surprising that her medical attendant never suspected the cause of her sufferings to reside in the spine ; he blistered, and applied leeches to the side, and it is true the pain was from time to time relieved ; it nevertheless returned, and that frequently, during a period of three or four years, and had at the time I first saw the patient, rendered her the very picture of ill health. Neither her usual medical attendant nor another gentleman who met him in consultation on the case, suspected the spinal structure to be the seat of disorder ; and yet they had intimated to the friends of the lady, that it was probable one of the violent paroxisms above described, would prove suddenly fatal at no distant period. The cause, however, of her sufferings having been ascertained, the application of two blisters, together with the remedial assistance of about three weeks' recumbency, completely restored her to health.

Here, then, we have positive proof that spinal irritation may continue for a series of years ; that its intensity may vary at different periods, that it may, and does occasion much suffering ; and that it

sometimes gives rise to alarming symptoms. Whilst the short space of time requisite in the present case for effecting a cure, clearly establishes the point, that no disease properly so called, existed in the osseous structure, and that no disorganization had taken place in any portion of the structure of the spinal column.

One circumstance relative to this case is worthy of remark—viz., that although the back was found on examination to be tender, from the head downwards to its lowest part, and extremely so about the region of the loins, the patient was nevertheless unconscious of its being so, and replied in the negative to the inquiry if the back was tender, merely stating she could not bear her clothes to be tight, as that made her feel generally uncomfortable. She said she had not the slightest conception her back was so tender until I examined it.

Mrs. —, a poor woman, thirty-five years of age, the mother of five children, complained of occasional severe pain in the back, especially after carrying her infant about for some time, or otherwise exerting herself more than usual; she had four years before fallen down stairs, and had about a year afterwards experienced a similar misfortune. She suffered no serious injury from either fall, but had ever since been subject to occasional attacks of pain in the back; she

had also experienced more frequent attacks of spasms (to which she was subject) since. On examining the back I found considerable tenderness about the dorsal and lumbar regions, especially the latter, where on applying firm pressure to the spinous processes, the pain produced was so great as to cause her to cry out, she at the same time complained of an uneasy sensation in the stomach, and of sickness. The back having been very painful for some time, a dozen leeches were applied, and afterwards a blister, which was kept open. She was at this time obliged to keep her bed for nearly a month in consequence of a severe attack of hepatic disease; on recovering from which, the pain and tenderness of the back had entirely subsided, and I have not heard of her having had a return of either since.

Many instances might be mentioned, in which the cause of those flying-pains, so often complained of as affecting at one time the side, at others the back, chest, abdomen, and so forth, accompanied occasionally with smarting and tingling sensations, and excessive tenderness on the application of slight pressure, has been satisfactorily ascertained to consist in an irritable state of some portion of the spinal structure; enough has, however, I hope been adduced in confirmation of the opinions and views I have ventured to promulgate, and to show that the presence

simply of pain and tenderness in the back, is not alone sufficient to justify a prolonged confinement of a patient to the recumbent position, under the often mistaken notion, that disease of the spinal column must necessarily exist.

It has also been clearly demonstrated that temporary recumbency, conjoined with other remedies, operates powerfully and effectually as a curative means, in non-inflammatory, or irritable affections of the spinal chord, or other structures connected with the spinal column : and I trust it has been satisfactorily proved, that without recumbency, almost all other remedies are in a great measure powerless and ineffective when applied for the relief or cure of positive disease of the spinal bones. Hence it is clear that the one thing needful in all affections of the spine is, before applying remedies, to ascertain if possible the precise nature of the affection, we are called upon to treat ; and as I before stated, it is the special duty of medical men, to discover and treat disease, and which they alone are competent effectually to do.

In cases of spinal disease, where prolonged recumbency is requisite, the general health must be carefully attended to, and all necessary means used to maintain it at the highest possible standard compatible with a state of rest or inactivity of the body ;

the local affection will proceed more or less rapidly towards recovery, according as the general health is good or otherwise. Stimulating diet and drinks are generally objectionable, as they tend to excite fever and to derange the functions of the digestive organs, and should therefore be avoided ; little medicine will usually suffice ; morbid symptoms, and occasionally very troublesome ones occur, must be met as they arise. A light nutritious diet, with the occasional use of mild laxative medicines, will tend to obviate many of the inconveniences, which commonly result from long continued inactivity of the body. Much has lately been written respecting the most eligible position of the body in the treatment of spinal disease ; some strongly advocating the prone position, or that in which the patient lies with the face downwards ; whilst others prefer the usual supine position on the back. In many cases, the position of the body is of little importance, provided only that it be horizontal or nearly so ; the removal of pressure from the diseased bone being the object we wish to accomplish : in general I prefer that position in which the patient is easy. The prone position certainly affords greater facilities for applying topical remedies, than the supine ; still it is often disliked by the patient and this is a valid reason why it should not be insisted on, if another and less objectionable posi-

tion will answer as well. In the severer cases of this disease, where the bodies of several of the vertebræ have been absorbed and a posterior curvature is inevitable, the prone position will usually be preferable, as it allows the vertebræ above and below, the space left vacant by the removal of the bodies of the diseased bones to meet or approach each other, whereby their consolidation is facilitated. I believe the supine position will still be adopted and preferred in the early stages of disease, as well as in cases of disorder or irritation of the spinal structures, and in the majority of cases it will fulfil every necessary indication; but when the bodies of several of the vertebræ are absorbed, there can be no question that the prone position is decidedly best; a curve in these sad cases is inevitable and the consolidation of the bones must be promoted, by every means that can tend to assist in its accomplishment; the supine position cannot in these severer forms of the disease, prevent deformity, but it is a question, whether, if persisted in, it may not sometimes retard the healing process, by preventing the approximation of the surfaces of the diseased bones.

Much credit is due to the gentleman who first proposed placing the patient in the prone position; it is a decided and important improvement in the treatment of many cases of spinal disease.

I have but few words to add, on the subject of lateral curvature of the spinal column ; this affection is totally distinct in its nature, from disease of the vertebræ. It consists simply of a lateral deviation of the spinal column from its normal line ; it is a cause of deformity, but cannot be properly termed disease, with which however it is occasionally complicated. Young females are more often the subjects of lateral curvatures, than persons of the opposite sex ; the causes of this affection are many, and the plan of treatment must be regulated by the circumstances attending each particular case. As it is not my intention to enlarge upon the causes and treatment of spinal curvatures, I would merely observe here, that the affection may occasionally occur as a consequence of spinal irritation, affecting chiefly the muscles of the back, whereby these organs are deprived in a great measure of their power, and the spinal column of the support which they usually afford it. The effect resulting from this condition of the muscles is that the column yields, a curve takes place, forming a convexity towards the affected side, at the point where the muscular support is lost ; it should be remembered that the causes which operate in producing a curvature of the spine tend likewise constantly to augment it ; I would therefore counsel you not to neglect or regard as trifling, symptoms,

however slight they may appear, which indicate the presence of disease or disorder in any portion of this important structure ; but rather at once to investigate and endeavour to ascertain the cause which gives rise to them ; for you may rest assured, that until the nature of any disease is clearly ascertained, all treatment thereof must necessarily be in a great measure empirical, and consequently unsatisfactory.

In conclusion, I shall only remark that spinal curvatures would probably become less prevalent, were children allowed to take free and unconstrained exercise ; if ligatures and artificial supports of all kinds were abolished, formality dispensed with, and constrained positions of the body avoided during the period of growth. The muscles are developed and strengthened, and the bodily health is improved and rendered robust by vigorous and athletic exercises, which should therefore be encouraged, yet not rendered compulsory ; and be it remembered, that the robust are rarely, if ever deformed.

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