An enquiry into the causes of the curvatures of the spine, with suggestions as to the best means of preventing, or when formed, of removing the lateral curvature / By T. Jarrold.

Notes for Mr. Ll.

From p. 8 to p. 13. I have marked a few passages which may be compared with those in the other works.

The next Chapter beginning p. 17, regards Curvatures from diseases, with which we have nothing to do.

Such is the case with the following:

With Hip-joint, we have nothing to do.

Lateral Curvature, &c. are quite hypothetical.

AN ENQUIRY

INTO

THE CAUSES

OF THE

Curvatures of the Spine.

AN ENQUIRY

INTO

THE CAUSES

OF THE

Continuance of the Plague.

AN ENQUIRY

INTO

THE CAUSES

OF THE

Curvatures of the Spine,

WITH SUGGESTIONS

AS TO THE BEST

MEANS OF PREVENTING,

OR

WHEN FORMED, OF REMOVING THE

LATERAL CURVATURE,

BY T. JARROLD, M. D.

London:

PUBLISHED BY LONGMAN, HURST, REES, AND CO.; CADELL AND DAVIES; RICHARDSON, ROYAL EXCHANGE; AND SILBURN AND RICHARDSON, MANCHESTER.

Printed by SILBURN and RICHARDSON, Manchester.

PREFACE.

IT is not because the following pages contain a complete view of the Subject, that they are offered to the Public. Much yet remains to be known; and probably, some of the ideas advanced will need correcting, before diseases which present themselves in so many forms, and have received so little attention, can assume

a shape in which they will be known, and their varieties discriminated; and a mode of cure formed on scientific principles, fully established. Symmetry of person is always desirable, from the strength and vigour which it imparts. The Greeks paid some attention to the means by which this might be assisted; but in modern times, little notice has been taken of the subject. The knowledge which will be acquired of the influence of muscular action on the figure, by the prevention, or removal of the Lateral Curvature of the Spine, may supply this defect. In the following treatise perspicuity has been studied, that the general reader may inform himself in the subjects

of which it treats; hence, it probably may not bear so professional a form, as it otherwise might assume.

Manchester, Sept. 4th, 1823

INTRODUCTORY REMARKS.

WHEN a lateral curvature of the Spine has existed any considerable period, it is so commonly accompanied by a feeble and emaciated frame, as to warrant the conclusion that some specific disease exists; which disease is the cause or consequence of the curvature. In what other way can the connection so common, be accounted for. In cases that are so slight as not to be detected by casual observation, a deficiency of flesh on the arms shews, or at least excites a suspicion, that the Spine is not free from disease. When the curvature is so considerable as to influence the air and gait in walking, the whole

system wears the appearance of debility and disease, with the exception in many cases of the part we denominate the Bust, which resists the blight and withering the limbs have sustained, and still wears the aspect of health: or, if this be in any way diminished, it is compensated by an interesting air of tenderness which the countenance acquires; as the body loses in symmetry, the face gains in expression. But what is the disease that thus acts upon the system? what its nature and character? Unless this is ascertained, and we know the source, we shall at best but palliate, not remove, the evil. Plans of cure have been proposed, without a reference to the cause of the affection they profess to remedy. The eye is struck with the fact that the Spine is bent, andupon this fact, solitary and uncombined, plans of cure have originated. One proposes a well contrived machine, to bear off the weight of the head, from the part which has protruded. Another proposes to accomplish the same end, by confinement to an horizontal posture for several successive months. A third recommends

the carrying a weight upon the head, and by the exertion thus occasioned, to compel the muscles to force back again the yielding parts to their natural position.

As the plans of mechanicians, these are certainly very judicious and appropriate; each of them have been tried with success, and have the support and recommendation of Gentlemen who would not impose upon the public. But it is evident that these plans only relate to the Spine as having been mechanically curved, and can have no relation to the cause of the affection. It is not treated as a medical subject; no diseased action of the system might have existed; it might have been like the Club-foot, a natural defect, or, at best, an accidental or a voluntary bending, for every plan has for its object, the restoration of the Spine to its natural figure by mechanical means, and acts on the principle that, that which is bent, may, without regarding the cause, be forced back again. Suppose all that was intended to be accomplished, and that the

vertebræ were again in their proper positions: by what means are they to be preserved there; the source and spring of the evil still exists, the cause of the curvature still continues to act, and when mechanical support is withdrawn, the curvature generally re-appears. Should a cure have been effected, it is from the bones which had been displaced, anchylosing, and thus forming a stiff obliterated joint, or a series of them, incapable of any motion. The plans recommended, facilitate this result, and can contemplate no other; but this is not a cure, it is the end and confirmation of the malady; the disease has run its course, and has ended in the destruction of the joint.

The attempt to cure, if it will bear the name, has had respect only to the preservation of the position of the diseased vertebræ, a mechanical effort, and so far, may have happily succeeded; but the progress of the disease has not been arrested, its violence lessened, or the cause of the evil in any way removed, or even corrected. I have not sufficient information to enable me to determine

which of the plans now in use have been most efficacious, but I presume that, which admits of being the longest and most uniformly persisted in: each of the plans have succeeded, but the number of successful cases are very small, compared with the number of failures. The suffering individual having only the option of mechanical means, when these fail, no resource remains: the symmetry and the health of the system must therefore, very soon become the prey of the Malady.

Miss J*** a young lady of fifteen, has, when in an erect position, a considerable lateral curvature of the Spine, which, on lying down a short time, she is able to overcome by muscular effort; but, on rising, the curve re-appears by the vertebræ again giving way. What advice can be offered to this young lady? if she should be recommended to lay on a couch for a year or upwards, or to wear a machine, or to carry a weight on her head, or to have issues applied near the Spine, or to use friction, can any other prospect be presented but this; that, in time, the

vertebræ that form the curve may inflame, and anchylose, and, by destroying the action of the vertebræ upon each other, prevent the possibility of the recurrence of the curvature. It might indeed be said that the cause which first occasioned the defect in the Spine may spontaneously cease, but our knowledge is not sufficiently advanced to be able to anticipate this result, or to discriminate in the early stages, between a slight and a severe case; between one, which the energies of the constitution will overcome, and one which will continue to advance. The case of this young lady, far from being solitary, is of common occurrence. There are but very few, who, if at the commencement of the affection were requested to stoop, so that the back shall form the segment of a circle, but the curvature would be removed, and the vertebræ made to appear in their natural situations, making it evident that if the cause were removed, the effect would cease; for, if the strength of the muscles be sufficient to draw back the vertebræ, there can be no local cause in the way of a cure: something must originate the

evil; remove it, and nature is sufficient to effect much in the restoration of the figure.

Various floating unfounded opinions exist, that assign other causes for the malady of which we are treating. Some referring only to the thin and feeble appearance of the person; suppose that hectic fever exists, and occasions all we see and lament in this respect; but hectic fever cannot continue through a long life, nor without morning rigour, and evening heat. The symptoms that characterize hectic fever are happily unknown to many, who yet suffer from a curvature of the Spine. This, therefore, cannot be the cause that wastes their flesh. By others, this thinness is attributed to that change of the relative position of the viscera which a decrease in the length of the Spine must occasion. Were this the cause, some marked, and decided, and permanent disease would accrue; but this has never been mentioned as a consequence, nor does any particular derangement of the functions exist. The Individuals whose Spines are diseased, are

not strong, and are subject, especially in the spring of the year, to indisposition; but to no diseases that characterize a peculiarly morbid state of the secretions of the viscera. There is therefore, no ground to ascribe the loss of flesh to either of these causes. Opinions founded on no better evidence, are advanced as the cause of the curvature itself; these also, it may be proper just to glance at. The first, and most important of these, treats the Scrofula as the cause. Mr. Pott was unfortunately of this opinion, and his name has given it currency. The subject does not appear to have been investigated by him: he speaks of the habit as strumous, and an opinion thus loosely advanced has gained importance from his name; but there are strong reasons for believing, that Scrofula is not the cause. Many persons with diseased Spines are the children of healthy parents. The Hip-joint disease, which may be considered as of the same nature as that form of the curvature of the Spine, which is from within outward, Mr. Ford informs us often occurs without the parents being affected with

Scrofula;* and Mr. Wilson remarks that "ulcerations of the parts composing the Hip-joint certainly occur more frequently in people whose habits are scrofulous, than in any other, but they may arise and be carried on without producing any marked symptom of their being scrofulous, or the person in whom they occur being disposed to that disease".† No other bones of the system are subject to caries or to be enlarged, or in any other way affected by this malady, in whom the glands have not previously been the subjects of the disease, or, at least, without indisputable proof of its existence in the system. There are, doubtless, many who suffer from a curvature of the Spine, who also have a scrofulous habit, but the connection is not necessary, and consequently, they are not cause and effect. Suppose that the connection could be traced in three fourths of the whole number, the other fourth must destroy any inference drawn from that

* Observations on the Hip Joint. P. 3.

† Observations on the incurvations of the Spine. P. 46r

circumstance; for it cannot be presuming too much to say, that one common principle of disease pervades the whole. It therefore cannot be Scrofula. Another assumed cause of the Lateral Curvature is the Rickets. Mr. Wilson mentions this disease as the cause of the Lateral Curvature of the Spine, but supports it by no argument, or fact. He even does not enter upon the subject with a view to its investigation, unless the following quotation, which contains the whole of Mr. Wilson's Pathological remarks, may be considered as entering upon the subject. "As there are more than one curve, it is clear that the altered shape of the Spine cannot be owing to the greater contraction of the muscles on either side; nor can it arise from a partial deficiency of bony matter, as a redundancy of it is pressed out on the weak side. It is, therefore, a clear inference, that the curve is produced by weight or pressure that have been long or frequently applied to a particular surface of the bones, in constitutions where, although every part of the bones have an equal supply of the Phosphat of Lime, yet in

all of them, that supply is less than in strong and healthy bones."*

But a name which influences the treatment of a disease requires an attentive investigation, and even then should be cautiously received. The Rickets are characterised by a deficiency of oseous matter in the system, in consequence of which the heads of the bones are enlarged, and through the whole extent are so softened as to bend by the weight of the body. It is not one bone, but the whole that suffer, even the skull is not exempt, but is so irregularly enlarged as to set craniology at defiance, but the bones which support the chief weight of the body suffer the most. Were the Lateral Curvature of the Spine occasioned by Rickets; the remedies which benefit the one would be applicable to the other, but here the connection absolutely fails. The same plan of cure is never recommended in both cases; the disease that bends the Spine will not yield to the

* Observations, &c. P. 46.

remedies that are efficacious in the disease that bends the knee.

Another assigned cause is Mollities Ossium. This disease also, is characterized by a deficiency of bony matter, in consequence of which the bones give way, and yield to the ordinary pressure of the system, but the vertebræ of the Spine that have been laterally curved are perfect in their structure, and in their shape; they have not given way from any softening of the bone; if so, each vertebræ would have been bent. The effects of Mollities Ossium are demonstrable in the Skeleton, but the vertebræ that have been laterally curved, are free from such effects.

I have thought it proper to state these various opinions, because they have some currency. Had they received the sanction and support of men who had investigated the subject, more attention on my part would have been demanded. But who has investigated the subject, and assigned, on any satisfactory evidence, or deduced from

argument, any proof of the cause of the curvatures of the Spine? No author who has treated on the subject has found it necessary in order to communicate to the public the information he proposed to examine its cause. Mr. Pott with great accuracy and elegance described the commencement and progress of the curvature, from within, outward; but he has gone no further. The remedies he proposed and, which under his management had been so efficacious, relate only to the vertebræ in a state of disease, and as he had discovered a remedy in which he had confidence, it was the less necessary for him to apply his great mind to search for hidden causes. The same remark will apply to those authors who have directed their attention to the Lateral Curvature satisfied with the mode of cure, they have disregarded too much the origin of the malady. Sufficient has probably been stated, to prove, that none of the assigned causes have any claim to support. The question will now be asked, what then is the cause? I presume it to be a specific disease, and not a modification

of other diseases: which admits of the salutary administration of medicine, and, so far as my experience goes, the Lateral Curvature may be entirely prevented, and after it has taken place, if of recent occurrence, removed.

OF THE SPINE.

THE Human Spine, from its structure, is admirably adapted to the office for which it is destined. An office characteristic of the rank and dignity of the race to which it belongs, and which distinguishes it from the Spine of the brute. It bears the head erect, and sustains its weight; while the head of the mere animal is suspended, looking towards the ground. Wheresoever may have been his birth-place, whether at the Poles or the Equator, or however exalted or mean his intellectual faculties, he walks erect; when abandoned by his parents, and nurtured in

a forest, this distinction does not forsake him; if deprived of reason, if an idiot, he is still a man; it is structure, not imitation, that gives to him this superiority.

"Erectus ad sidera vultus."

As the office of the Spine of man, and of animals, in supporting the weight of the head, is so dissimilar, there can be no correspondence in the mechanical effects produced. In the one case, the head rests directly on the Spine; in the other, it is supported by muscular and other aid, the Spine yielding but little assistance.

Nor are our inquiries rendered more successful, by any circumstance arising out of the growth, or labor, or diseases of animals. A colt, when too soon set to work, is stinted in its growth, and loses much of that beauty and excellence of form, it might otherwise have acquired. But no disease of the ligaments, or vertebræ, is engendered. No deformity ensues. When a horse is habituated to the carriage of

a heavy load, the back sinks, and a curve is produced, but not from a diseased action disposing the vertebræ to a change of position; it is the effect of mechanical pressure, applied to the Spine in a horizontal position, and can bear no relation to the curvature, which is the subject of this treatise.*

Animals, in a state of nature, are seldom imperfect in their form, or liable to many diseases; but, when domesticated, these become more numerous, and some of their physical properties undergo a change. The attention which is paid to obtain those whose sense of smell is exquisite, or whose speed is great, or which may speedily be made fat, induces diseases somewhat similar to those which afflict the human race, but the curvature of the Spine is an exception, animals not being liable to any malady of this nature: thus all

* This was particularly exemplified in a Horse, the property of the Mersey and Irwell Navigation Company, which a short time since died at the uncommon age of Sixty-two.

analogical reasoning fails, the subject belonging exclusively to the human race.

The Spine admits of many deviations from any supposed model or standard of perfection, without their being considered defects; the Spine of one individual is short, in proportion to the height of the body, whilst that of another is long, the shoulders of one are high and arched, the back of another is hollow. These two natural incurvations being in opposite directions, generally balance each other, though round shoulders may exist without a hollow back. The shoulders of Negroes are more rounded than those of Europeans, but their backs are not hollow.

Some Europeans resemble Africans in the figure of their persons, but this deviation from what is considered a more perfect form, is not productive of a diminution of strength or agility; for should a line be drawn from the neck, to the abdominal projection of the Spine, it will be

directly over the centre of gravity, which is an evidence that the symmetry of the person is not defective, and consequently, that the physical powers may operate with all the force and energy which the system admits of. The line here drawn, is that which the most perfect skeleton presents; being over the centre of gravity it harmonizes and influences the whole system, giving to each part its proper bearing, its proper weight, and centre of motion. A person burdened with fat, and one not well proportioned, are alike incapable of graceful or energetic action.

These variations, these lines and shades of difference, being connected with an equal degree of vigour, evince, not the capricious sportings of nature, but the perfection of our form. And if we enlarge the field of our inquiries, these remarks will still remain correct; an individual of low stature is not less perfect than one who is tall, neither is he whose make is close and compact, inferior to the individual who

is slender and agile, nor has he, whose shoulders are by nature more than ordinarily round, any physical disadvantage. In one, there may be more of dignity, in another, more of grace, in a third more of strength; one structure is illustrative of only one character, strength and flexibility do not suppose the same structure.

But all these varieties are equally necessary to exemplify the physical powers, and mental capacities, with which we are endowed. The powers of the mind are cultivated by one individual, those of the body by another, and each acquires a corresponding physical expression. The statues which are the ornament of the present, and the honour of former ages, were designed to express distinct properties and dispositions. The Venus de Medicis, expresses all that is elegant and graceful in the female form. Strength and robustness, would destroy the expression of delicacy. The Statues of Apollo Belvedere, or, of the Gladiator Repellant, excite very different emotions, more by

the attitude and expression, than by the natural conformation. Every perfect form, is capable of expressing some valuable character, or property; and when the form is imperfect, in many cases, the evil is not very important in a physical point of view; and in all, a countenance expressive of a cultivated mind, and a benevolent heart, elevates the individual far above those of ordinary mental attainments, and of the most perfect symmetry of figure. The qualities of the head and heart do not depend on physical proportions, and therefore are not associated in our estimation of character; nor is weight and consideration in society, in any way influenced by personal appearance. I have been led to make these remarks, from a knowledge of the pain, and sense of humiliation, which many youths feel, who suffer from a curvature of the Spine.

We come now to the more immediate object of this chapter, a description of the Spine, and its offices. A mere out-line only is requisite, as

it is not intended to instruct the anatomist, but to assist the general reader. This portion of our system, consists of many distinct bones, so united, as to form a column of great flexibility and strength; not exactly perpendicular, but taking a gentle sweep inward, towards the abdomen, and another outward at the shoulders. The bones, or vertebræ, of which the Spine is composed, are twenty-four, forming in a less space than three feet, as many joints. At a first glance, it appears impossible that such a structure, should bear the various motions and attitudes, to which the common movements of the body give occasion, without becoming curved; but it is a pillar of strength; small at its upper extremity, and becoming broader as it descends, resting on the Os Sacrum, as on a firm and solid basis.

The vertebræ of each joint are held and bound together, with a strength far superior to that bestowed on any other joint; and, in addition, they are maintained in their position, by the

muscles of the back; so that in whatever way the Spine may be moved, there is a strong counteracting power to restore it to its natural position.

The vertebræ in their general form and structure, resemble each other; each having a body, smooth and rounded within the cavity of the abdomen, but in the opposite direction, this roundness gives place to several projections or processes, one set of which, called Spinous, is perceived when the back is bent, and of these the vertebræ of animals with which all are familiar, give an idea sufficiently correct. A second set are called Transverse; and the third Oblique. These processes contribute to the motion of the Spine, and support the weight of the body when it is bent backward, and by greatly increasing its strength, interpose a powerful obstacle to its dislocation.

The motion of the Spine is compound, comprising the Hinge, and the Ball and Socket mo-

tions; by the one, the body is bent backward and forward, by the other, it is turned in various directions; thus giving the Spine so much freedom of action, so much power of recovering itself when bent, that it is difficult to conceive of a permanent curvature taking place from mechanical causes. The vertebræ of the neck are most effectually preserved in their position, by the lower part being of a wedge like form; these are received into corresponding concavities in the vertebræ below. The articulating processes are so oblique, as to form a wedge between the other processes, and thus the neck acquires additional strength. By this beautiful structure, the neck possesses a very extensive capacity of motion, surpassing that of any other part of the Spine. The cervical, or vertebræ of the neck, are seven in number. The eighth is named the first Dorsal, on each side of which there is a hollow space for the reception of the head of the first rib; the eighteenth or last of the dorsal vertebræ receives the head of the twelfth rib. Within the ribs are the heart and lungs, organs of such vi-

tal importance, that they are well guarded; and as freedom of motion is incompatible with safety, we find the dorsal vertebræ much limited in this respect. The upper edge of each of the Spinous processes of these vertebræ, forms a ridge, which is received into a groove in the vertebræ immediately above; thus giving a direct limit to certain motions of the body. But, notwithstanding this state of comparative rest and quietude, a state of accumulated, not diminished strength, the dorsal vertebræ are the usual seat of the Lateral Curvature.

The five remaining vertebræ are the lumbar, these are broader, but flatter, less of a wedge-like form than either of the former; but their motion is much more extensive and free than those of the dorsal; on the Skeleton these appear to present the fewest obstacles to curvature; their inner surfaces being almost flat, they cannot make the same resistance to mechanical pressure, if applied obliquely, that a wedge-like structure does. But the vertebræ, through the whole

length of the Spine, are so bound and held together by ligaments and muscles, that the number of the joints, in place of being a source of weakness, is the occasion of strength. It is difficult to conceive of a bone of the same diameter as the Spine, to be the subject of so few accidents; the bones of the hands and feet are often broken, the joints of the knee and shoulder are often dislocated, but the back seldom receives any injury; this cannot be so much the consequence of situation, as of structure. As the Spine gives a passage to the Spinal marrow, death is the consequence of dislocation; hence the wise provision of providence in guarding it from accident.

The vertebræ are united to each other by an elastic cartilage which adheres to the edges of the bodies of the vertebræ, and by thus connecting the two that are contiguous, completely close the joint through the whole of which the cartilage extends; having for a centre an elastic, and nearly incompressible pulp, which

acts as a sort of pivot to the joint. When the Spine is bent, the elasticity of the cartilages, essentially contribute to the easy and graceful motion of the body.

As these cartilaginous, or, as they are more properly called, intervertebral substances, for they have not the firmness or texture of cartilage, are necessarily connected with, if not instrumental to the formation of the curvature of the Spine, it is desirable that their nature and office should be better known. But as my present object is not to investigate anatomically, I shall content myself with stating, that it is an elastic cushion on which the vertebræ rest, and which prevents the ordinary concussions to which the body is liable, from being injurious. Its thickness in a middle aged person, is, between the lower joints of the dorsal vertebræ about half an inch. The weight of the superincumbent structure is supposed to compress the intervertebral cartilages during the day, and from this circumstance arises the fact, that the height

of a person is almost half an inch less in an evening, than when just risen from bed. The horse has not this substance, but many other animals possess it. Although the quantity of fluid between the vertebræ is small, yet there is enough to constitute the intervertebral substance a secreting organ; consequently liable to disease. It is agreeable to the analogy of nature to believe, that this liquid varies in its quality and quantity, has its healthy and diseased state, and, when in the latter, is the occasion of lassitude and pain. Is the Spine weak, is it rigid, is it painful, does age and exercise alike diminish the height, and is not the intervertebral substance in no small degree the cause. But we have no definite idea of the diseases peculiarly its own. Anatomists have not furnished the necessary information of diseased appearances from which to draw rational conclusions, and direct suitable remedies.

Mr. Brodie, whose accuracy in stating facts, is only equalled by his opportunity of obtaining a

knowledge of them, has paid some attention to the subject. On inspecting a diseased Spine, he states, "the intervertebral cartilage between the eleventh and twelfth dorsal vertebræ had entirely disappeared, and the opposite surface of the bones were in a state of caries; but this had not extended itself sufficiently to occasion any sensible loss of bony substance."

"The intervertebral cartilages between the third and fourth, fifth and sixth, seventh and eighth, tenth and eleventh dorsal vertebræ; and that also between the twelfth dorsal and first lumbar vertebræ, were all found in a perfectly natural state towards the circumference; but in the centre they were of a dark colour; and on the surface towards the bones they as well as the bones themselves, were in a state of incipient ulceration, but without any appearance of Pus having been secreted."*

---

* Brodie on Diseases of the Joints, P. 265.

Another case he also had an opportunity of inspecting, in which the morbid appearances were nearly similar.

This, I hope, is only the commencement of a particular attention to the subject, by that gentleman.

It must be supposed that a substance constantly acted upon, is not less subject to disease than the ligaments of a joint, although we are ignorant of its nature.

OF THE

CURVATURE OF THE SPINE,

FROM WITHIN, OUTWARD.

IT is a fact which every day presents to our observation, that an outward curvature of the Spine to almost its whole extent, does not necessarily incapacitate the individual, from pursuing with a good degree of vigour and alacrity, the common avocations of life. It is equally true, that a curvature extending to only two, or three, of the vertebræ, is sometimes attended by the total loss of the use of the lower extremities. To account for results so opposite, some cause which does not operate in both cases must be admitted, and which renders it necessary to treat the subjects separately. I

shall therefore commence with the curvature without loss of motion.

This disease sometimes commences in infancy, when much pain is incompatable with life; and at a later period, suffering is not essentially connected with the formation of the curve, although it is a common attendant. A. B. four years of age. About three months ago, four of the dorsal vertebræ were discovered to have projected; no complaint of pain had been made, nor had there been much indisposition; when the child was examined by me a month since, the Spine bore pressure, and the application of a sponge with hot water, without pain being excited. In other cases also, the curve has appeared, before the existence of disease was apprehended; but in those which usually take place after infancy has passed, the child appears for several weeks, Mr. Brodie says, generally for six months, not to be in good health; is soon chilled if from the fire, play-things loose a portion of their relish, fatigue is soon excited, the spirits are uneven, the

temper irritable, application to learning is burdensome. In most cases, after a few months, a dull uneasy sensation is felt in the back, but not so as to prevent sleep; sometimes however the pain is acute, shooting in various directions through the back, and rendering the nights disturbed. When the neck is the part affected, the attack is always sudden, the suffering is always severe, no posture affords ease, the ligaments and parts adjacent to the seat of pain are much thickened, the head is in some instances drawn to one side, in others the chin rests upon the breast. The fulness when below the neck is often inconsiderable; and in no part of the Spine does it continue more than a few months.

Soon after the thickening of the ligaments, the vertebræ begin to project, and in proportion to the number of the affected vertebræ, and the extent of the caries, will be the time before the curvature ceases to increase. When the first joints shall have anchylosed, which usually takes place in twelve or eighteen months, the curva-

ture may go on advancing; but the strength of the system becomes greater, and the general health better. The vertebræ when pressed, or when hot water is applied with a sponge, in any state of the malady, do not evince much increased sensibility; but there is another form of the disease, which will be noticed hereafter, of which sensibility of touch is a characteristic mark.

That form of the curvature of which we are now treating, commonly commences in childhood and youth, but sometimes in infancy, and manhood; is sometimes the consequence of accident, but more frequently has its origin in the constitution; and is generally attended with more pain, though less of indisposition, than the lateral curvature. The limbs also retain more flesh, and the countenance wears an air of anxiety characteristic of the malady, and easily distinguished from the soft and tranquilized air of those, who suffer from a lateral curvature. The vertebræ having reached their utmost point of projection, and being anchylosed and forming

one mass, the disease terminates. The strength and spirits, which had been for some time improving, become sufficient for the business of life, and the constitution accommodating itself to existing circumstances, admits the attainment of old age.

The height lost, and the change of form in the sternum and ribs, is determined by the number and position of the affected vertebræ. In a case in which ten of the dorsal vertebræ had projected, five inches were lost in the stature.

When the body is inspected after death, the ligaments and cartilages are, in some cases, the only seat of the complaint; these being destroyed, the heads of the superior vertebræ, fall obliquely on the vertebræ below; causing a slight elevation of the Spinous processes. This early and natural termination of the disease, may frequently occur, and give credit to any plan of cure that may have been adopted. But it too generally happens, that as well as the ligaments

and cartilages, the bones also are in a state of caries; diminished and ragged like broken teeth.

For this state of disease and decay, machines, or the horizontal posture, have been proposed as effectual remedies. But are such means, competent to such an end? It is asked again, if competent, is their use desirable? To both of which I answer in the negative. Had mechanical means proved effectual, cabinets would have been stored with instances of their success; and diseased vertebræ manifesting the beneficial result of such means, would be exhibited by those who advocate their use. But there are no instances given of the heads of the vertebræ being broken and detached, or even empty spaces, where there had been cartilages, without at the same time the Spine being shortened; had the means made use of, preserved the figure of the Spine, by bearing off the incumbent weight, until the parts which remain sound had anchylosed, such an instance must have been witnessed. But the diseased vertebræ have never been pre-

vented from forming a curve, the means of prevention being inadequate to the end.

The weight of the head of an ordinary sized person, is fifteen pounds, that of the trunk, sixty; as much of this weight as is above the curvature, it is necessary should be suspended. Were this effected, and the weight transferred to the Hips, the pressure would scarcely be sustained without doing injury to the Pelvis, a consideration of much importance to females. But by what means is this superincumbent pressure to be raised from the curvature. The centre of gravity varies with the form of the Spine, and consequently, a machine must undergo repeated alterations, and still be inadequate, for if a greater force be applied to sustain the superincumbent weight than is equal to its pressure, the body will be extended and injured; if a less force be applied, pressure on the diseased part must be the consequence. Should the weight be partially removed, the Spine may sink more gradually than if left to itself, but it will not

sink less, and the time will be greater before the termination of the evil.

The same objection applies with equal force to the effects of the horizontal position. We will suppose a person to lay down when the ligaments that surround and give strength to the heads of the vertebræ are destroyed, the vertebræ themselves diseased and in a state of decay; the act of laying down, will not interrupt the progress of a disease which it does not profess to remove, and as the muscles of the back retain their force, and it is impossible in any position to prevent their occasionally being in action, they will necessarily so act on the vertebræ, as to draw them outward. So long as equal forces are under equal direction, no change of position is effected; but if the force on one side be withdrawn, the remaining force will then act in producing a change of position. It is thus with the Spine:---The ligaments which bound the vertebræ together and resisted the

strength of the muscles is now lost; consequently, the muscles when contracted, will draw back the detached vertebræ, and thus a curvature be formed. Could a machine be invented just to bear the weight incumbent on the curvature, or the muscles of the back entirely prevented from motion, the figure of the Spine might be preserved, but would this be desirable.

The Almighty Framer of our bodies, has furnished our System with no more bone than is requisite to resist the strength of the muscles; had less been given, they would have been broken by the force which the muscles exert in ordinary exercise. Instances are on record of the thigh-bone being snapped asunder by their strength; one part of our system is proportioned to another, nothing is in excess, nothing defective.

But it may be said, that if a number of the vertebræ be in a state of caries, through half

their extent, that this loss is compensated by the other half becoming one solid bone. Suppose ten of the vertebræ to be in this state, the newly deposited bone between the vertebræ, becomes the antagonist of the muscles, whose force on any limb, is more than equal to the strength of its bone, were that force so applied, as to act in one direction only. The muscles of the thigh we have seen, to be more than equal to the strength of its bone, under certain circumstances of action. Apply this fact to the Spine reduced to one half its size, but anchylosed; it would in this state, have to resist the same force, as when perfect. Suppose it able to do this, another evil presents itself; the sound vertebra immediately above, and projecting over those in a state of caries, having lost its support sinks, and must continue sinking until it reaches some point to rest upon. The adhesion of the sound, to the unsound bone, should there be such a disposition, would thus be prevented; and this point of connexion, exposed to injury from slight accidents. The Spine thus circumstanced, is a

column without a capital. The diseased vertebræ have indeed anchylosed, but their connection with those that are sound is nearly destroyed, except in what is derived from the muscles.

This state of danger is further increased by the pressure of the part superincumbent on the diseased vertebræ; the inclination of the edges of the sound vertebræ giving it an oblique direction, and thus forcing out the diseased column. Or should the union of the vertebræ be imperfect a sudden motion of the body might occasion a fracture.

The period required by the disease to pass through its stages, is as variable, as the curvature is to a greater or less degree extensive. Every year the curve is contracted at its base, and acquires a more conical form, until the disease terminates its courses, which in many instances is completed in five years. The increase of the conical form, is determined by the rate, at which the caries diminishes the heads of the

vertebræ, and gives them a wedge like shape. While this process is going on, the ossification is necessarily incomplete, and the danger to life would be imminent, were not the loss of substance in the Spine, compensated by the strength acquired by its becoming a curvature.

The force that draws the diseased vertebræ from their positions, is sufficient to break an imperfect adhesion, in the erect column. But as no such evil has ever occurred, from the two early discontinuance of a machine, or by an individual rising from a couch, with the vertebræ insufficiently united, or the Spine too much weakened by the extent of the caries, to bear the action of the muscles, it may be fairly inferred, that the object proposed by those measures, has not been obtained, or repeated cases similar to the following would occur.

"A man, who had been for some time using Mercury for a disease of the tibia, had for a long time complained of pain and stiffness when

he moved his head; on a sudden and violent turn of the head, he was seized with convulsions, and died in a few hours. When he was examined after death, I found the processus dentatus, fractured and detached from the body of the second vertebræ. It was carious throughout.*"

At the time the introductory remarks were written, it was not intended again to advert to the assigned causes of the malady, or to trace the various species of constitutional caries that affect the bones; but, for the sake of perspicuity, a few additional observations will be made.

Scrophula, the leading and generally supposed source of diseased vertebræ, is hereditary, the outward curvature, or hump-back is not hereditary.

Mrs. H. at the age of forty, in 1815, had a fall by which the Spine was injured. In a few months a curvature was observed to have com-

---

* Copeland on the Spine, &c. P. 94.

menced; and in two years after, six of the lumbar vertebræ had projected, and became every year more conical. It may be said that Scrophula which had hitherto been latent in the system, by this accident became active; but it has no known existence in her family, nor previously had suspicion attached to herself. Here then, is a case of which Scrophula cannot be considered as the origin; and similar cases are by no means uncommon.

Again, caries from Scrophula usually produces Hectic Fever, and subsequently death, if not prevented by amputation. It is possible, that a strong constitution under favourable circumstances, may bear up until a carious joint of a finger has run it course; but a prudent Surgeon would in such cases advise amputation, lest the constitution should be undermined, and the individual ultimately sink to the grave. If the decay of a joint of a finger exposes to such consequences, what must be the event if several vertebræ are diseased. A carious bone of a fin-

ger requires to be carefully and regularly dressed under the guidance of a skilful Surgeon. The matter collected in the day, must be removed in the evening, and that which is produced in the night, claims a similar attention in the morning, or gangrene may ensue. But the Spine is inaccessible, no hand can reach it, all that the diseased bone produces lodges in the midst of vital and delicate organs; but, although the disease moves on year after year, destroying as it advances, gangrene is never apprehended, and death seldom accrues. Another effect of Scrophulous caries is the production of purulent matter. This essential and invariable consequence, is unknown in caries of the Spine; a distinction at once conclusive, and characteristic. In some cases, which are probably distinct varieties of the disease, or when Scrophula attacks the vertebræ, for it cannot be contended that this part of our system is exempt from that malady, matter is formed, which finding its way between the muscles, ultimately becomes a Psoas or Lumbar abscess; and all the consequences of Scrophula follow.

Another peculiarity in a carious vertebræ, is the removal of the disease from the system, after the curvature is completed; no second attack is ever made, nor does the disease remove from one part to another: were it still lurking in the habit, its re-appearance, or the assumption of some other form would mark its existence; but like many diseases it may be violent, but is not permanent. Scrophula is never eradicated, but year after year creeps on destroying as it advances, and ultimately in many instances undermines the constitution. If we trace the progress of a Scrophulous habit we find, first a gland is attacked, then a ligament, then a bone; if we trace it still onward, we mark its termination in Hectic fever and death. Compare these circumstances with those that occur in a curvature of the vertebræ, and scarcely a point of resemblance is discoverable. The diseases cannot therefore be the same.

Necrosis, is another species of caries, but not of the nature of the disease which attacks

the vertebræ; it is characterized not so much by the death of a bone in whole, or in part, as by its entire re-production. Before the dead bone has lost its power of giving support to the system, a new deposition of ossious matter is formed around that which has perished, and supplies its place; thus encased the old bone crumbles away, discharging at the same time through several fistulous openings, purulent matter. Mr. Russel is of opinion that the disease might pass through its stages without the formation of pus, but he acknowledges that such a case has never been recorded. Necrosis is further distinguished from the vertebral caries by the deposition of ossious matter being equal to that which had been destroyed by caries, and by its deposition being on the exterior of the diseased part.

Another species of caries still remains and claims some attention, I allude to that by which the teeth are destroyed. This cannot be a modification of Necrosis, for the teeth are not in the whole or in part reproduced; new ones may ap-

pear, but caries when once commenced, ends in their destruction; nor will it not be contended that a Scrophulous habit is the occasion of carious teeth, they are distinct affections: yet this decay is not accidental, but arises from a disease proper to themselves. The teeth lose and regain their colour, and probably their texture, from variations in the health; which shews the liability of the bone to disease, and its power of recovering. Thus our system is subject to three distinct species of caries. To these may be added a fourth, that of the vertebræ. This is not characterised by the discharge of purulent matter, by the total reproduction of the diseased portion, or by the total death of the bone; but has many properties strictly its own, which as far as they are known will be noticed as we proceed.

CASE I.

Miss M. of Manchester, after having been several months weak and unhealthy, but without any marked or definite complaint, was suddenly seized with a pain in her neck, accompanied by a considerable thickening of the surrounding integuments. Her head could not be supported, but was reclined upon a pillow, and any attempt to change that position, excited most exquisite suffering. Various methods were used during some weeks, under the idea of its being a common stiff neck, the consequence of a cold. These having failed, and the pain and stiffness gradually increasing, I was desired to visit her, on 14 January, 1817, when I received the above account.

The pain of the neck was now most exquisite, and the swelling so considerable, that many of the Spinous processes of the vertebræ could not be distinguished by the finger; pain

was not excited by pressure. Some Leeches were directed to be immediately applied, and a sponge with hot water kept upon the part for an hour afterwards, by these means the swelling was somewhat lessened, a grain of Ext. Hyoscyami, which was afterwards increased to three, was given twice a day. On the 24th, the pain had become less exquisite on a change of position. February 4th, the bed afforded some relief, and the head could be borne erect for a short time, without being supported; and when continued two long, a hot sponge gave speedy relief, to the pain which had been thus excited, even before the head was again reclined on a pillow. March 1st, the head could be carried erect several successive hours, but the chin was directed towards the left shoulder; the swelling on both sides the vertebræ had disappeared. March 20th, the carriage of the head was improved, but the neck became stiff and painful towards night; for the relief of which, hot water was efficaciously used; in a month from this time, no appearance of the affection remained.

During the progress of this case, four Leeches were applied, four successive times. That the affection was of the Spine, I infer from the fulness which was on both sides of it, and which I consider as a diagnostic symptom; a neck rendered stiff from an affection of the muscles, is not swelled.

CASE II.

Joseph Coomb, aged eight years, in Dec. 1821, was taken ill, and confined to his bed several weeks; but the disorder was never ascertained. After a partial recovery of two or three months, he was in May, 1822, seized with a pain in his neck, attended by a fulness on both sides of the Spine; the head resting on the right shoulder, he remained in this state till July, when I saw him, and prescribed a grain of Ext. Hyoscyami, morning and evening. The beneficial influence was apparent in a week, and in a month he was perfectly restored.

CASE III.

Master L. under the care and tuition of Mr. Huthersall, of Ardwick, was placed under my care in 1815. Eight of the lumbar vertebræ had protruded, and formed a considerable curvature. The chest consequently became more prominent and round than natural. The Spine was not painful when pressed, but his countenance indicated the long continuance of bad health, which still existed. A grain of Ext. Hyoscyami, with three grains of Carbonat of Soda were given him night and morning. Four Leeches were twice applied to his back. A grain of Calomel was occasionally given, which acted as an aperient.

Under this treatment, his health soon began to improve, and his strength to increase. He became active, engaged in play with his schoolfellows, and gained considerably in height. Before the termination of a year the disease appeared to have left him; he gained flesh, the

curvature ceased to increase, and he was in every sense competent to be apprenticed, to acquire the knowledge of business.

CASE IV.

Joseph Turner, aged seven years, after some months of indisposition, during which he laid much on his face, the first and second dorsal vertebræ began to project; no pain had been felt in the part. When I saw him in December, 1822, two years from the commencement, the curvature was not extensive, but very angular. He then complained of pain shooting from his left shoulder to his breast, and affecting his respiration, no pain was excited by pressure on the Spine. I prescribed a grain of Ext. Hyoscyami, to be taken morning and evening. In a fortnight the pain left him, and his health improved.

Other cases might be added, but their histories and results, are so similar to those related, as to render it unnecessary.

OF THE

CURVATURE OF THE SPINE,

WITH LOSS OF MOTION

OF

THE LOWER EXTREMITIES.

AN affliction which renders life burdensome, claims and possesses much sympathy; such is the disease which we are about to notice; for to all the circumstances and evils mentioned in the last chapter, is to be added, the loss of the use of the lower extremities, for the recovering of this lost power remedies have been as abundantly presented, as they have been anxiously sought. Electricity, friction, the Bath waters, embrocations and blisters; have been fully tried, but have disappointed the hope that had been excited. To Mr. Pott, the world is indebted for the first ray

of light that beamed upon the subject. Before, all was conjecture and misapprension; but he demonstrated that palsy, and the loss of motion from a diseased Sphine, were distinct, unrelated maladies. This important fact, opened the way for interesting investigations; but the path has not been much troden. It is not palsy, and here our knowledge terminates.

Accident how-ever enabled Mr. Pott to render society some further benefit. An ulcer had formed on the back of a youth confined in consequence of the loss of the use of his limbs from a carious spine. Immediately after the formation of the ulcer, the limbs began to recover strength.* Mr. Pott imitated this process of nature, by the insertion of caustic issues near the curvature. But, before speaking of the remedies, it may be proper to give his description of the disease.

"When it attacks a child," says Mr. Pott, "who

* Potts Works, Vol. 3, p. 251.

is old enough to have walked properly, its awkward and improper manner of using its legs, is the circumstance which first excites attention, and the incapacity of using them at all, which very soon follows, fixes that attention, and alarms the friends. The account most frequently given is, that for sometime previous to the incapacity, the child has been observed to be languid, listless and very soon tired; that he was unwilling to move much, or briskly; that he had been observed frequently to trip and stumble, although no impediment lay in his way; that when he moved hastily or unguardedly, his legs would cross each other involuntarily, by which he was often and suddenly thrown down; that if he endeavoured to stand still, and upright, unsupported by another person, his knees would totter and bend under him, that he could not with any degree of precision or certainty, steadily direct either of his feet to any particular point, but that in attempting to do so, they would be suddenly and involuntarily brought across each other; that soon after this, he complained of frequent pains

and twitchings in his thigh, particularly when in bed, and an uneasy sensation at the pit of the stomach; that when he sat on a chair or stool, his legs were almost always found across each other, and drawn up under their seat; and that in a little time after these particulars had been observed, he totally lost the power of walking."

To this correct discription, it is as unnecessary as it is difficult, to add any thing important. In every case their will be some peculiarity, and shade of distinction; while the general character remains the same. The limbs not being under the general guidance of the will, although subject to strong spasmodic motion, must ever distinguish this affection from Palsy. Mr. Pott urges other facts to prove that the powerless unnerved Paralytic limb, has a different origin from the stiffened and useless one, which is connected with a caries of the vertebræ; but it is unnecessary to pursue the subject further.

The Spinal marrow is sometimes diseased, sometimes a portion of it is wanting. A certain state of the brain produces convulsions, or it occasions Palsy. But the disease of which we are treating stands alone, bearing in its character no resemblance to any other, and has its origin in a caries of the vertebræ; but in what way it is produced, or why it does not attack and deprive of motion, all whose Spines are carious, is yet unexplained. Mr. Pott observes, "that neither the degree, nor the extent of the curve, made any alteration in the nature or degree of the symptoms at first, nor for some time after their appearance."* In almost every town there are instances of one individnal being confined powerless to his bed, while another, under an apparently aggravated form of the same disease, has the undiminished use of his limbs. May we not look for this distinction in the more rapid, or slow progress of the caries. †Mr. Wilkinson observes, "That each vertebra

---

* Potts Works, vol. 3, p. 242.

† Essays Physiological, &c.

will allow of the motion of about one eighth of an inch, without compressing in the least the Spinal marrow."

The intervertebral substance between each joint, varies from three to five tenths of an inch in thickness; should this substance be rapidly destroyed from between two of the joints, the head of the higher vertebra, must in this case sink at its outer edge, near half an inch; which is certainly sufficient to compress the Spinal marrow. Mr. Copeland mentions a case, and gives an engraving which exemplifies this remark. Two intervertebral substances only were destroyed; occasioning a curvature scarcely perceptable while the Patient was living, but the power of locomotion was lost. Mr. Potts says, "there is no unnatural pressure made on the Spinal marrow." Mr. Copeland on the other hand observes, "that the diseased Spine, is to be considered as a complaint of the bone and ligament with respect to its cure; but most of its symptoms, are derived from a

disturbance of the functions of the nerves."* So defective is our knowledge of the nature and consequences of a carious Spine, that this question cannot be determined. In the want of distinct evidence, the analogy of nature is our safest guide; and that analogy is in favour of the opinion, that compression of the Spinal marrow is the cause of the loss of motion. A ligature drawn somewhat tight round a limb, occasions it to be numb and stiff; if the stricture becomes greater, volition is lost. Bearing this idea in mind, I go on to another branch of the subject, the methods of cure.

The first I notice is, the insertion of caustic issues on each side the Spine, as proposed and recommended by Mr. Pott. But he has not informed us in what way they act, so as to produce a beneficial result. When they are applied to diseases of the joints, a specific object is in view, the reducing of inflammation, and the prevention of

* Essays Physiological and Philosophical, p. 14.

the formation of Pus. But the latter in caries of the vertebræ, seldom takes place, and did inflamation exist, it would be detected by the various dissections that have taken place. But I am not aware that any such appearances have been recorded. It would likewise, in some cases spread to the surrounding parts, and occasion death. There may be a peculiarity in the malady which issues will relieve, but not as in cases of ordinary inflammation.*

Though issues have been so warmly recommended by Mr. Pott, they have not maintained their reputation; their application has been general in all diseases of the Spine, but their benefit extremely limited. Mr. Potts personal observation, justified his recommendation; but he probably confined his practice to certain cases, and to certain symptoms in those

---

* Mr. Brodie informs us, "that when ordinary inflammation attacks the Spine, it occasions the vertebræ to become black, but does not affect the firmness of their substance;" it can have therefore, no relation to the malady from which a curvature originates. p. 296.

cases; such as the loss of locomotion, and being successful, published what he expected, as well as what he saw. Dr. Camper and Mr. Baynton consider the use of issues as of doubtful, efficacy; and this is probably the general opinion. It is therefore the more to be lamented, that Mr. Pott has not published the precise form of the disease, in which he found issues so beneficial.

Another mode of cure was recommended by Mr. Baynton, sanctioned by many instances of successful treatment. I mean that, of the Patient laying down on a couch for a length of time. If the view I have taken of the cause of the loss of motion of the lower extremities, being from the more than ordinarily rapid distruction of the intervertebral substance, and the consequent sudden declension of the vertebræ, occasioning a compression of the Spinal marrow, be correct, there is much propriety and excellence in the plan proposed by Mr. Baynton. Laying on a couch takes off the weight of the body from the diseased part, and retards the declension of the

vertebræ; or when a curvature has commenced, and the lower limbs have lost their power, the composure and relief of a couch, enables the system to adapt itself to existing circumstances. And though no change may be made in the form of the Spine, yet such is the effort of the system to overcome obstacles, that as in cases where a considerable blood vessel is distroyed, the part is kept alive by the smaller ones, and in a little time recovers its full sensability and power: the same may be said of the nerves, if compressed. At first the effect is considerable, afterwards, life and power are gradually recovered. A white washer, learning his business, often complains of numbness of his hands, which being long held above his head, compress the nerves as they pass to the arm: but after some time, the numbness leaves him, and he pursues his avocation with the same ease, as if the arms were not raised above their natural elevation; so easily does the system overcome obstacles gradually introduced.

The loss of the power of locomotion, from a curvature of the Spine, is a formidable malady. Many who are afflicted, die. Some, confined to their chair or their couch an indifinite time, gradually recover, and are restored to activity and usefulness by the unaided efforts of the constitution. Of this number I presume were those, on whom the Bath waters have had the reputation of effecting a cure: what proportion of those afflicted would spontaniously recover, or what number would speedily sink under the complaint, I have not the means of knowing; and therefore, cannot fully appreciate the value of the remedies so much recommended.

But in a disease so often fatal, after a few years of helplessness and misery, it is important to know that a remedy has been discovered; and that the energies of nature may be assisted, where unaided they would fail.

To Mr. Pott, and Mr. Baynton, the public

greatly indebted for pointing out remedies so much within command for a disease so formidable. By the patients treated by these gentlemen, the most indubitable proof of the efficiency of the means employed were manifested; and the expectation thus raised, has not been disappointed. But much remains to be known before each plan can, with suitable discrimination, be applied to its proper object. Neither Mr. Pott, nor Mr. Baynton, appear to have understood the principles by which the cures they witnessed were effected; which led them into error, for having removed a fatal symptom, they concluded that they had removed the disease. The loss of motion is but an occasional consequence of an outward curvature of the Spine. But those gentlemen have confounded the cause, with the effect; and published to the world as a cure for a curvature of the Spine, that which only removes one of its consequences. It is unnecessary to say, that when too much is promised, a failure in part, brings discredit on the whole; it is thus that neither of the methods

those gentlemen had the happiness to propose, maintain the confidence they had acquired, but when the observations of practitioners shall have become more particular, the application of remedies will be more specific; and each beneficial method, will be properly applied.

A disease, the nature of which has been so little investigated, must depend on fortuitous circumstances for any method of alleviation. The benefit derived from issues was an accidental discovery, and confinement to the Horizontal posture, cannot claim a higher origin. Invention has indeed been racked to increase the means of relief; but all have failed, and as the principles on which they were conducted were erroneous, discredit and sometimes ridicule, have fallen on the projectors. Dr. Andry, a French Physician, in a work entitled Orthopedia, recommends the placing of the child's back in a large loaf quite hot from the oven, the crust having been removed, there to remain till the loaf cools; this process is to be repeated nine succes-

sive mornings. Dr. Pierce, with much confidence recommends the use of Bath-water. Others supposing the Spine to be dislocated, invented the swing to suspend the child, that the weight of the body might reduce the dislocation. The Screw Chair, is another plan adapted to the same purpose.

As soon as the Science of Chemistry had in some measure made us acquainted with the elements of bodies, the nature of this disease was supposed to be detected, and to have its origin in a deficiency of the constituent parts of bone; as a remedy Phosphoric Acid was advised. By others, especially Mons Bonhomme, a new acid was supposed to have been formed in the system, of a similar nature to the oxalic in softening of bone. To counteract its effects, the topical application of an alkaline lotion, and the internal use of Phosphat of Lime, were expected to be efficacious; but the want of success occasioned the abandonment of their use.

The methods now employed, and which have the reputation of being partially successful are machines, some of which do credit to the skill and science of the inventor; the insertion of caustic issues near the affected part; and laying on a couch several successive months. The two last, claim attention from the authority by which they are recommended, but it is obvious that their application is entirely limited to the consequences of the disease. Is then this affection of a nature to admit of no remedy? are its consequences alone the object of our solicitude and care? The following reasons are advanced to shew that as a disease, caries of the vertebræ is an object of medical attention.

1. Because its duration is limited. No incurvation goes on increasing for more than a limited period; in ten, frequently in five years, the disease has run its course.

2. It is variable in its extent, sometimes destroying the intervertebral substance of two or

threejoints, in other instances the bodies of the vertebræ only suffer; but commonly both are diseased, but to an indefinite extent, from a small abrasure, to the entire destruction of the parts. The disease therefore comes to a termination at every step of its progress.

3. A caries having spontaniously stopped before the part affected was destroyed, although no exfoliation had taken place, is an evidence that the disease did not originate and is not inherent in the bone, in the same manner that caries is inherent in a tooth, or necrosis in a limb.

4. The unhealthy state of the system which commonly precedes an affection of the Spine, and the improvement of the health, while many vertebræ are in a state of caries, lead to the conclusion, that some constitutional disease, is the cause of the caries of the vertebræ.

5. When the disease has run its course, it never returns, at least, no instance of a second attack has ever come within my knowledge. We say of the Rickets, that a certain predisposing state of the system, occasions a softening of the bones, which if left to itself, continues for a few years, and then is removed by the energies of the constitution; after which, the bones recover their firmness, but retain their deformity ;the same remark is applicable to carious vertebræ.

To a Ricketed child, more certainly is due than to place him in a horizontal position, or to confine his limbs by machines. The health of the child claims attention. It is not so much the limbs, as the constitution that requires care; restore the health, and the disease of the bones is subdued. The evidence of an existing predisposing disease as the cause of the carious state of the Spine, is not less apparent than in Rickets, and certainly claims equal and similar attention. The opportunities I

have had of gaining a correct knowledge of the Diagnostic symptoms of the approach of carious vertebræ, and of the most efficacious means of opposing them, have been too limited, to pronounce them fully established; but the public are entitled to any remark that may lead to the relief of the afflicted.

If with a sense of weariness, there be a disposition to move the legs, and place them in various positions, accompanied by an uneasy sensation in the stomach and bowels, and a shortness of breath on ascending a hill, the state of the Spine should excite attention; but, if to these symptoms be added, a disposition to lay on the face, a countenance pale and gloomy, and a somewhat stiff and measured gait, an unequivocal evidence of the Spine being carious, will soon become apparent.

In the early stage of the disease, the same means that are employed to restore a Ricketed child to health, should be used, and all the

vigour possible imparted to the system, by a diet consisting much of animal food, well seasoned with salt; at the same time correcting by medicine, any irregularities in the discharge of the functions of the body. Should the early indications of the disease escape due attention, or be misunderstood, and the commencement of pain in the back, show that caries is somewhat advanced; direct attention ought to be paid to the circumstance. If the vertebræ be not painful when pressed, the application of heat will be very grateful; if pain be excited by pressure, a few Leeches repeated as often as the pain increases, afford considerable relief. I have seldom thought it necessary to apply more than four at a time. Measures thus feeble, can only be beneficial on the supposition that the pain is chiefly occasioned by the swelling of the soft parts that surround the bone; and this is further supported by the patient not suffering acute pain when the back is bent, which must be the case, if the bone was in a state of acute inflammation

With a view of staying the progress of the disease, I have given Ext. of Hyoscyami, with sufficient advantage, to induce me to recommend its use.

When the vertebræ of the neck are the seat of the disease, the affection is manifested before caries has commenced, by the head being inclined to one side; in such cases, the Ext. Hyoscyami has in every instance in which it has been administered, proved beneficial, and in most effected a cure.

OF THE

HIP JOINT DISEASE.

THIS Disease, so often and so accurately described in all its circumstances and in every stage of its long and painful course, to its termination in death or in positive lameness, cannot be mistaken or confounded with any other. The shrinking of the thigh; the pain most severe in the knee; the fulness of the muscles behind the hip; but particularly the increased length of the affected limb, sufficiently characterise this complaint. But although it is thus easily to be known, its nature is obscure. Those who have written best on the subject, treat of it as a dis-

ease sui generis. They say it has not necessarily a scrofulous origin, and is therefore not analogous to a white swelling, Mr. Brodie indeed suggests that it may have that character, but the presence of purulent matter is essential to a white swelling, though not to the disease of the Hip Joint. If it bears no analogy to, and has no sameness with, these diseases, may it not originate in a similar affection of the system as the outward curvature of the Spine. The general features of resemblance are strong, except in the extension of the limb, for which it is difficult to assign an adequate cause, or to find a parallel in nature, unless it be in the increased length occasioned by death.

Many writers unable to account for this affection of the limb, have supposed, it to be occasioned by certain positions of the body, giving to the limb the appearance only, of being longer than the other. But this is not the fact, for when the greatest caution has been used, and the most accurate measurement taken, one limb

has exceeded the other in some instances four, in others three, but in the greatest number two inches. This difference in length, under such circumstances, is too great to leave the fact doubtful. But this is not the only peculiarity of the malady. For after remaining in this state of elongation several months, it is retracted; not to return to its former length, and there to remain, but after it has reached that point, it still continues to retract, till it becomes several inches shorter than it was naturally, or than the loss of substance by caries accounts for. The most distressing lameness, and commonly an incapacity to take horse exercise, is the consequence of this retraction.

Whether a similar extention attends the outward curvature of the Spine, it is difficult to ascertain, because the extension being in the back, the limbs must consequently be of equal length; but the parents commonly remark that the affliction commenced during a period of rapid growth, and that the subsequent diminution of the stature was

greater than the curvature would account for. Till noticed by others, the length of the limb is seldom perceived by the individual. No sense of dislocation is felt, nor any great degree of pain, during the first stage of the disease: but the limb is thrown out further from the body than the other, because of its length.

During the time the limb is extended, the joint remains in the socket; but when the disease has existed some months, and the ligaments and a portion of the bone have been destroyed, all that remains of the head of the thigh bone is drawn from the socket; I say drawn, because it does not appear to have slipped, but to have been forced out in a manner unknown in any other disease, except in caries of the vertebræ; and here the resemblance appears to identify the diseases.

When a thigh bone is dislocated, it remains in the situation into which the violence that had been offered, has forced it; and a Spine, rendered carious from the pressure of an anurismal sack, or

a tumor, does not take the character of the outward curvature; the vertebræ do not project, nor is the caries known till after death. A dislocated thigh-bone does not acquire the character of the Hip Joint disease; nor does a simple caries of the Spine occasion an outward curvature, some peculiar and specific disease gives the character.

But the influence, which after removing a thigh bone from its socket still acts upon it, may be the same with that which guides a diseased Spine into a new position of safety and strength, in both cases, the attachments which bound the bones in their original positions, have been destroyed, and other laws seem to controul them; such as no other species of caries, or a dislocation, or a fracture are influenced by. No broken or dislocated bone, ever assumes unaided, a new position, and becomes useful. The one must be set, and the other reduced, before a hope is even entertained of the possibility of their lost power being recovered, except very partially. But in the cases here referred to, new positions

are assumed without surgical aid; and bones in a state of brokenness and decay, throw off their disease, and assure positions the most favourable to their future stability and usefulness.

Another, and a most unequivocal point of resemblance, is the destruction of the ligaments and bone without active inflamation, and without the formation of pus. Mr. Ford had an opportunity of examining the hips of two boys, who died in the early stage of this disease, which confirms this observation.

"Thomas Welch, a boy ten years of age, of a fair complexion, brown hair, born of healthy parents, received a blow on his groin, from a cricket ball, lameness ensued, but was not very apparen till eight months after the accident, when the nature of the complaint was indisputable.

A short time after, he died of a fever. On examination, the limb was found still elongated. In the Hip Joint, there was a tea spoonful of matter,

the head of the thigh bone was a little inflamed, the capsular ligament rather thickened, the ligamentum teres united in its natural way with the acetabulum: the cartilage lining the cotyloid cavity croded in one place, with a small aperture, through which a probe might be passed, under neath the cartilage, unto the internal surface of the os pubes, of the one side, and on the other, into the os ischii; the opposite or external part of the os innominatum, showing more apparent disease than the cotyloid cavity.

"Some time before, I had examined by dissection, another disease of the Hip Joint, which had not proceeded to any external suppuration; but not having preserved the morbid parts, I can only say, that the disease was in this subject further advanced, that the limb was beginning to shorten, and to be contracted forward, that the patient who was a boy at school, being thrown over a form, was taken home in great pain, and died in a few days after, with fever and convulsions."

"On examination of the joint after death, there was no appearance of inflammation, no tension or swelling externally, but the cotyloid cavity was thoroughly carious, the cartilages eroded, and the head and part of the neck of the thigh bone crumbled away."*

In the first of these cases there was a little matter, and some inflammation; but the joint always contains a portion of synovia, which in a diseased state might be called matter. The inflammation on the head of the thigh bone, might have been from pressure, previous to death. In both cases, the quantity and extent are too limited to be part of the disease, and may be called accidental; for there was no general inflammation, no general secretion of matter, notwithstanding the great extent of the caries. The other case requires no comment. After the thigh bone has been drawn from what remains of its socket, it is not, as has been before remarked, a loose

* Ford on the Hip Joint, P. 25.

extraneous substance lodged amongst the muscles, like a dislocated joint, but, is still, in some way acted upon, and drawn upwards, forcing a passage through the muscles, which become inflamed, and discharge matter in considerable quantities. But, during the period that the ligaments and bone are in a progress of decay, no discharge happens. The bone, having been drawn upwards in a way difficult of explanation, comes into contact with the superior part of the pelvis, where it remains stationary; and to which it ultimately becomes so firmly attached, as to be able to sustain the weight of the body. A carious and ragged bone, forming an anchylosis, is unknown without exfoliation, except in the Hip Joint disease, and in that which affects the vertebræ. Another point of resemblance is, that the ligaments and bones, in both cases, are the seat of the disease.

Neither the intervertebral cartilages, nor the synovial membrane, necessarily participate in the diseases proper to the vertebræ, and the

Thigh Bone, or their ligaments; a circumstance which should be borne in mind, for the connection of the cartilages and synovial membrane, with the joints, do not confound or assimilate their diseases; each part has diseases proper to itself. The caries which destroys portions of the ligaments and bone, is peculiar in its nature, and distinct from every other species of caries; being limited in its duration, in its extent, and in the facility with which bones in a state of disease unite, The Thigh Bone and the Spine, are carious only for a certain period; during which the loss of substance is limited to an inch or two of the Thigh Bone, and a part of the heads of some of the vertebræ; why the disease stops in its progress, or why it ever commences, are secrets as yet hidden from us. The other peculiarity, is the facility with which bones, during the existence of disease, anchylose. Mr. Ford has given an illustration, in Plate 4, affixed to his work on the Hip Joint, &c. in which considerable portions of bone, separated by caries from the pelvis, had fallen upon the Thigh Bone,

also denuded and broken by caries, and had formed a firm and permanent anchylosis. Caries signifies rottenness, and supposes death. Were such the nature and consequence of the Hip Joint disease, an anchylosis could not be formed, because an anchylosis supposes organization and life. The same fact applies to the vertebræ, for when brought into contact by caries, an union speedily follows, and strength is given to the weakened part. Mr. Radford has in his collection, the whole of the vertebræ of the neck anchylosed ;* an effect that must speedily have followed the commencement of the disease, or death would have ensued ; for after the pain had ceased, an attempt to recover the use of the neck, must have led to destructive consequences, if the vertebræ had been detached from each other. So great a sameness of operation, shews an identity of character. The capacity to organize new bone, in the very seat of caries, gives the disease more the nature of an ulcer, than a malady originating

* See Plate 2.

in a defect of the part. A principle of disease is not inherent, where its influence is resisted, and the power of partial reproduction in active operation. An ulcer commonly arises from a morbid state of the system; when health is restored, the ulcer heals. Our ignorance of the subject, prevents as much being stated of the termination of the Hip Joint disease; and of caries of the vertebræ; but thus far may be asserted, that a new action arising in the system, stops the progress of caries in the Thigh Bone, and the vertebræ, and heals the part that had been diseased. At some future time, the art of medicine may be able to imitate, or to excite this effort of the system to throw off the disease; indeed, all the circumstances attendant upon it, excite the expectation that a remedy will ultimately be discovered. Another, and more important point of resemblance, is the relief which in both cases is obtained from the same medicines. When night after night has been sleepless from pain, the Ext. Hyoscyami has lessened the suffering, and procured repose; and in recent, but

well marked, and unequivocal cases, the disease has been arrested, and health and soundness restored.

CASE V.

Ann Swan, aged ten years, complained of pain of the right knee, which at its first commencement was slight, but had increased so much, as to confine her to the house. On a careful examination of the limb, it was found to be three inches longer than the other, when the Hips were placed parallel to each other, and every care taken to prevent deception, the right thigh was smaller than the left, and the nates on that side was considerably swelled. The Ext. Hyoscyami was given, in various doses, from one to three grains, morning and evening. The pain in a few days abated, and in two months entirely ceased; in four months the legs became of equal length, and in twelve, strength was fully restored. In the progress of the cure, two blisters, and twenty-four leeches, were applied at four times.

CASE VI.

Mr. P. aged thirty, in November, 1814, perceived the left leg to be rather weaker than the other, with a slight pain after exercise. In January, the pain and weakness had increased so much, as to confine him to the house, and principally to the horizontal posture. The pain was most constant in the knee, but was felt in the hip and in the heel. The limb was evidently elongated, but no accurate measurement was taken. The Thigh Bone appeared to be somewhat protruded from the socket, while the flesh immediately below was considerably swelled. The Ext. Hyoscyami was given, with decided benefit. Twelve leeches, were five times applied, and four blisters. An aperient draught was occasionally taken. The cure was progressive, and ultimately complete. When the swelling below the Hip had subsided, and the limb had resumed its natural position, a slight course of mercury was given. At Midsummer my patient returned to his business, with the full use of his limbs.

CASE VII.

M. G. about five years old, in February, 1819, had a considerable fulness of the nates of the right side, with sensible fluctuations. The limb which had been elongated, was beginning to retract; the knee was bent; the pain was so excessive, that very little sleep was obtained. Ext. Hyoscyami was given, with marked advantage. The nights became more tranquil, and the sleep of much longer duration. The disease ran its course, and ended in lameness.

OF THE

LATERAL CURVATURE.

THE Lateral Curvature of the Spine, or that form of the disease which occasions a thickness of one shoulder, and a protrusion of the opposite hip, is of such frequent occurrence, is so destructive of the natural beauty and symmetry of the figure, and is so constantly attended by indisposition and debility, as to demand particular attention.

No Nation is exempt, but in England this affection is more common than in other countries, and more so among the affluent than the poor. Foreigners are struck with its frequency in our

best educated families. It is true they sometimes mistake a modest and diffident deportment, the stoop of weakness or sensibility, for a defect in the form, but independant of every sentimental or ungraceful attitude, which self command would correct, there are a multitude of cases on which, the utmost attention would be unavailing. Habit may be overcome by means which will not conquer disease, and it is to disease that I attribute every inelegance of figure commencing in the Spine, from a thickened shoulder, to absolute crookedness.

Before this opinion is attempted to be established as a fact, it may be proper to notice the general sentiments of Medical Practitioners on the subject. By some of these, the outward curvature is associated with the lateral, but their entire dis-similarity, cannot be too forcibly pointed out, or too constantly borne in mind, when treating of the subject with a view to its relief.

The Lateral Curvature is never the effect of accident, is not uniform in its progress, and never commences in infancy. The vertebræ are never carious, purulent matter is never formed, the ligaments are never thickened, and death never ensues as an immediate consequence. Diseases that neither commence, nor advance, nor terminate in the same manner, can have no identity.

Another cause assigned by authors for the Lateral Curvature, is the rickets; here also, it is difficult to trace a resemblance. The rickets is a disease of the bone, the Lateral Curvature is not a disease of the bone; in one case the texture is porous and soft, in the other it is in a natural state.

Another alledged cause is, muscular debility; this opinion is advocated in the recent publication on the subject, and is the theory of the day. The effects of muscular debility cannot escape notice, they are seen in the infirm, in

the aged, and the weak; but in them it does not produce a Curvature of the Spine. The body may be bent, the shoulders become round, a staff may be required, but the attitude thus occasioned is not that of an incurvated Spine. If debility be the cause, why is it local, why are the muscles attached to the Spine alone affected? are they paralized, or is the debility of a specific nature? if so, it is a disease, or by what other means is a local debility produced. The Spine is not drawn from its centre by relaxed and weakened muscles, it is constituted sufficiently strong to sustain the weight and motion of the head, and the action of the muscles, and is not in itself disposed to a change of form. If it be not one office of the muscles to keep the Spine in its position; which without their effort would diverge, it is difficult to comprehend in what other way a weakness of the muscles can occasion a Curvature of the Spine.

James Brintnal, aged twenty-eight, at four years old dislocated his Collar Bone, which was

never reduced; the left shoulder, is two inches higher than the right, and his head carried on that side; he appears much deformed, and the muscles of the back must have been greatly weakened from the change of the line of their motion, and from their want of use; but the Spine is not curved.

T. S., aged twelve years, Deaf and Dumb, probably an idiot; laid several months in a bent position; when at length he attempted to stand erect, his Spine was much curved, but in a few weeks the energies of nature restored the form, muscular debility was induced, but did not terminate in a permanent curvature.

In the view I take of the subject, a diseased state of the intervertebral cartilages, is the occasion of the Lateral Curvature.

This substance, which occupies a space of from one third, to half an inch, between each of the joints of the dorsal, and lumbar vertebræ,

is peculiarly organized, so as to yield to the motion of the Spine, while it is uninjured by its pressure. It is a cushion on which the vertebræ act, it is recruited by rest, and diminished by exercise. According to Mr. Wilson, the stature of an adult, is diminished rather more than a quarter of an inch by the impression of the cartilages, from the weight thrown upon them during the day.* The Rev. Mr. Warre, and Mr. Beckett, who made many experiments to ascertain the precise sum of the influence of the weight of the body on the cartilages, during the day, found the difference between the height of the body, in the morning and evening, to be nearly an inch.† These facts are sufficient to show, the important office the cartilages sustain in the system; and are they incapable of disease; if not, what are their diseases? Mr. Brodie has discovered in the centre of some cartilages that came under his notice, a dark spot, which proba-

* Wilson's observations on the Spine, P. 3.

† Philosophical Transactions, Vol. 33, P. 87.

bly preceded the destruction of the parts. The fact is valuable, but is this the only disease to which they are subject. On their surface is a fluid secreted, small in quantity, but sufficient for the purpose of lubricating the joint; they are consequently liable to the diseases of secreting organs, to an increased or a diminished action, to an enlarged or diminished size.

The diseases of any part of the system, relate to the offices of the part. If the bones are soft, their strength is diminished; if the capsules of the joints are rigid, their motion is impeded; and by inference, if the intervertebral cartilages are enlarged, or rendered less flexible, the freedom of action in the Spine must be decreased.

Another inference that the cartilages are frequently the seat of disease, may be deduced from the fact, that, when an incurvation of the Spine takes place, pain is felt in one of the shoulders, but on inspecting the part, no disease is discoverable in the ligaments, in the bones,

or the muscles. The mind is therefore directed to the cartilages.

This substance, even in a state of disease is not endowed with great sensibility; for in the outward curvature it passes through every stage to absolute dissolution, without exciting direct attention, and in the lateral curvature, pain is referred to some part remote from the cartilages, and is occasioned by their extension, rather than by their sensibility.

It is a law of our economy, that pain without inflammation may be felt in a part remote from its origin; hence a disordered stomach occasions the head ach, a disease in the Hip joint, a pain in the knee, and a distended cartilage a pain in the shoulder; indeed distention occurs so frequently in cases of the lateral curvature, as to excite a belief that it not only is the cause of the pain of the shoulder, but of the curvature itself. In every instance this circumstance cannot be demonstrated, but notwithstanding it may have

existed, and Mr. Wilson says, "I have frequently seen the inter-vertebral substance thickened, and with such marks of vascularity, that I cannot doubt of ulceration occasionally taking place in them."

Mr. Jeffs, measured a cartilage which was one-tenth of an inch thicker than the one above or below.

Mr. Peter Barrow has favoured me with the following case.

"Jan. 9th, 1819, I visited Eliza Illingworth, aged nine years, who died a few hours after of inflamation of the chest. For more than eighteen months, this little girl, had been the subject of a curvature of the Spine, which extended to all the Dorsal vertebræ; the curvature was on the left side, and occasioned great deformity. No treatment had been had recourse to.

On examination after death, the ligaments of

the Dorsal part of the Spine, were slightly affected, but the intervertebral substances were greatly diseased, at some parts, particularly at the convexity, being red, and thickened; and at other parts, being converted into a pale jelly like substance, throughout they had lost their elastic cartilagenous nature."

Dried preparations are more doubtful evidence, but in some of these, the size of the cartilages is greater than is met with in spines not curved, or than can be accounted for on any other principle than that, of being occasioned by disease.

From direct evidence, we descend to analogy, which renders essential aid, and supports in a powerful manner, the opinion which has been advanced.

It is well understood, that the office of the Synovia is similar to that of the cartilages in giving freedom to the motion of the joints by preventing the bones coming in contact with, and play-

ing on each other. When this secretion is in excess, a circumstance not uncommon, an uneasiness is excited, similar to that felt in the shoulder during the formation of the lateral curvature.

This excessive secretion is common to every joint, but most so to the ancles. Which under its influence become full and elastic and as their motion is stiff and constrained, continued pressure upon them excites pain, and causes the foot to be turned so that the pressure is made on one side; thus, the ancle is forced outward, and appears as if dislocated. Were the leg like the spine constituted of many joints, it requires no stretch of imagination to perceive in what way a curvature might be formed; the pressure that protruded one joint, is capable of protruding several. On an excessive secretion taking place in the shoulder joint, distortion is never the consequence because that joint sustains no weight; it being the pressure, not the disease, that occasions the curvature.

An evidence that the distortion of the ancle is a voluntary art, and not a necessary consequence of disease, is furnished by those joints that do not support the weight of the body. It is of the nature of Gout and Rheumatism to distort but not of an enlarged cartilage; nor is it contended that a fulness of the cartilages inevitably produces a curvature of the Spine, but as in the case of the ancle, the curvature is occasioned by an effort to obtain ease.

Miss T. received a contusion on the left arm, after some weeks the shoulder became painful, and the joint was evidently distended with Synovia; from her own represention and wish, the means commonly employed to remove the effects of a blow were used, but without effect: the pain increasing became at length so considerable, as to require the arm to be suspended in a sling.

At the end of twelve months the arm still remained useless, when the other arm became affected in a similar manner, and made the nature

of the case unequivocal. In a few weeks the excess of Synovia was absorbed and the arms restored to their usefulness, without any deviation from their natural form.

Connecting together the effects that arise from the Synovia being in excess, and the liability that there is in the cartilages to become enlarged, the cause of the lateral curvature looses much of its obscurity.

In the view which I take of the subject, a specific disease distends the cartilages, which the energies of the constitution frequently removes, and the figure suffers only in degree; in other, and more advanced cases, the distention is so considerable as to occasion an uneasy sensation near the part, the effort to relieve which causes the curvature. It is not that the ligaments, or the bones, or the muscles, are diseased; or that the disease of the cartilages is of itself the cause; but the muscles being made to act par-

tially on the spine while the cartilages are in this state, the same effect follows as when pressure is applied obliquely to the ancle.

If an incurvated spine be examined, an extreme case of which is represented in Fig 1, the same idea will be established. No divided ligaments, no broken or diseased bone, no empty space where there had been cartilage is presented; but a surface perfect in its covering, its texture, and appearance. The cartilages and the vertebræ are indeed compressed on the convex side, so as to acquire the form of a wedge; but this is a consequence, not a cause, the figure thus acquired, being the effect of pressure, not of disease. Nothing therefore that indicates the cause of the curvature appears, for neither an enlargement of the cartilages, nor an excess of Synovia, necesarily occasions it. Some cause without the spine bends it, and that cause is muscular action excited by the state of the cartilages. Curvatures that are semi-circular, nearly maintain the natural shape of the vertebræ and cartilages; demonstra-

ting that the wedge like form does not exist previous to the curvature, but is a consequence of it.

In a review of the origin and progress of the malady, connected with the appearance after death, it is evident that disease, not debility originates the lateral curvature. It is in vain therefore to attempt to remove the effect, while the cause still exists; to rely on mechanical where medical treatment is required.

But other evidence of the existence of disease yet remains; a curvature is commonly preceeded by indisposition, more or less considerable, but without a definite character. After months or years passed in this state, its nature becomes manifest, by the enlargement of one of the shoulders; after which the indisposition diminishes, it being a termination of the attack; and in a few weeks, the shoulder becomes less, and the health improves; but the original shape is not fully restored, and those who suffer from this one attack, although the Spine be not in-

curvated, have lost something of the elegance of their figure. But commonly another attack follows, in the ensuing Spring, or it may be at the distance of years, when the flesh again wastes, the countenance becomes pale, the shoulder once more rapidly increases, but the indisposition is unwillingly acknowledged, because it is with difficulty described. All this may be completed in a few weeks, or even days, for the enlargement is not gradual, but sudden, I have seen a decided increase in a single day. Commonly on the third attack the Spine looses its natural position, and becomes slightly curved.

Between the attacks the efforts of the individual assists those of nature to recover the loss of figure by calling the muscles into exercise which hold up the head, and draw back the shoulders; but the recovery is incompleat, Mr. Ward observes, "That the approaches of the curvatu e are for a long time scarcely perceptable; but on the occurrence of any particular disturbance of the constitution, such as a febrile indisposition, the

spine, in the course of one, two, or three months, is found to yield in a greater degree than it had previously done, during as many years."*

This is an accurate description of an attack of the spinal disease, and is applicable to every attack which may occur in the life of an individual. The febrile affection, generally amounting only to a sense of lassitude, is not the cause of the curvature, for fever does not affect the spine, but is consequent on the existing state of the cartilages. Ask an individual advanced in life, whose spine is incurvated, the history of the malady, and the information will be, that the health had never been robust, that repeatedly, without any known cause, there had been an evident loss of flesh, with a sickly countenance, but without much personal indisposition; at other times the indisposition had been more marked. And that at these periods the curvature always increased, and although never in full health, yet there were

* Wards Practical Observations, p. 35.

seasons when there was an increase of spirits, and strength, during which, some progress was made in overcoming the curvature, but again it increased. If the enquiry be extended to others, the result will be, that some had suffered from only one attack; others, from two; others, from several. Each of which, permanently added to the loss of shape.

Perhaps the curvature is never uniformly progressive, but is at periods stationary, and then as rapidly advances; it is therefore not mechanical. Neither the weight of the head, nor a relaxation of the muscles, can give it origin; because, their influence being uniform, and constant, so must also be their effects, and it is only by admitting the existence of a disease, that the Phenomena can be accounted for.

Another proof presents itself, the affection is hereditary. A solitary instance is of rare occurrence. One generation looks back upon another, and traces its existence. Frequently, an aunt

laments the appearance of the affection in her niece, from her own experience of its consequences. Were it not a specific disease, it might like the outward curvature, be accidental and solitary. One individual only, of a family might be its victim; but it spreads its influence through the blood, and like the Gout, though it slumbers, it has not ceased. Every stage, from the elevated shoulder, to positive crookedness, may be found in one generation; in the next it may not appear, but returns in the third.

It almost exclusively attacks females; and this is another proof of its being a disease. Debility, muscular weakness, scrofula, the affections of childhood and youth, are common to both sexes; but the curvatures of the spine are exclusive, the lateral, being almost confined to females, the outward, to males.

Should it be contended that the lateral curvature is not occasioned by a mere swelling of the cartilages, but by some other form of disease, the

reasoning is still correct which ranks machines, the horizontal posture, and friction as in appropriate remedies; they are not useless, but auxiliary only. The disease must first be subdued, and if then, the energies of nature are inadequate to the restoration of the form, great assistance may be derived from their use; but the cause must be kept in view, in the application of the remedy.

In studying the nature of a malady, it is of the first importance to learn, what relation it bears to any with which we are well acquainted. Nothing stands alone in nature, even diseases have their genera, and species. The diseases of the cartilages, and of the bronchial gland most effect females; both commence in youth, and are not excited, or retarded by other diseases. This seeming relation, led to the use of the same means of cure, and with the most marked, and beneficial result, so as to justify the expectation that at no distant period the lateral curvature

will, like the scars of the small pox, be a reproach to the parents, rather than a necessary evil.

But, it being of essential importance that the approach of this afflictive malady should be well understood, before the cure be treated of, it may be proper to trace the disease through its various stages; for, in order that the evil may be overcome, it is necessary it should be familiarly known.

The first attack is commonly made before the age of fifteen, its approaches are so low, often insidious, and unobserved; exciting at its outset scarcely any feeling of indisposition, at least none are acknowledged, but such as are incident to growth, yet, the individual looses flesh, stoops, is disspirited, inactive, pale; the appetite is impaired, retirement from observation is sought, the deportment and habits are changed, the manners are become careless, ungraceful, and spiritless, the temper is irritable, the apprehension dull, instruction is imparted with diffi-

culty, and a spirit of self government, and laudable ambition so necessary in forming a character, attained in a very limited measure. If attention be paid to the form of the person, the cause is ascertained to be an incipient curvature of the spine.

The shoulder blades are elevated, and prominent, so that the spine appears sunk between them, above them the flesh is considerably increased, and thickened, and is more than naturally firm, and elastic. I beg particularly to call attention to this circumstance, as it is characteristic of the disease. In every one in whom I have noticed this appearance, although it may almost spontaneously disappear for a season, it has returned; and a curvature, unless counteracted by medicine has always been the consequence. I repeat the remark, when the shoulder blades are somewhat elevated, and there is a greater quantity of flesh between them and the neck than corresponds with the flesh on the chest, a curvature if not prevented is inevitable. At this period, a short

course of medicine replaces the shoulders in their proper position, and if future attacks, should be made, and be treated in a similar manner, the natural symmetry, and proportion of the figure, will be preserved. Remove the cause by destroying the disease, and nature will restore the figure.

Round, and full shoulders in adults, are a mark of a full and ethoric habit, by reducing which, the roundness is destroyed. The circumstances, and the mode of treatment, in this case differ from the fulness occasioned by an approaching curvature; but both illustrate the fact, that the form of the shoulders depends on the state of the system. Were it necessary, I might name various diseases that influence the form of the shoulders, particularly consumption and asthma but it is enough to have called the attention to what relates to the subject before us, the form of the shoulders being in this case unequivocal, and in a practical view, important.

If we turn from the shoulders, and examine

the chest, the nature, and consequence of the disease is not less apparent. This part, which should be open, and expanded, and full, has become, especially at the upper part, contracted, and narrow; while the sternum retains its position, or is rather pushed forward, and is so destitute of flesh, as to form a contrast with the back; indeed the whole system, with the exception of the shoulders, has lost a portion of its substance, and is beeome thin and meagre.

The Colar bones are more crooked, or, one is arched, and the other flattened. One of the shoulders is pointed forward, the other, somewhat elongated. The chin is elevated from the breast, and pointed a little to the right, and the head thrown back; or if the chin be not elevated, the head very much stoops. Viewed in front the neck appears scarcely in the centre between the shoulders, the one being more elevated then the other, so that the dress slips from that which appears to be elongated, and leaves it bare. I may here remark, that when the

dress requires care to preserve it on the shoulders, suspicion should be excited, as this circumstance is commonly connected with an incipient curvature. The muscles between the point of the shoulder, and the side of the neck, are flat and sunk, or elevated and full, as the point of the shoulder is elongated, or turned forward, causing the neck itself to appear rather on one side.

On taking a side view, the effects of the disease are still more apparent, the upper part of the trunk presenting rather the form of a cone, than the natural configuration of the chest and back, the unnatural fulness of the latter, giving to that part the prominence which is proper to the former; and thus a shape far from being graceful, or strong is induced.

Such are the leading circumstances which characterize the first attack of the spinal disease; an attack, which commonly runs its course without its nature being suspected, in consequence of

the attention of the public not having been directed to the true cause of the complaint.

When the attack is over, the carriage of the head is more erect, and in every respect more natural; and the shoulders recover much of their lost resemblance to each other. But the shoulder-blades are still elevated, and project outward, so that the Spine is sunk between them, and is the nearest to the left side; the chest is still narrow, and the health not robust.

A second attack is commonly attended by a sense of sinking at the stomach; a disposition to stoop which is with difficulty overcome; and by a pain under the shoulder-blade, to relieve which, the arm is frequently moved round in a circle, and the point of the shoulder thrust forward; and thus the shoulder-blade is drawn to a greater distance from the Spine, and becomes much larger than that on the other side; alarm is commonly now excited, and attention for the first time paid to the subject.

This state of the shoulder-blade makes way for, and is the forerunner of the curvature. It will be said that this must be effected by muscular action, granted. By their strength the shoulder-blades are elevated, and drawn aside, and a continuation of the same influence ultimately incurvates the Spine. The controversy is not whether the muscles act, but how they are excited. To place the subject in another point of view; let the shoulders be voluntarily elevated, and projected forward, the trunk will then acquire much the same figure it has in the first attack of the Spinal disease. A little attention to the action of the muscles, will render it no longer problematical by what agency the curvature is effected, but unless the muscles had been excited, they would not have acted, a healthy Spine does not exert this influence, disease in some form is the exciting cause, and I have never been able to detect any but in the cartilages. In the second attack, the fullness at the upper part of the back again is evident; one of the hips also projects, and as has been remarked by some

authors, is more than naturally covered with flesh. How far this bears a relation to the state of the shoulders, is not immediately apparent, as the projection of the hip may be supposed to be occasioned by the preponderance of the trunk to the right side.

Every change in the form of the shoulders, effects a change in the centre of gravity, and consequently in the hips, and thus the air and gait in walking becomes peculiar and characteristic. The left foot is turned outward, and the knee scarcely bent, so that in walking, the limb is thrown round, rather than directed forward. The attention paid to the dress, much conceals the state of the shoulder; but a slight curvature is detected by the motion of the feet. The hip is never the seat of pain, but the shoulder in the second attack, is in no instance free, and is often pressed against the chair, or some other hard substance, to relieve from the weariness of a continued aching. The sitting down is always awry, and the left knee projects. In the sub-

sequent attacks, less of fulness is observable in the shoulders, while the chest acquires a more natural state, but the health is more uniformly indisposed.

These are the leading features generally attendant on a curvature of the Spine, to be more minute is unnecessary.

Another and a still more important question yet awaits us. How can the evil be prevented? or if commenced how can it be removed?

In discussing this question, it may be advisable to commence with the worst cases, such as are represented in Fig. 1. Cases evidently hopeless as respects the restoration of the figure. The wedgelike form of several of the vertebræ and cartilages, present obstacles that are insurmountable. Suppose a power could be applied capable of overcoming the curvature, the loss of substance of the convex side renders it impossible to prevent a recurrence of the evil; but

although the form is irrecoverably injured, very great and important benefits may still be gained The figure may be in a manner improved, and the health, in a great degree, if not absolutely restored. An incurvated Spine does not necessarily connect with it a feeble and bad constitution. Such individuals indeed seldom enjoy health, but their indisposition is that of the Spine. From other diseases they are in a great measure exempt, not frequently being a prey even to consumption.

When the Spinal disease is removed, health, chearfulness, and strength, equal to the discharge of the duties, and to a participation of the comforts of life ensue. This important good may be realized; for the disease is under the influeuce of medicine, and may be conquered, and thus the individual be placed in society on an equal footing with others. For the loss of figure is compensated by the body not being liable to violent diseases, by the increased interest of the countenance, and the vigour of intellect frequently

evinced, when the mind is not depressed by a consideration of the circumstances attendant on the body. And if to these be added the fact, that, the Spinal disease as often as it occurs may be speedily subdued, the state of those that labour under its influence scarcely calls for commiseration. Mrs. R. writes, "Though the medicines you prescribed for my niece, did not perceptably improve her shape, they had a most visible effect upon her health, strength, and countenance, indeed so much so, that all her friends were surprised by the change of her appearance."

This is not a solitary instance, nor one selected for publication but is applicable to every case however long the standing, or extensive the curvature, when the measures I am about to recommend have been pursued.

As the worst cases admit of so much relief, it may safely be inferred that those of less standing may be still more benefited, and such is the

fact; for if on the body being bent, the Spine is restored to its figure, a cure may be assured. And this is in general, as early a stage of the disease as excites particular attention, or comes under any treatment; but the commencement is the period when the melady may most effectually be combated, and the entire symmetry of the figure preserved. A few days of medical attention is sufficient to subdue an attack however frequently repeated; and when subdued, the set figure which had been acquired, is overcome by the growth of the body which follows, and the figure, by exciting more care and attention, becomes superior to what it would have been if no disease had taken place, or care been manifested. Such is the result of many years experience, I may therefore speak with some confidence.

As I have gone on I have combated the theories of other writers because they appear to me to have been adopted to correspond with the practice recommended, and not from any abstract consideration of their truth. No suf-

ficient evidence advanced in their support, nor do they claim attention from their ingenuity. But if the foundation be unsound, there may be beauties in the structure; many excellent practical remarks are found in writings where the scientific knowledge is very imperfect, but the most judicious practice can only be perpetuated, by being scientifically applied.

In the cure of the lateral curvature, one plan has succeeded another; and has been extolled, and had a short lived fame, each has possessed a considerable portion of merit; but their application not being scientifically directed, has often been injurious, and such instances of failure have brought discredit on the system. Because a plan has succeeded in some cases, it is inferred that it will succeed in all: but it is only between the attacks of disease, that it can be beneficial; for when there is a tendency in the system to recover the lost shape, many methods assist the efforts of nature. Hence it is that the want of scientific knowledge has led to the con-

clusion, that the plans which merely assisted the efforts of nature, have themselves effected a cure. The complaint at its accession and increase, resists those means that are judicious at a latter period.

The plans and modes of cure possessing merit, which have been so generously made public, I shall now notice.

The first in order is the use of machines, on the construction of which much ingenuity has been displayed; they are used in many forms, from the stiffened stays, to the complete frame; their object is to bear the superincumbent weight from the curvature, or to encase the body so as to prevent a preponderance to one side. The means seem adequate to the end, and have in some instances partially succeeded; but on a second attack, confidence has failed, their use has been abandoned, and the curvature has taken place. But were their application uninterruptedly continued, their success would be confined to slight cases; for the centre of

gravity is not a fixed point, but is influenced by the disease, and it is to the centre of gravity that the force of the machine must be directed. In severe cases, if stays are used, the body could not bear to be so encased as to resist the disposition to preponderate. I have seldom found it necessary to advise the use of any machines, except from the feeling of strength, and comfort, they sometimes impart.

As a mean of cure, the credit of machines continued many years; not from their general and ultimate success, but because no other plan was proposed. At length, Dr. Darwin advised the horizontal position, during a few hours in a day. Mr. Baynton, improved on this idea, and advised the persevering in that position not a few hours only, but for several successive months, and in every stage, and under every form of the disease, including the outward and lateral curvatures. Success, has in some measure justified the expectation excited by the recommendation of such distinguished characters. But, I appre-

hend the cases have been those of anomalous curvature, and not such as could be denominated outward, or lateral; disappointment has in so many instances been experienced where success was expected, as greatly to diminish the number of those who were advocates of the measure, and to excite a belief that the failure of success has been occasioned by an error in the principle.

When the nature of the disease shall be better understood, the horizontal position will recover something of its reputation; for, as the disease does not from its own nature occasion a curvature, as the gout occasions distortion, the horizontal position must be advantageous as a preventative, or as opposing a further increase, or after the disease has been subdued; but, this position is seldom recommended till a curvature has been formed, and then, it is difficult to comprehend on what principle a cure can be effected. Every agent that can influence the form of the

person is at rest, and a spontaneous cure is not probable.

Mr. Wilson, who takes another view of the subject, proposes to subdue muscular weakness, by muscular exertion, and advises the carrying a weight on the head, as a milk-maid carries a pail. When the disease has been subdued, this method may be adopted with considerable advantage, especially if combined with that recommended by Dr. Darwin; for the muscles after being strongly excited in supporting the weight on the head, require absolute rest, that the advantage which had been gained, might not be lost in the relaxation incident on fatigue. I have most frequently, and most advantageously, advised the supporting a weight when there has been the semblance, rather than the existence of disease, when a careless carriage of the head had occasioned a change in the centre of gravity, and produced an unnatural and deformed appearance; a circumstance alike common when the

growth of the body is rapid, and when it is stinted. The efforts of the individual are sufficient to overcome an aukward habit, but something more than personal effort is commonly had recouse to, these means whatsoever they be, rise into credit, and acquire the reputation of specific remedies. But the plan advocated by Mr. Wilson, is not of this description, being founded on Philosophical principles; is admirably adapted to those who are recovering from the spinal disease, or who have acquired an ungraceful carriage.

Any position of the head by which it is made to preponderate in one direction, is inimical to the symmetry of the system, and should be guarded against; for by changing the centre of gravity, the figure, and the air undergo a change. To state this more clearly, in every body there is one point which tends to the centre of the earth, with the united forces of the gravitating particles of that body; this is the centre of

gravity. When the body varies in its figure, the centre varies in its position; a spine greatly incurvated, has its centre of gravity two, or three vertebræ lower down the back, than if no incurvation had taken place. This is important, for the centre of gravity influences every motion of the body, as well as the gracefulness and ease in walking, and the elegance, and roundness of the limbs. A man carrying a load on his shoulders, or drawing it back with his arms, assumes different attitudes as the centre of gravity varies. Apply this to the ordinary attitudes of the body. If the head stoops, or inclines backward, an appropriate figure is assumed by the whole body. The inclination of the head of a Negro is backward, the body is lank, the arms long, and the legs comparatively fleshless. The head of a Calmuck Tartar inclines forward, the body is compact, and heavy, the arms short, and the legs thick, and shapeless. These forms are not accidental, but fixed, and uniform. Every individual whose head resembles that of the Negro, or the Calmuck, will have a correspond-

ing body.* It is not difficult for a painter to delineate the person, after ascertaining the position of the head. This subject I have treated more fully in Anthropologia or dissertations on the form and colour of man, to which I refer.

These remarks are equally applicable to the preponderance of the head from disease, or habit, as from natural position. In the lateral curvature, the head commonly reclines backward to preserve unaltered the centre of gravity, and accounts in no small measure for the thinness of the limbs.

---

* Dr. Camper, has ascertained, that the orifice of the ear of an European is in the centre of the head; and that this circumstance determines the manner of its being carried, or to express the idea in numbers, the space from the orifice of the ear to the front teeth forward and to the extreme point of the head backward, is as 15 to 15; they are equal. In the Grecian Antique the length is as 15 forward to 11 backward. In the Calmuch Tartar it is as 12½ to 6, or the space from the ear forward is nearly double of that backward. In the Negro the proportions are reversed, the space forward being only as 15, while that backward is as 17. The centre of gravity, the air, the figure, is much determined by the carriage of the head.

There yet remains one other mode of treatment to be noticed, I mean that of friction, recommended by Mr. Ware; in this plan Mr. Ware includes what he calls shampooing, or manipulation, and percussion. The first is performed by pressing, or squeezing the muscles; the other, by striking them with the fleshy part of the clenched hand. Several cures are reported to have been effected, and it may be considered the fashionable treatment of the day; its object is to increase the power of the muscles, and is a useful addition to the methods already noticed.

The liberal manner in which these modes of cure have been made known, entitles their authors to the public thanks; their motive cannot be mistaken, no selfish principle can have actuated them, that which had been beneficial they have made public; professional attendance or care, is not contemplated; nothing is to be purchased; the mothers guidance is alone sufficient. Whether this disinterested conduct has been appreciated, I know not, for dessert is not

always the road to public favor; there is another, and more certain way, mystery.

Every disease before it is sufficiently known to admit of being scientifically treated, is open to conjectural remedies; distortions of the Spine though in a less degree than other diseases yet have not entirely escaped their application. It would be unnecessary and perhaps invidious to animadvert upon the individuals who in various parts of the kingdom have come forward with some specific for this complaint. Public credulity is easily caught by any story; one cure effected, during the application of some unknown, mysterious compound, becomes a tale which the credulous, and the benevolent circulate with pleasure, without ever asking whether the form of the disease was such, as is sometimes cured by the mere energies of nature; thus a reputation is gained which subsequent failures do not remove.*

* A very few years since, an Innkeeper was much celebrated for curing Jaundice. Many persons, even from a considerable distance

It has been my object to prove, that the lateral curvature has its origin in a specific constitutional disease, and consequently requires a constitutional remedy; and, as I before hinted that there might be some relation between it, and bronchocele, I have made use of similar remedies. From ten to fifteen grains of burnt sponge, and from four to six grains of carbonate of soda, and if debility be considerable, twenty drops of nitrie acid, are directed to be given daily. Very soon, the increased flesh on the shoulders begins to diminish, and in two, or three weeks, disappears. The shoulder blades at the same time fall, and re-occupy their natural situations; the health, which had been more or less disturbed, resumes its ordinary state; the mind

---

applied for the remedy. The cures were wonderful, and the confidence very great. The applications became troublesome, and the secret was revealed, which consisted, in rubbing goose grease on the crown of the head. The remedy created a smile and lost its charm. Turpentine liniment is sold with an air of mystery for the removal of distortions of the Spine, so long as the mystery remains, cures will be reported.

becomes cheerful, and capable of application; the languid, disspirited aspect, which seemed to call for the use of tonics, and stimulants, is dispelled without them. Medical treatment is seldom further required, unless the appetite, and digestion be impaired.

When the first attack is allowed to run its course undisturbed, the consequences are by no means unimportant, the shoulder blades remain high and prominent, and no individual with high shoulder blades can bear fatigue or walk with ease. The centre of gravity acquires a new position, and the consequences before hinted at follow. I will repeat them: the form, and the carriage is neither graceful nor dignified, the agility of the limbs is lessened. Fatigue is soon induced, and the constitution is reported to be weak and feeble; but this latter is an error. The natural constitution, is generally, very good; but the influence of a change in the centre of gravity, on the activity, and strength, and the

existence of the spinal disease, give the semblance of a bad constitution.

If, after the shoulders have acquired their natural appearance, the carriage is still aukward, let the child be induced to run, and the action of the feet will determine, whether the centre of gravity be in a proper, or a forced position. If the action wants freedom, the person will want strength and symmetry. In such a case, the supporting a weight on the head is highly beneficial; the evil must be overcome. In the second attack, the same means are used as in the first, but not with the same immediate, and visible effect. The increased flesh indeed disappears, but the right shoulder is more prominent, than the left, and the chest is narrow; the system is weak; the limbs are thin; medical aid is requisite. Individuals of a plethoric habit, are benefited by the loss of blood; others, whose digestive organs are impaired, require the ordinary treatment for that malady. When the spinal disease is removed,

which is known by the diminition of the flesh on the shoulders, the attention is powerfully called to the figure, which has lost much of what contributed to its beauty and strength. This loss, the efforts of nature are in general incompetent to restore. But the assistance afforded the muscles by the methods already recommended, is of essential importance; and should the spine have been recently incurvated, and the power of recovering itself when the body is bent, not lost, persisting in these measures may complete a cure.

In the next step of the disease, when the convex side of each vertebra is lessened from pressure, and that which was almost square, has assumed the shape of a wedge, the recovery of the figure is impossible. But even in this case, the disease may be subdued, the health may be recovered, the further progress of the curvature may be prevented. The benefit indeed is great, but the curve will remain; and the evil though lessened, will still be an evil.

It is important to know, (I repeat the remark), that by an early attention to the disease, all the evils of it may be prevented. I feel confidence while I state, that, after the early symptoms shall have become well known, and medical practitioners shall have contributed their experience to the general fund of knowledge on the subject, and the improvements which they suggest be established, for there may be modifications of the disease, which require appropriate treatment, that when the knowledge on the subject shall be a little more matured, the effects of the disease will no longer be apparent; it will be a subdued malady, unable to destroy the symmetry of a well formed, and promising figure. Incomplete as the state of knowledge now is, it is sufficient to rescue all ordinary cases, for in no one instance, placed under my care, in the first stage of the disease, has any loss of figure been sustained. But the practice of an individual is too limited to embrace every form of a complaint, and therefore I have written with some diffidence.

Miss T. aged nine, who has been out of health upwards of a year, about a month since was observed to be awry: an actual curvature was formed, not in the usual place, but lower down the spine. From the state of the shoulders, I apprehend this to have been the first attack, but the progress mark it to have been a peculiar case. I however, did not vary my practice, but prescribed three grains of burnt spunge, and two of carbonate of soda, night and morning; and in three weeks, the time at which I am now writing, the curvature has nearly disappeared. To publish more cases than are sufficient to illustrate the subject is unnecessary and ostentatious. Those I have selected may be appealed to. The nature of the indisposition was unequivocal; and all have recovered by the unaided efforts of nature. After the disease had been subdued, the figure gradually became what nature designed it to be.

CASE VIII.

Miss F. aged Sixteen; in the spring of 1818 was dispirited, pale, fond of being alone, easily moved to tears, but made no particular complaint. At one period of the indisposition, a decline was apprehended; at other times, the whole was attributed to depression of spirits. No medical treatment was had recourse to, but the spirits were attempted to be roused, and the strength recruited, by abandoning occasionally the application to school lessons, and by that care, and those indulgences, which would present themselves to a parent. In the Autumn, the young lady was evidently better; but in the Spring, her health declined, the spirits again became bad, and the shoulder began to ache.

Hopes had been entertained that this attack would go off as before, but no amendment taking place, I was consulted. It had now

continued three months, the shoulders were elevated, and much covered with flesh, that on the right side, was further from the Spine than that on the left, and much thicker; the right hip was also very prominent: the nature of the case was unequivocal. I directed,

℞ Spongiæ Ustæ, 3i
Sodæ Carb. ℈iiß.
Divide in pilulas æquales xx. Capiat iij. mane nocteque.

In less than a week the spirits were better, the pain less, and the shoulders not so elevated. The habit appearing rather plethoric, four leeches were applied to the Spine with evident benefit. In three months the health and spirits were restored, and she returned to school: the shoulders had become much less, and the chest more full. When I saw her again, a few months after, the figure was good, no vestige of the affection remaining. The young lady is now sixteen, and up to the present time, no other attack of the disease has been made.

CASE IX.

Miss W. in her twelfth year became weak, sickly in appearance, and without energy. Tears were shed on the slightest cause. The nature of the indisposition was not apprehended, and therefore, every attempt to remove it, failed. After continuing in this state several months, the health became somewhat better, but was still variable. Upwards of twelve months from the first attack, the right shoulder and back began to ache, and a constant uneasiness was felt at the stomach, which induced an unconquerable disposition to stoop, so that no effort to overcome it could be persevered in many minutes.

When I visited this young lady, the indisposition had continued two years. The shoulders and neck were fleshy, the chest very narrow, the heart was easily excited to palpitation, the breathing was quick, and rather laborious. The Spine was not incurvated, but the right shoulder

was very large and full, and drawn so far from the Spine, as to excite an expectation that it must very soon have given way. The same medicine was prescribed as in the former case, with occasionally a gentle aperient. In less than a fortnight the pain became less, and the shoulder could be moved further back. The young lady is now eighteen; no other attack has taken place, and to use her own expression, her shoulder has been every year getting better, and now it can scarcely be perceived that it had been awry. Her health is good, the chest is expanded, and the heart does not palpitate.

CASE X.

Miss B. aged thirteen, 1823, was observed by her friends to have become awry. Upwards of a year she had been in a delicate state of health, without any marked disease. The Spine was not suspected of being affected; till an elevation and enlargement of the shoulder made it obvious. I was desired to see her Aug. 18th,

when I prescribed the same medicines as in the former cases. By the end of the month, her health and figure were improved. January 1814, the right shoulder became painful, and the curvature of the Spine was considerable, the same medicines were persisted in, but the curve, though lessened in the course of the year, was not removed. The springs of 1815, 16, and 17, were equally marked by violent attacks of the disease; with pain of the shoulder, and general indisposition. The advantage gained by the use of medicines, though marked, and decisive, was more than counteracted by the frequency and strength of the attacks. In March, 1817, her left hip greatly protruded, and her whole figure was very much awry.

Since that period there has been no new attack, and the figure has been gradually recovering itself. The hip does not protrude, and the shoulder is so much reduced, and the Spine has so far lost its curvature, as not to be noticed whatever dress is used, except the attention be

expressly directed to the subject. The general health is excellent. This is an extreme case, and therefore I have selected it.

CASE XI.

Miss P. of Manchester, aged 9, 1815, appeared stinted in her growth, was dispirited, dull, and made slow progress in education. Her shoulders were square, and pointed forward; the chest narrow; the flesh upon, or rather above the shoulders was much more than natural.

April the 6th, I prescribed Carbonate of Soda, and Burnt Sponge, and requested the parents to observe the effect on the shoulders at the termination of a week, when the flesh they assured me, was obviously reduced; in a fortnight the whole figure was natural. In the spring of 1816, and 1817, similar attacks were made, and overcome by the same means. She has grown up a well formed, elegant young woman.

In no one of these cases was any other medicine used, or other plans resorted to, but such as the general state of the health might accasionally require.

OF

ANOMALOUS AFFECTIONS

OF

THE SPINE.

THIS subject opens a vast field for enquiry; many diseases that affect the Spine, cannot be classed with the lateral, or the outward curvature. And many others are attributed to the Spine, which have no relation to it, or, only as sympathetic affections. The information I at present possess, is not sufficient to enable me to take a complete view of this subject, but I cannot pass it by altogether.

The first class I shall notice is that, which affects the muscles of the neck, so as to destroy the influence of the will upon them. The term

paralytic may be applied, but it scarcely conveys an adequate idea of the malady. The head rests on one shoulder, or inclines in some other way, altogether uncontroulable by the will. No contiguous muscles partake of the weakness, nor have those of the neck the deadness of common palsy.

The affection sometimes commences with a sense of suffocation, or breathlessness, except while in the open air. But in other cases, the loss of muscular power is not preceded by any symptom of bad health; what first gives rise to suspicion is, the head being involuntarily drawn aside, when the attention is excited, as in reading; but which is recovered, on the attention being withdrawn. But the indisposition still remains; and very soon reading becomes unpleasant, from the contraction or weakness of the muscles, and is given up. Still the disease advances; the head inclining more and more, till no power remains in the will to direct the muscles.

In some cases all the muscles of the neck are affected, in others, only those of one side, which occasions a painful rigidity of the muscles on the opposite side, they being excited to action, while their antagonist muscles are paralyzed; thus drawing the head with considerable force in the line of their motion, occasioning distress from the appearance it produces, and the pain it excites.

This affection is not permanent, for in a few years, or even in a much shorter period, it runs its course, and strength is restored; I know of no instance in which a cure has not taken place. If any thing shall have been used with a view to recovery, towards the close of the complaint, it rises into credit; and if it be a quack medicine, it acquires a lasting fame, which many failures cannot destroy. The credulous carry the tidings, and the afflicted listen; it is an unknown something which has wrought wonders; to the intelligent it is a straw which beguiles for a moment the prospect of destruction. But, the

medical practitioner is at a loss in pointing out a rational mode of cure. Some have attributed their recovery to friction. Others to the use of the oil of Amber, applied externally, or taken as a medicine. Others to issues, or setons; or to loosing bloed, or to the sea air. Others to quack medicines. But although the affection is removed, it frequently returns, and is again removed; sometimes, it has been immediately followed by insanity, sometimes by death.

CASE XII.

Miss F. aged 14, during the whole of the year 1821, complained of pain of the head, and sickness, both of which were relieved by being in the open air; her appetite was almost gone, but her strength did not diminish. During the year 1822, the affection was rather increased, but still she persevered in going to school. In April, 1823, she felt a difficulty in supporting her head, and by the end of May, this became impossible. She has from that time been con-

fined to bed, with an absolute incapacity of moving it, or, if the body be raised, of supporting it. From the 9th to the 17th of June, the power of deglutition was entirely lost, it then returned, and the appetite has since increased. As yet, no other muscles but those of deglutition have recovered their use. Many means have been had recourse to for the restoration of this young lady, but none with any marked advantage.

Another class of diseases, is characterised by a period of one or more years of indisposition, often attributed to debility, or to worms, or to some affection of the brain. The spine is very flexible, and the individual is indisposed to stand erect, so that when examined, the spine is seldom straight. In consequence of this affection nutritious diet, and a change of air, are commonly resorted to; but without any beneficial result.

The sense of debility continues, till a pain of the back sends the individual in a state of great

helplessness, to the bed from which, she is not soon to rise. The pain is commonly confined to one, or two vertebræ, though it is not stationary, but attacks the lower vertebræ, then the higher, or removes to the head.

In some cases the whole of the spine is painful, but not uniformly so; for certain of the vertebræ are alternately more acutely sensible. Independent of the pain, there is a sense of debility, or rather an incapacity of bearing the erect posture without fainting. The countenance, in the midst of this suffering, is not dejected, or sickly.

CASE XIII.

Miss M. aged fifteen, 1820, complained of much fatigue, after gentle exercise, of an impaired appetite, and depressed spirits. This continued upwards of a year, when an afflictive circumstance occasioned her removal from school. Soon after, her back became painful, and in a

few weeks confined her to bed. The third dorsal vertebra was exquisitely sensible to the touch; in a few days, the pain removed to the second lumbar vertebra, which it never entirely left. But a more acute and occasional pain, was perceived in some other part of the Spine, or in the head. The countenance was not depressed, nor the mind weakened. The bowels were inactive, and their discharge black and offensive. Removal from the bed occasioned fainting.

This state continued from March 14, 1821, to Sept. when she was able to sit in an easy chair for a few minutes; she has since that time gradually improved in strength, and is now able to walk some miles. Purgatives, and repeated bleedings, afforded some relief. Her recovery is attributed by her friends to rubbing the Spine with Turpentine liniment, but I apprehend, it was the efforts of nature that effected a cure. The parts of the Spine that were affected, slightly

protruded, and remained so sometime after the pain subsided; but have since disappeared.

CASE XIV.

Miss M. of Manchester, aged 15, 1818, had always possessed a delicate constitution. In the years 1815, and 1816, she suffered from two attacks of the lateral curvature, which were subdued by the means before mentioned, and was in health till the spring of 1818.

After a general sense of indisposition which continued three months, the Spine became tender through its whole extent, and the arms were almost paralysed. From August to December, she was unable to leave the house, but was not entirely confined to bed. From that time to April 1819, her health was tolerably good, and the pain of the back so little as not to prevent her taking exercise. But in April the pain returned with increased violence, and the Spine through its whole extent, was exquisitely sensi-

ble. Yet, the more urgent pain moved to different vertebræ, and to the head, occasioning for a short period, insanity.

This state of suffering, continued undiminished till November in the following year, when the whole train of symptoms began to decline, and she has been gradually recovering ever since. Issues, blood letting, and blisters, frequently repeated, gave some relief.

REMARKS.

This class is characterised by the extreme helplessness of those affected. The erect position can never be borne, except for a short period; while the countenance does not indicate the existence of disease, but has very much of its natural appearance. In most of the cases that I have been made acquainted with, some strong excitement of the mind has preceded the attack. In others, insanity has accompanied it; and, as the Spine never permanently loses its

natural form, it may not be unworthy of enquiry, whether the brain, and Spinal marrow, be not the seat, both of this, and of the preceding class of diseases. The two following fatal cases, had probably a similar origin.

CASE XV.

Ralph Burns, Cross-street, Shudehill, Manchester, aged 10. In October 1821, was very dull, unwilling to speak, but recovered towards Christmas. In January, a dullness, amounting to stupor, returned. He laid much on his face, and complained of pain of his back, which increased so as to prevent him from sleeping. The five inferior lumbar vertebræ were very painful on pressure, which occasioned him to lay on his side; his appetite was bad, and he perspired profusely. April 1, the affected vertebræ formed a slight outward curve. September 1, the curvature was considerably increased. Blisters were repeatedly applied, but the pain continued very severe, till the 14th of Feb.

1823, when it suddenly left him, he appeared cheerful, and healthy; and the curvature also became much less.

June 8, he was seized in the night with an acute pain, and stiffness of the neck, which removed from side, to side, causing the head to incline first towards one shoulder, then towards the other. In this state I first saw him; the previous account was from his father. I prescribed two grains of the Extract of Hyoscyamus to be taken every night, which mitigated the pain, and he obtained some sleep. He died October 7. He was of a very scrofulous habit, and had at the time of his death several ulcers, discharging pus. The curvature of the Spine, which was considerable when I first visited him had, at the time of his death, almost disappeared.

Liberty was obtained to make an incision, so as to reach the vertebræ of the neck with the finger, which was done by Mr. Jordan; when the cartilages were found to have been destroyed

and upwards of a pint of thick pus, found its way between the muscles, and lodged within the chest, and discharged itself through the incision, in consequence of the position of the body. There had been no cough, nor particular difficulty of breathing. The vertebræ of the back were ascertained not to be curious. I lament that I was not permitted to avail myself of Mr. Jordan's distinguished anatomical knowledge, in further examining the body.

CASE XVI.

Mr. T. aged 17, 1819, was obliged to desist from his ordinary pursuits in consequence of an affection of the Spine, from which he recovered towards the close of 1820. The affection returned. I saw him June 26th, 1821, when the neck inclined to the left side, and the first, second, and third dorsal vertebræ, formed an outward curvature; but were not greatly sensible to the touch: they were however, the seat of continued pain. The general state of the health was im-

paired, from uninterrupted suffering; but was not otherwise bad. A sponge, with hot water, was directed to be frequently applied, which always relieved the pain. Extract of Hyoscyamus was given, and occasionally, an aperient.

July 1, the head was held more erect, the horizontal posture was less requisite, and the curvature had diminished. Aug. 1, the curvature had entirely disappeared. The head, though held erect for several hours, scarcely occasioned a recurrence of the pain.

August 18. My patient was seized with pain of the head, and vomiting; on the 24th, he became comatose, and died on the 26th. The body was not inspected.

REMARK.

The affected vertebræ of the first of these cases was acutely sensible on pressure; the latter not so. I may here take occasion to remark, that

increased sensibility of the vertebræ does not imply inflammation. What is understood by inflammation is very distinct from what occurs in the first stages of the outward curvature, or any destructive affection of the vertebræ. Cases accompanied by an increased sensibility, in general, get better, those without pain from pressure, which is frequent in the outward curvature, seldom much improve. The cases related by Mr. Baynton, were all acutely sensible when pressed. This sensibility I apprehend, is indicative of a constitutional, rather than a local affection.

I now proceed to another class of this many formed malady.

Ann Barnes, aged 7, 1816, had been observed for several months to decline in strength. At first her step was short, and guarded; then she could only walk by taking hold of something, for support; at length her lower extremities became useless. I saw her, Feb. 7, when in

addition to an incapacity to move the legs, the whole back was bent, so as to form an arch; and she was wholly unable to hold herself upright. I prescribed two grains of Calomel, to be given every morning. On the 15th, she could move her limbs. 21. The back was less bowed, and the limbs stronger. 28, she could support herself, and by the end of March, her strength, and figure were recovered.

CASE XVI.

Master M. aged 4, 1820, after being able to walk, lost the power. I saw him Aug. 4. The abodemen was hard, and full, the tongue furred. The breath offensive. The Spine formed the segment of a circle, without the child being able, except by laying down, to change that form; and even then, the back was not straight. I prescribed a grain of Calomel, followed by a tea spoonful of Magnesia, every morning.

No perceptible benefit was obtained, till the expiration of the third week, but, after that period, the improvement was uniform, and in three months, the child was well. The medicine was occasionally varied, but the sole object was to correct the state of the bowels.

Master Smith, aged 12 months, 1819, was unable to use his feet, or to sit in the nurse's arms. The Spine, through its whole extent, gave way, and formed a bow. The alvine discharge was dark, the urine turbid. Calomel was repeatedly given, and every ordinary means for improving the digestive organs resorted to. The disease was very obstinate, but immediately in the fœces assuming a more natural appearance, the child acquired strength in the back. In about four months he was able to roll on the carpet; then to crawl; and at the age of two years and half, to stand. He was, when I enquired after him, in Nov. 1822, a fine boy.

REMARK.

This affection of the Spine is evidently sympathetic of the state of the stomach, and bowels; and is, in many cases, cured only by a long course of laxative medicines; but which, steadily persisted in, I have never known unsuccessful.

The last variety of Spinal affections that have occurred to me, in sufficient number to form a distinct order, is that change in the figure of the Spine, which is connected with a globular chest. This affection is occasioned by difficult respiration, which in childhood, is commonly attributed to inflammation, and means that debilitate are used as a cure; often with present success. But the disease returns in a few months, and is more obstinate. Again, it is temporally removed, and the child acquires the character of being highly inflammatory.

The disease however, is in the digestive organs,

and is more effectually subdued, by increasing their strength. After repeated fits of laborious breathing, the chest acquires a globular form, from the action of the muscles, to which the Spine corresponds.

The cure is effected by the mode pointed out by Mr. Ware.

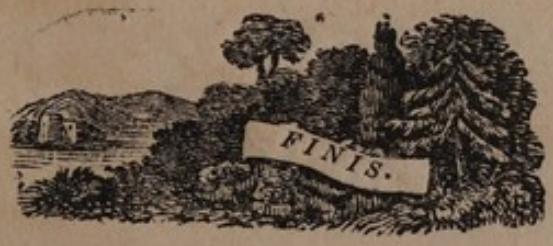
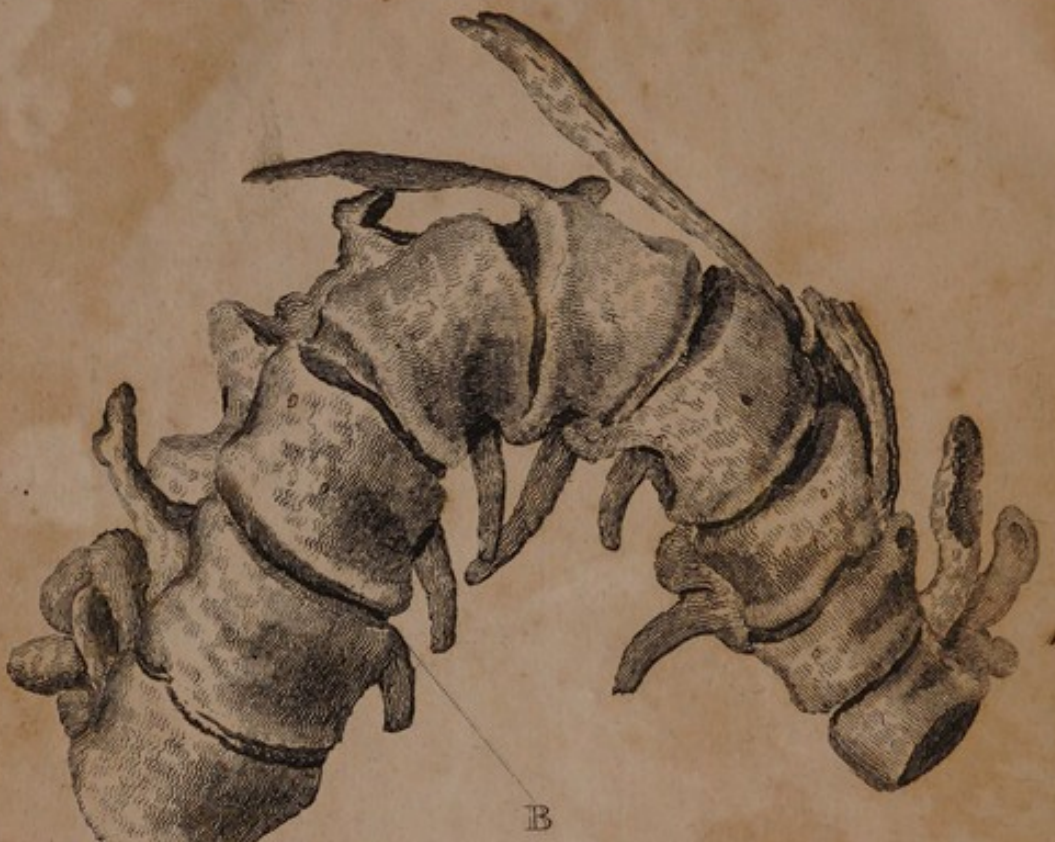
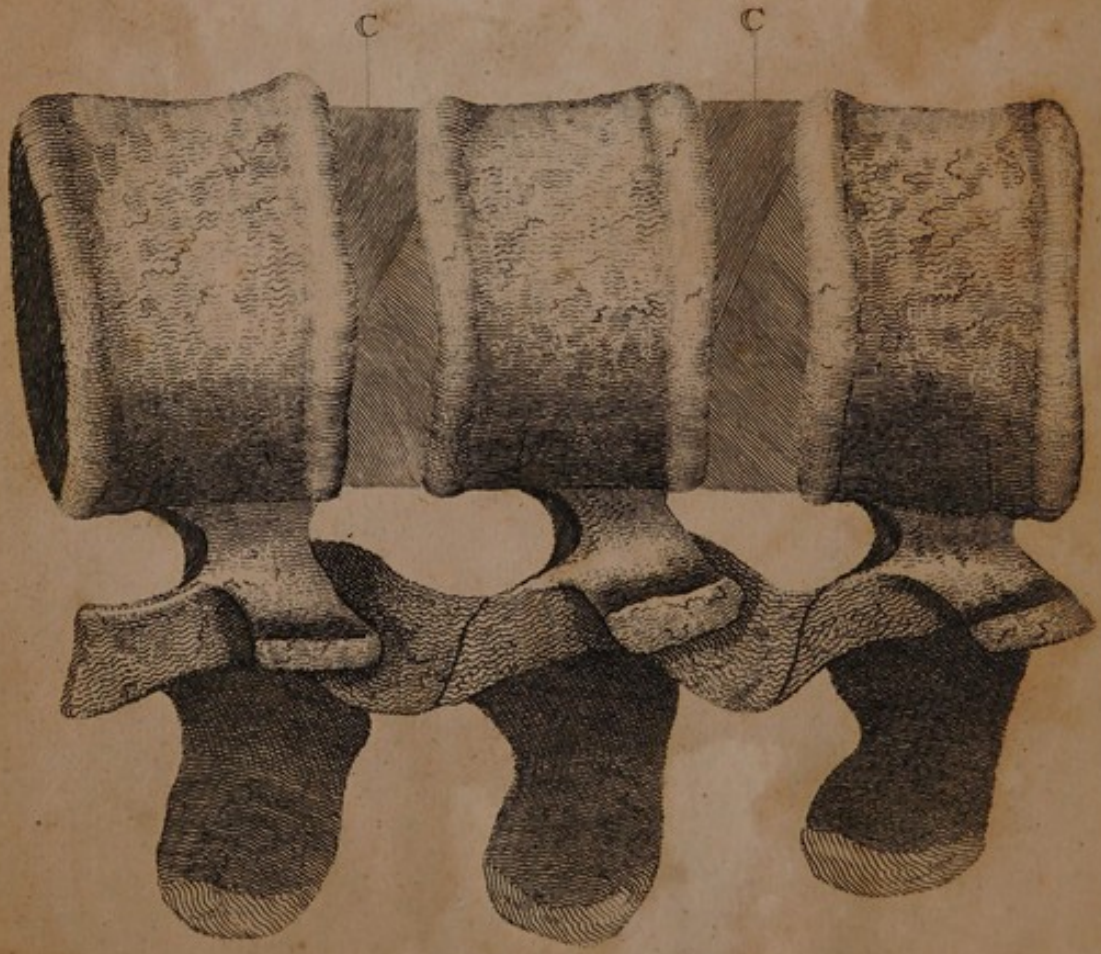


Plate I

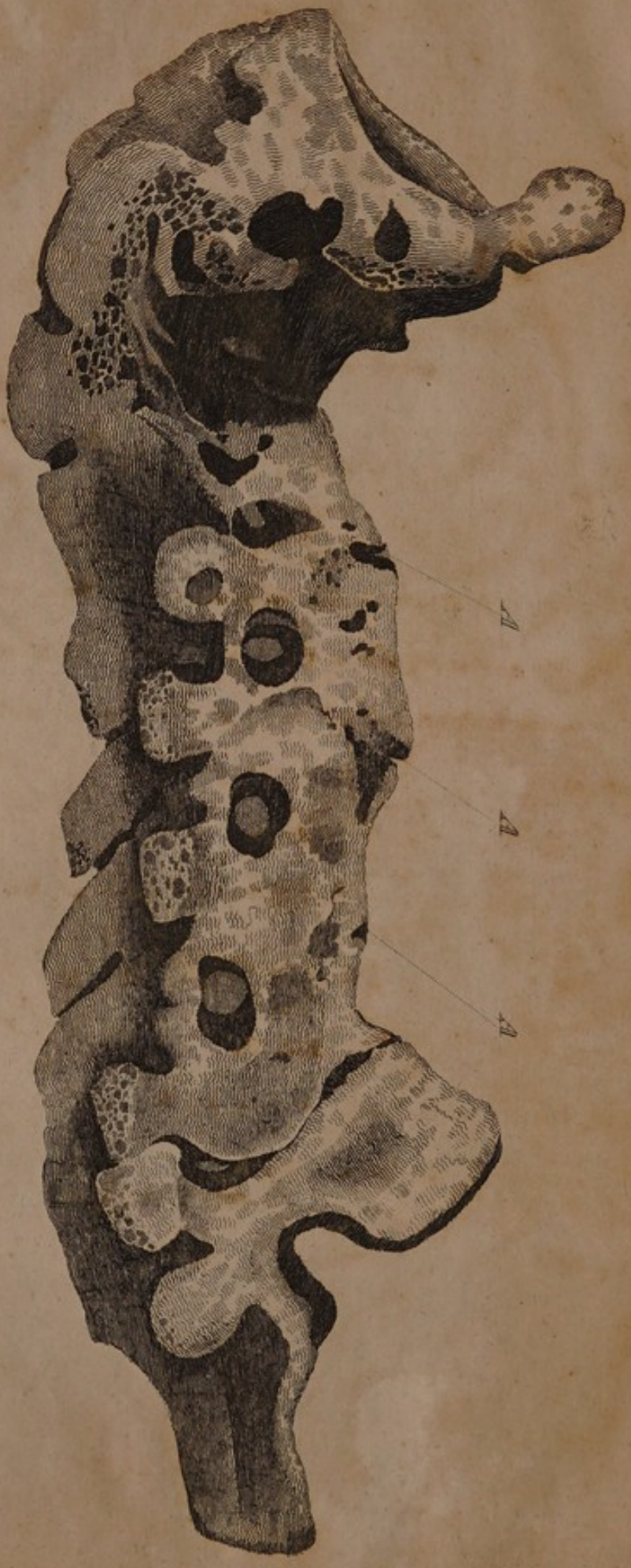


1



2

Plate 2



3

J Fothergill Sc

EXPLANATION

OF

THE PLATES.

PLATE I.

FIG. I.

THE Spine in a state of lateral incurvation. The bones free from disease but the concave side of the arch diminished by pressure. B points to the intervertebral substance, which in the recent state was enlarged.

FIG. II.

IS a Spine in its natural state. C C Intervertebral substances.

PLATE II.

FIG. III.

THE vertebræ of the neck. A A A the intervertebral substances destroyed and the vertebræ anchylosed.

Printed by SILBURN and RICHARDSON, Manchester.