SECTION I.

BOOKS.

I. Farther remarks on the useless state of the lower limbs, in consequence of a curvature of the spine, being a supplement to a former treatise on that subject. By Percival Pott, F. R. S. Surgeon to St. Bartholomew's Hospital. 8vo. Johnson, London, 1782. 64 pages.

It is now three years since this ingenious and respectable writer first published his observations on the disease which makes the subject of the present tract. His wishes and expectations with regard to the method of cure, which he then proposed, have been most pleasingly fulfilled. He has received such repeated testimony of its success from so large a number of
of the most eminent practitioners, not only in this town and kingdom, but in many other parts of Europe; that these, he assures us, added to his own experience, have completely satisfied him, and enabled him to say, that in proper cases, and under proper treatment, he has no doubt of its being universal.

The disease in question, is a disease of the Spine, producing an alteration in its natural figure, and not unfrequently attended with a partial, or a total loss of the power of using, or even of moving, the lower limbs.

From this last circumstance (the loss of the use of the limbs) it has in general been called a palsy, and treated as a paralytic affection; to which it is in almost every respect perfectly unlike.

The occasion of this mistake, our author observes, is palpable; the patient is deprived of the use of his legs, and has a deformed incurvation of the spine; the incurvation is supposed to be caused by a dislocation of the vertebrae; the displaced bones are thought to make an unnatural pressure on the spinal marrow, and a pressure on that being very likely to produce a paralysis of some kind, the loss of the use of the legs is in this case determined to be such: the
the truth is, that there is no dislocation, no unnatural pressure made on the spinal marrow, nor are the limbs by any means paralytic, as will appear to whoever will examine the two complaints with any degree of attention.

In the true paralysis the muscles of the affected limb are soft, flabby, unresisting, and incapable of being put into even a tonic state; the limb itself may be placed in almost any position, and the joints are perfectly and easily moveable in every direction.

In the present case, the muscles are more extenuated, and lessened in size, but they are rigid, and always at least in a tonic state; by which the knees and ankles acquire a stiffness not very easy to overcome; by means of this stiffness, mixed with a kind of spasm, the legs of the patient are either constantly kept stretched out straight, in which case considerable force is required to bend the knees, or they are by the action of the stronger muscles drawn across each other, in such manner as to require as much to separate them; when the leg is in a straight position, the extensor muscles act so powerfully as to require a considerable degree of force to bend the joints of the knees; and when they have been bent, the legs are immediately drawn up.
up with the heels towards the buttocks: by the rigidity of the ankle joints, joined to the spasmodic action of the gastrocnemius muscles, the patient's toes are pointed downward in such manner as to render it impossible for him to put his foot flat to the ground; which makes one of the decisive characteristics of the distemper.

These, according to our author, are the marks of the distinction which ought to be made between the two diseases. They are certainly fully sufficient to shew the impropriety of confounding them with each other.

The majority of those who labour under this disease are infants or young children. Adults are by no means exempt from it; but Mr. Pott has never seen it at an age beyond forty.

When it attacks a child who is old enough to have walked properly, its awkward and imperfect 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 some time previous to the incapacity, the child had been observed to be languid, listless, unwilling to move much, or briskly, and that he was very soon tired; that he had been observed
served frequently to trip and stumble, although no impediment lay in his way; that when he moved hastily, 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; that soon after this he complained of frequent pains and twitchings in his thighs, particularly when in bed, and of an uneasy sensation at the pit of his stomach; that when he sat on a chair, his legs were almost always found across each other, and drawn up under the seat; and that in a little time after these particulars had been observed, he totally lost the power of walking.

These, we are told, are the general circumstances which are found, at least in some degree, and that pretty uniformly, in most infants and children; but there are others which are different in different subjects.

If the incurvation be of the neck, and several vertebrae are affected, the child finds it painful to support its own head. If the dorsal vertebrae are diseased, loss of appetite, hard dry cough, laborious
laborious respiration, quick pulse, and disposition to hectic, appear pretty early. In an adult, the attack and the progress of the disease are much the same; but there are some few circumstances, our author observes, which may be learned from a patient of such age, which either do not make an impression on a child, or do not happen to it.

An adult, in a case where no violence hath been committed, or received, will tell you, that his first intimation was a sense of weakness in his back bone, accompanied with a heavy, dull kind of pain and great lassitude; that this was soon followed by an unusual sense of coldness in his thighs, and a palpable diminution of their sensibility; that in a little time more, his limbs were frequently convulsed by involuntary twitchings, particularly in the night; that soon after this, he not only became incapable of walking, but that his power either of retaining or discharging his urine and feces was considerably impaired, and his penis became incapable of erection.

The adult also, it is added, finds all the offices of his digestive and respiratory organs much affected, and complains constantly of pain and tightness at his stomach.

When
When a curvature is perceived either in an infant or an adult, it is generally attributed to a blow or some previous violence. Our author is of opinion, however, that this supposition is seldom, if ever, true in either case.

The true cause of this disease, he observes, is a morbid state of the spine, and of some of the parts connected with it. He contends that in infants this is the sole cause, and that external violence has nothing to do with it. In the adult, he will not assert that external mischief is always out of the question, yet he is persuaded that the part in which it shews itself must have been previously in a morbid state, as no degree of violence whatever is capable of producing such an appearance as occurs in the disease he is treating of, unless the bodies of the vertebrae were by previous distemper disposed to give way. In this distinction, we are told, consists the very essence of the disease.

The true curvature is invariably uniform in being from within outwards; but it varies in situation, in extent, and in degree. In general the lower limbs alone feel the effect; but the author mentions five cases, in one of which the arms only, and in the other four both legs and arms, were affected.
As the primary and sole cause of all the mischief, is a distempered state of the parts composing, or in immediate connection with, the spine, tending and most frequently ending in a caries of the body or bodies of one or more of the vertebrae, no application made to the limbs themselves, or such remedies as electricity and cold bathing, can, as our author very justly observes, ever be of any possible use. The same failure of success attends the use of the different pieces of machinery, all of which, from the most simple to the most complex, but particularly the swing and the screw, are calculated, as we are told, to remove what does not exist. They are founded upon the erroneous supposition of an actual dislocation, and therefore they always have been, and ever must be, unsuccessful. They, who have had patience and fortitude to bear the use of them to such a degree as to affect the parts concerned, have always found increase of pain and fever, and an exasperation of all their bad symptoms, and our author has seen more than one instance in which the attempt has proved fatal. He takes this opportunity to caution his readers against the absurd custom of using these instruments to prevent growing children from becoming crooked,
an effect, he observes, which, by forcing the shoulders unnaturally backwards, they must contribute to rather than prevent. If, instead of adding to the embarrassment of children's dress by such iron restraints, parents would throw off all of every kind, and thereby give nature an opportunity of exerting her own powers; and if in all cases of manifest debility resource was had to friction, bark, and cold bathing, with a due attention to air, diet, exercise, and the rest, the children of the opulent would, he thinks, stand a chance of being as stout, and as well shapen, as those of the laborious poor.

In his former publication on this subject the author was led to remark, that, previous to the appearance of the curvature, the general health of the patient does not seem to be materially, if at all affected. He very candidly acknowledges that a more enlarged experience in, and a more careful attention to the disease have convinced him that he was mistaken on this point; that most, if not all the complaints of children, labouring under this infirmity, precede the curvature, and that a morbid state of the spine, and of the parts connected with it, is the original cause of both. An inference of the greatest importance may be deducted from this fact, as he
is satisfied that the malady may, in many instances, by early and proper attention, be prevented from producing its otherwise inevitable consequences, temporary lameness, and permanent deformity.

In the same edition likewise he had described the bodies of the diseased vertebrae, as being enlarged and spread; but upon repeated inquiry and examination, he is convinced that they are not, and that the disease does not so properly enlarge as erode. The state also of the intervertebral cartilages, he finds to be subject to great variety, they being sometimes totally destroyed, while the caries is small in degree, sometimes apparently but little injured, where the caries has done considerable mischief, and sometimes totally annihilated.

The remedy for this most dreadful distemper consists merely in procuring a large discharge of matter, from underneath the membrana adiposa on each side of the distempered bones forming the curvature, and in maintaining such discharge until the patient shall have recovered his health and limbs. The idea of this mode of treatment, it seems, was first suggested to our author by the late Dr. Cameron of Worcester, who
who informed him, that, having remarked in
Hippocrates an account of a paralysis of the
lower limbs, cured by an abscess in the back,
he had, in a case of useless limbs attended with
a curvature of the spine, endeavoured to imitate
this act of nature by exciting a purulent dis-
charge, and that it had proved very beneficial.

It is a matter, we are told, of very little im-
portance towards the cure, by what means the
discharge be procured, provided it be large,
that it come from a sufficient depth, and that it
be continued for a sufficient length of time.

Mr. Pott has tried different means of fetons,
issues by incision, and issues by caustic, and has
found the last in general preferable, being least
painful, most cleanly, most easily manageable,
and capable of being longest continued.

The caustics are directed to be applied on
each side of the curvature, in such a manner as
to leave the portion of skin covering the spinal
processes of the protruding bones entire and un-
hurt, and so large, that the sores upon the se-
paration of the eschars may easily hold each
three or four peas in the case of the smallest
curvature; but in large curves, at least as many
more.
The issues are not only to be kept open, but the discharge from them is to be maintained by means of orange peas, cantharides in fine powder, ærugo æris, or any such application as may best serve the intended purpose, which should be that of a large and long-continued drain.

Whatever length of time it may take to obtain a complete cure, by restoring the health as well as the limbs, the issues, we are told, must be continued as long, and even a considerable time longer, especially in the persons of infants and growing children; the necessity of which, it is observed, will appear more strongly, when it shall be considered, that infants and young children of strumous habits are the subjects who are the most liable to this distemper, and that in all the time previous to menstruation in one sex, and puberty in the other, they are in general more served by artificial drains than any other persons whatever.

By means of these discharges the eroding caries is first checked, and then stopped; in consequence of which, our author imagines, an incarnation takes place, and the bones unite and form a kind of ankylosis.

Nothing,
Nothing, he observes, can be more uncertain than the time required for the cure of this distemper. He has seen it perfected in two or three months, and he has known it require two or three years; two thirds of which time passed before there was any visible amendment.

The first symptoms of amendment are described to be a recovery of appetite, a return of refreshing sleep, a more quiet and less hectic kind of pulse, and if the patient is of an age to distinguish he will say, that he has got rid of the distressing sensation of tightness about the stomach. In a little time more a degree of warmth, and a sensibility is felt in the thighs, and generally much about the same time, the power of retaining and discharging the urine and faeces begins to be in some degree exerted.

The first return of the power of motion in the limbs is rather disagreeable, the motion being generally painful and spasmodic, especially in the night. At this period of the cure, we are told, it is no uncommon thing, especially in bad cases, for the patient to remain some time without making any further progress; but in the milder kind of cases, the power of voluntary motion generally soon follows the involuntary. The knees and ankles gradually lose their
their stiffness, and the patient is then able to set his feet flat upon the ground, which is the certain mark that the power of walking will soon follow.

The first attempts to walk are feeble, irregular, and unsteady; but when patients have arrived at this, our author has never seen an instance in which they did not soon attain the full power of walking. At first the patient finds it difficult to resist, or to regulate, the more powerful action of the stronger muscles of the thigh over the weaker, by which his legs are often involuntarily crossed. Adults find assistance in crutches, &c. but the best and safest assistance for a child is said to be what is called a go-cart, so made as to reach under the arms and enclose the whole body.

The deformity remaining after recovery is subject to great variety. When one vertebra only is affected, and the patient young, the curve, we are told, will, in length of time, almost totally disappear; but where two or three are affected, this cannot be expected.

In his former publication our author gave a short account of the first two or three cases which occurred to him. These he has now omitted, because the number of experiments which
which have been made by eminent practitioners, at home and abroad, have sufficiently established the fact, and render the relation of particular cases unnecessary.

The author informs us, that in the space of three years he has met with but one single instance in which it has failed, where from the state of the disease, and of the patient, there was any reasonable foundation for hope; that all those who have submitted to keep the issues open long enough, have been so restored to health, and to the free use of their limbs, as to be perfectly capable not only of exercise, but of hard labour, and that he has never yet, among those so treated, met with one on whom the disease has returned.

Towards the close of the work the author gives us a variety of observations drawn from an attentive examination of the appearances that occur in this disease, and of their effects in different subjects. He is convinced that the complaint arises from a scrophulous indisposition, which shews itself in a variety of forms; sometimes appearing in a thickened state of the ligaments of the spine, at others in the form of a distempered state of the intervertebral cartilages, or in that of diseased glands. Sometimes
times it is found in the form of bags or cysts, containing in general partly a fannious and partly a curd-like kind of substance. Sometimes under these bags or cysts, even while they remain whole, the subjacent bones are found diseased, and tending to become carious. In some subjects these collections erode the containing membranes, and make their way downward by the side of the psoas muscle, or by the side of the pelvis behind the great trochanter, or in some cases to the outside of the thigh.

These different affections, we are told, are productive of many disorders, general and local, of which, strumous tubercles in the lungs, and a distempered state of some of the abdominal viscera often make a part.

When the ligaments and cartilages only, and not the vertebrae, are affected, the whole spine sometimes gives way laterally, forming sometimes one great curve to one side, and sometimes a more irregular figure, attended with many marks of ill health.

When the attack is made upon the dorsal vertebrae, the sternum and ribs, for want of proper support, necessarily give way, and other deformity additional to the curve is thereby produced.

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The author is persuaded that this kind of caries is always confined to the bodies of the vertebrae, seldom or never affecting the articular processes; that without this erosive destruction of the bodies of the vertebrae, there can be no curvature of the kind which he is speaking of, or, in other words, that erosion is the *sine qua non* of this disease; that although there can be no curve without caries, yet there is, and that not unfrequently, caries without curve; that the caries with curvature and useless limbs, is most frequently of the cervical and dorsal vertebrae; the caries without curve, of the lumbar, though this is by no means constant or necessary; that in the case of carious spine, without curvature, it most frequently happens that internal abscesses are formed, and the matter either makes its way outward, or being detained within the body destroys the patient; that what are commonly called lumbal and psoas abscesses are not unfrequently produced in this manner; and that a caries of the spine is more frequently a cause than an effect of these abscesses.

Five very accurate engravings are added, representing the morbid appearances of the spine in different subjects.