

and vomiting not unfrequently supervened—the patient sometimes fainted before its completion, and there are on record one or more instances in which fatal results have followed.”

Prof. Shaffer, of New York, in his work on Pott's Disease, says: “When suspension is employed now-a-days to reduce the deformity of Pott's disease, it cannot, for reasons to be assigned, do more than modify the compensatory curves, unless ether be administered after the plan of the German surgeons.” “If this be done, and it cannot, in my opinion, be other than dangerous or at best useless, it will be found that the pathological condition is more readily reduced, inasmuch as the reflex spasm yields when an anæsthetic is administered.”

He further observes: “When extension by means of suspension is applied, as it frequently is now-a-days, to the whole vertebral column from the cervical vertebræ down, in cases of spinal disease and the curvatures resulting therefrom, how much of the apparent change that takes place in the prejection is due to the effect produced upon the projection itself.”

He then says: “It is a well-known fact that our height is increased in the morning after a few hours' rest in the recumbent position. Extension made through the healthy inter-vertebral fibro-cartilage, and the other structures binding the vertebral bones together, for a few moments only, is capable of lengthening the vertebral column to a very considerable extent. But when the extension is applied to the healthy spine the normal curves are also obliterated and the spinal column becomes straight as it is in early infancy.

“When the same force is applied where a portion of the vertebral column is diseased, the compensatory curves which result from the changed center of gravity are also greatly modified, and the deformity is thus placed under far different relations to the healthy parts of the spine; and without, in my experience, affecting to any appreciable extent the true pathological curvatures.”

The effects of a traction force exerted upon the spine while arched backwards against a curved board is not open to these objections, and the application of this principle to the treatment of caries of the spine will commend itself to every surgeon. It must not be confounded with the so-called backward traction of Dr. C. Fayette Taylor, which was

introduced by him at a meeting of the New York State Medical Society, in 1863. In Dr. Taylor's form of backward traction the spine was merely arched backward, to shift the super-incumbent weight from the bodies of the vertebræ to the posterior processes, while no traction force was exerted upon the spine in its entirety; but in the original method which I now present for your consideration, the posterior curving of the spine is produced, and in addition to this, a traction force is exerted through the linear axis of the column while in this backward arched position. (See Fig. 4.) The effect of this combination is to produce a correct extension of the entire spinal column, tending to reduce both the compensatory and actual deformity by the combined effect of the axis traction, and the forward pressure of the curved board at the seat of disease.

It will be found of great advantage to patients in the severer stages of caries of the spine to use the recumbent frame, since in addition to the curative effect upon the disease it provides the most satisfactory form of rest yet devised for their relief, for it provides:

1. Extension of the spinal column on a posterior curve, which of itself is a source of rest to the spine by removing all superincumbent weight.
2. It tends to reduce the deformity already existing, and arrest further progress of the disease by the combination of the extension with the forward pressure of the board at the seat of disease.
3. It allows these effects to be continued indefinitely without fatigue to the patient.

In the early stages of the disease, and during convalescence, both frames may be used to advantage in conjunction with the spring lever brace (see Fig 5.), which I devised in 1883, and have since perfected, and which has since been described in various journals.

The forward pressure of the curved board upon the diseased vertebræ which have a tendency to be absorbed anteriorly and thus form a knuckle, is a powerful factor in the arrest of the disease and obliteration of the deformity when combined with traction. This is easily illustrated by taking a strip of lead or other metal and bending it in the form of a knuckle. If this strip is seized at each end and pulled, it will be found impossible to thus efface the knuckle without the expenditure of great force.