the thorax. Women in uncivilized nations have larger waist measurements proportionately than men, while the opposite is the case in civilized communities. In this way not only the muscles of the back are lessened in size and power, but the base of the thorax is so constricted that its mechanical power to aid in keeping the body erect is greatly lessened.

Chest diseases, such as empyema, which leave one lung in a permanently disabled condition, cause a very severe form of curvature, which is not amenable to treatment.

Seeing that the absolutely erect spine is but an ideal, not a reality, weakness renders slight causes operative in drawing the spine away from its position. The most frequent causes thus operating are found in the habits of children, such as throwing the weight entirely upon one leg when standing, sitting at the desk with one shoulder in advance of the other, etc. In fact, any attitude which is frequently assumed grows into a habit, and various tissue changes follow as a consequence upon the incorrect position maintained. Thus, if the weight of the body be thrown entirely upon the right leg, the left side of the pelvis is allowed to droop, the upper surface of the sacrum is in an oblique position, sloping downward to the left, and the axis of the lower vertebræ is directed towards the left side, thus causing a left lumbar curve, which must be compensated for by a curve toward the right, higher up, in order that equilibrium may be maintained. This position can be taken without causing any permanent change in the structures making up the spine, but if habitually assumed the intervertebral substances and the sides of the vertebræ upon the concave side become lessened by the greater pressure, and the parts on the sides of the convexity are permitted to increase in thickness. The muscles, also, and ligaments, intervertebral and others, upon the concave side, become shortened, the rotation which is normally produced in lateral bending is maintained, and thus permanent organic changes result. Another cause that is occasionally operative is found in the difference of length of the extremities, by which a tilting of the pelvis is produced, the base of the sacrum brought into an oblique position, and, consequently, the axis of the spine deflected from the perpendicular.

The slighter cases above referred to may generally be corrected by an effort of the patient, under the instruction of the surgeon. Where organic changes have not taken place, deviations considerable in extent may entirely disappear when a well-directed effort on the part of the patient is made to bring the pelvis to a level and the spine into the vertical plane. This is a most important circumstance to be noted in reference to treatment. It may be laid down as an axiom that the patient who can thus assume a correct position, even for a short time, may be educated into maintaining that position as a habit. Such cases form a class that are more amenable to treatment than any others. A second class consists of those who are able by an effort to lessen the degree of deformity; such patients may learn to hold permanently this amount of correction and to gain even further improvements. There is a third class who are unable by any effort of their own to produce any betterment in the distortion.

It is of course of the greatest importance that the general health of the patient should be looked after, and such constitutional treatment given as may be required.

Patients coming in the first class are better treated by the aid of systematic gymnastics, electricity, massage, etc. The second class, I believe, is best treated solely in the same way; but the third class can be helped only by various mechanical means of treatment.

No brief description can satisfy in giving an account of the systematic exercises* best adapted for the correction or improvement of these cases. It would be as unwise to treat all cases by the same exercises as it would be to treat all diseases by the same means. The habits in standing and in sitting, and in other attitudes, should be carefully studied, and everything tending to produce asymmetry should be avoided. The patient, unclothed down to the level of the trochanters, should be carefully instructed by the surgeon to assume an attitude that is the nearest approach possible to erectness; if necessary, one side of the pelvis should be raised by increasing the thickness of the sole of the shoe, so that the base of the sacrum may not tilt to either side. While the patient thus

*Heath's Dictionary of Surgery. "Roto-Latera Curvature of the Spine," Bernard Roth. *N.Y. Med. Rec.* Reginald Sayre, M.D.