

position at her desk, or in other ways take an attitude that inclines to one or the other side. This soon becomes habitual; the girl is more "at home" in the false attitude than she would be when erect, and the muscles, ligaments, and even bones of the side of the concavity soon adapt themselves to the new position, and become shortened. In this manner an element of permanency is introduced in a case that, at first, was a wrong attitude voluntarily assumed.

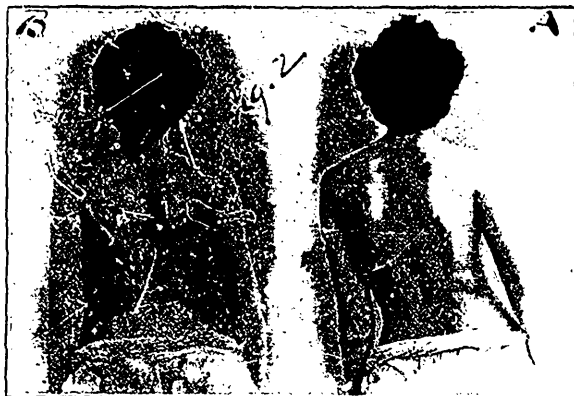


FIG. 2.

4. Constitutional conditions, such as rickets, may act directly in causing unequal development, or may simply cause a weak spine, which readily departs from the vertical because of the pressure of the superimposed weight.

5. The great prevalence of lumbar curves to the left, and of dorsal to the right, goes to show that the greater use of the right hand and arm is a causative factor.

6. Unequal development of the two sides of the body from obscure causes, may be assumed to affect the spine as well as the extremities, and thus become a direct factor in producing curvature.

A very important element in the deformity, and the one most difficult to treat, is the rotation or twist which occurs in the spine. The signs of curvature most noticeable and most readily appreciable by the inexperienced, are inequality of the shoulders, of the angles of the scapulæ, of the hips, and of the iliocostal spaces, and a departure of the row of spinous processes from the vertical; but the deviation of the bodies of the vertebræ to the right or left always antedates the curvature, as seen on the surface and indicated by the spinous processes. Their deflection is also much more in degree than that of the spines. This increased distance of the bodies from the centre line causes a rotation about the vertical axis, and the head of the ribs and the first part of their shafts are thrown backward on the side of the convexity, while on the side of the concavity there is a corresponding flattening. In order that the ribs may meet at the sternum, there is a consequent sharp bending in front of the ribs that are flattened behind, and a flattening in front of those which are more sharply curved behind. This gives us the marked inequality in the oblique diameters of the chest.



FIG. 3.

As found in children and adolescents, this deformity is of most interest, both because it is at this period when it most frequently manifests itself, and is most amenable to treatment. It is observed much more frequently in girls than in boys,