

ment occurred which produced the monstrosity of the limbs. Is it not very probable that the chondrification process in these two abnormal vertebrae was hindered so that the perichordal septum was not broken down, but remained intact, thus producing a vertebra with a divided body?

Ossification as mentioned above tends to occur in the body from one center, which may be divided. Under such conditions, with the perichordal septum intact it is possible that more of the ossifying center should be in one half than the other, thus accounting for the unequal rate of growth in the two separated halves.

There are some other points of interest in the vertebral column. The lateral masses of the sacral vertebrae ossify as follows: the first at the fifth month of intrauterine life, the second at the sixth month, the third at the seventh month, the fourth and fifth after birth about three months. In this foetus, the age was given as seven months and the third lateral mass center is just appearing, thus showing a normal rate of growth.

The first coccygeal vertebra in this foetus has a center of ossification in its body, while normally it appears in the first year after birth, so in this region there is an actual acceleration of ossification, in direct opposition to the retardation or suppression shown in the abnormal portions of the skeleton.

The core of the limbs at the third week is filled with vascular mesenchyme which at the fourth week becomes a scleroblastematous condensation which then becomes successively chondrified and ossified. The primary failure of the digits and ulna of this foetus can thus be placed as far back at least as the fourth or fifth week of development, at the time when the differentiation of the skeletal parts should have occurred. This would correspond with the time of production of the defect in the abnormal vertebrae. These facts would seem to indicate that at this particular period was exerted the strongest and most active influence of the agent producing the deformities.

Absence of the ulna is a much rarer condition in the forearm than absence of the radius. Kümmel ('95) has collected a series of cases of defect in the bones of the forearm. Unfortunately