

a pair of these, and as these cells have the potentiality to give rise, by successive division, to all the orders of tissue, and all the tissues of the individual, so each when separated from its fellow can give origin to a complete (anterior or posterior) series of organs. Dependent upon the period in early embryonic life at which the separation occurs so may we have,—

1. Complete division, with formation of two separate embryos from the one ovum (monochorial twins). Dichorial, dissimilar, twins originate from two separate ova.)

2. Separation of the superior growing point cells at early or late period, leading to the various grades of anterior or superior deduplication from Dicephalus quadribrachius (earliest) down to deduplication only of the pituitary body (latest).

3. Separation of the inferior growing point cells causing inferior or posterior deduplication, with a corresponding series of forms, the slightest and latest being cases of deduplication of the external organs of generation.

4. Combinations of both superior and inferior dichotomy (Anakatatididymus).

5. Separation of the primordial cells given off from the superior and inferior growing points, the cells at the growing point not dividing, leading to Mesodidymus (very rare).

Besides these conditions of dichotomy, he discussed the series of cases of complete division of the embryo, and tendency to form two embryos upon one ovum, with subsequent fusion. This fusion he divided into:

1. Ventral.

2. Latero-ventral.

3. Superior—(a) apico-polar (early fusion, leading to Janiceps formation), and (b) dorsi-polar (late, craniopagus).

4. Inferior—(a) apico-polar, leading to the condition of pygopagus, and (b) dorso-polar (late, leading to xiphopagus).

He further pointed out that the continuance of proliferation by the growing point cells, after the Anlagen of the axial organs have been developed, affords the simplest and most satisfactory explanation of the curious series of teratomas developing at the site of the anterior and posterior poles of the embryo, namely, conditions of epignathus and congenital sacral teratoma.

Lastly, he pointed out that premature exhaustion of the growing point cells affords adequate explanation for the conditions of cyclops formation at the superior pole, of symphus or symelia at the inferior pole.