

option but to discard these terms. As pointed out by Minot, the recognition of the separation of the mesoblast into mesothelial and mesenchymatous elements respectively, suffices for all practical purposes to indicate that which is of real importance in His's observations, namely, the recognition of the ultimate evolution of the primitive mesoblast into two distinct series of cellular constituents.

For our purpose, it is unnecessary to choose definitely between the two main contending views as to the origin of mesenchyme. Whether all the primitive mesoblast first passes into a mesothelial stage, from which by further proliferation the mesenchyme is derived; or whether, on the other hand, a portion of the mesoblast does not undergo conversion into mesothelium, but continues directly to develop into mesenchyme, is for us a relatively secondary matter. The important point is, that we have to recognize that the primitive mesoblast is eventually separated into these two sets of cells, and of these the mesothelium is differentiated into a layer of the lining membrane type.

At a still later date masses of mesothelial cells again accumulate, and, as was the case with the epiblast and the hypoblast in the earlier stage, they give off on either side a mass of more undifferentiated cells, and these masses form the mother tissue or anlage of the eventual striated muscle. Later, though still in this embryonic period, with the development of the first vessels, the mesenchyme gives off a series of cells of the lining membrane type, which form the eventual lining cells, or endothelium, of the vascular and lymphatic systems.

There is still some little uncertainty as to the exact relationship of the vascular endothelium, whether it be directly derived from mesothelium or from the mesenchyme. As Professor Minot has pointed out to me, His has of late indicated that it is of relatively very early development in certain forms. On the other hand, I learn from Professor McBride that relatively high up among the forms of animal life it may be wanting, as again it may only show itself at a period definitely later than the development of the vascular channels. What I have stated above, thus, may be taken as representing, as accurately as is possible at the present time, the generally accepted relationships in time, of endothelial to other embryonic developments.

Thus during early embryonic life we obtain a series of differentiations of the primitive cell layers leading to the production of two sets of tissues; one which we may term the lining membrane tissues, the other, the pulp tissues. I do not wholly like the latter expression, but can think of none other which more nearly expresses the conception which I wish here to impress on the reader, namely, that, in this very earliest