

in quite large cells; in fact, an egg little more than one sixteenth of an inch in mean diameter (Pl. 8, fig. 21) contains numerous cells of considerable size, (Pl. 8, fig. 21a,) no one of which contains a mesoblast. Nor can it by any possibility be advocated, that these cells are the contents of other cells, for no others exist; even in a much larger egg, up to full-grown ones, this holds good just as undoubtedly, for in such a mass of yolk as larger eggs contain, the mesoblasts and ectoblasts have respectively very peculiar and unmistakable properties, not to be confounded with any other cell contents. The resemblance which this mode of cell formation bears to that commonly received is far more apparent than real; yet, paradoxical as it may seem, we must confess that it is very difficult to express the essential character of the difference which separates these two different modes of viewing the subject.¹

An ectoblast, which, under a power of five hundred diameters, appears about one-eighth of an inch through, in its greatest diameter, (Pl. 8, fig. 21a,) has attained its greatest transparency. The ectoblasts preserve this remarkable transparency up to the full accomplishment of their growth, which is not reached, however, till the egg is fully ripened.

The ectoblast has a remarkable plasticity and resilience, which the mesoblast also shares, existing from the youngest (Pl. 9, fig. 8a, K) to the oldest stages, (Pl. 9, fig. 11h,) in consequence of which the cells may squeeze and worm their way among each other, and yet, when free, return to their original rotundity. Nor is this all; for, besides their impressibility, they have an equally great extensibility, (Pl. 9, fig. 8a, A, M, N,) which may best be seen after they have been left in contact for a while and then forced apart, by setting the ambient fluid in motion, when their adherent portions stretch out with long arms. However, beyond a certain extension of these projections the agglutination ceases, and each cell returns to its proper sphericity.

Beyond the fact that the slightly irregular rough surface of the smaller cells becomes, in the larger cells, a remarkably smooth, polished, yet not glittering superficies, presenting on the whole the appearance of a beautiful sphere of glass, we have nothing further to add as regards this special part of their organization, except to mention the action of heat, which collapses the cell wall upon its mesoblast, the latter remaining undisturbed, whilst the ectoblasts are fused into a

¹ Properly to consider this subject, it should be introduced when investigating the mode of origin of the mesoblast, as we view this process. Since the growing ectoblast, apart from its mesoblast and entoblast, varies but little, excepting in size, from the

time of its birth, we may now complete the description of its phases in a few words, and then proceed to describe the development of the primary alteration of its homogeneity, that is, the initiative step in the formation of the mesoblast.