

the Purkinjean vesicle¹ being much smaller (Pl. 9, fig. 6b) than those nearer the centre of the egg (fig. 6a); and between these two extremes a gradual increase in bulk from the former to the latter is readily traced. This feature holds good throughout the succeeding phases of the ovarian egg, even to its full development (Pl. 9, fig. 11d-11g).² About this time, also, there appears a whitening of that side of the egg where the Purkinjean vesicle is situated. This whiteness increases in intensity and breadth as the egg enlarges, till in a full-grown ovum it occupies a considerable area. This differentiation of color from the surrounding and gradually deepening yellow is owing to the increasing preponderance of albumino-oleaginous clear cells (Pl. 9, fig. 5c, *b*, 11c) around the Purkinjean vesicle, intermixed with the usually larger mesoblasted ones.³ Again, as the egg comes to maturity, the yolk cells increase to an enormous size, (Pl. 9, fig. 11g, 11i,) their single yellow mesoblasts nearly fill them, and the waxy entoblasts gorge the mesoblasts. Thus, by the decrease of the clear space, and the filling up of the same by the darker and yellow mesoblasts and entoblasts, the whole egg gradually receives a deeper and more orange-colored hue, excepting, as we have said above, where the space around the Purkinjean vesicle is whitened by the greater predominance of cells with homogeneous contents and a white reflection.

At this time, too, the Purkinjean vesicle has lost its Wagnerian vesicles, and presents pretty uniform homogeneous contents, (Pl. 9, fig. 9c, 10c, 11b,) of a highly albuminous nature, so clear and dark as to give the surface of the egg the appearance of having a hole in it (Pl. 9, fig. 4-10; Pl. 9a, fig. 16, 18, 32, 32a). There is never, not even when the egg is matured, the least trace of a separation of a portion of the yolk around the Purkinjean vesicle, to form what is called, in the Bird's egg, the "cicatricula"; on the contrary, as we approach this region,

¹ According to Meckel von Hemsbach, Leuckart, Thompson, and others, the region in the vicinity of the Purkinjean vesicle of the Bird's egg is quite deficient in the "corpuscles" characteristic of the yellow yolk; the space thereabout and the canal leading to the centre of the yolk mass being occupied by bodies quite different from those exterior to them in the mass of vitelline substance. Yet, from the description of these authors, it would appear that the genetic connection of these bodies had not wholly escaped them; but that they have laid too much stress upon the extremes of a graduated modification, which is very similar to that which obtains in the egg of Testudinata.

² See the description of these cells, p. 474.

³ The clusters of cells on the periphery of the

enlarged Purkinjean vesicle, represented in fig. 5c and 11b, and marked *b* around fig. 5c, and 11c around fig. 11b, are meant to represent a part of the whitened yolk which surrounds these vesicles. As the reader may find some difficulty in tracing these references upon the plates, as the cells of the white area are represented on the edge of the figures referred to, which is their true position, a few more remarks are needed. In fig. 5c, the letter *b*, which designates these cells, may be seen on the margin of a cluster bordering on the left upper side of the Purkinjean vesicle which they surround. In the same manner are these cells represented in fig. 11c, as bordering the Purkinjean vesicle of fig. 11b, which they surround in the same manner as the smaller cells of the preceding figure.