

## SECTION II.

## DEVELOPMENT OF THE YOLK.

In order that the history of the yolk, which follows, may be complete in itself, it is advisable to revert to the first appearance of what is afterwards called yolk, as the original contents of those particular granule-like cells which eventually declare themselves as eggs.

We have already said, that at first the yolk is a perfectly homogeneous, highly refracting, brilliant, yellowish fluid, which gradually loses its density, and becomes more transparent and colorless up to a certain age of the egg, when the whole begins to appear heterogeneous in its aspect (Pl. 8, fig. 1, *p*). At this period, when the egg is about  $\frac{1}{1000}$  of an inch in diameter, there ensues a great and very remarkable change; the contents of the egg divide into two very different looking portions, (Pl. 8, fig. 1, *p*), one of which retains the character of the stage just passed, (upper part of fig. 1, *p*), whilst the other, which is the larger, assumes a clear, hyaline, and hardly refractive condition, indicative of a greater amount of albumen than in the darker part.

The germinal vesicle is usually found in the more transparent portion of the egg, but now and then it lies in the darker region; when in the former it is at times difficult to recognize, because its density and that of the enveloping medium are so nearly alike as to give a very faint difference in refraction.

Soon after this, when the egg has reached the size of  $\frac{1}{1000}$  of an inch in diameter, the homogeneous fluid of the darker side becomes spotted here and there with very minute granular vesicles, with dark outlines (Pl. 8, fig. 2, 3, 3a). These vesicles are mostly situated near the periphery of that side of the egg; but gradually they appear nearer and nearer to the centre, increasing in size at the same time, till they occupy the whole field adjoining the hyaline region, (Pl. 8, fig. 4, 5,) when the whole mass presents an opaque, dense, fuscous colored and coarsely granulated appearance. There is no constant relation, at any given time, between the size of the egg and the amount of light and dark parts, in definite proportions to each other. One egg may have its denser region but slightly granular, while that of another of the same size will be filled with granules. The same indefinite relation occurs throughout the different parts of the egg, even to quite an advanced period.

But, to return again to the younger stages, we would note the very remarkable and sharp, straight line of meeting of the two different portions of the egg,