

which, at a certain age, runs in a plane passing through one of its great circles (Pl. 8, fig. 3, and 3a). After carefully dissecting away the envelopes, the eggs can be rolled backward and forward, by tipping the watch-glass which holds them, or by blowing upon the serum in which they swim, so as to disturb its level; and as the several eggs pass by the eye, one is reminded of glass globes whirling along, freighted on one side with golden pebbles. The splendor of such an apparently trifling object needs to be seen to be appreciated. Now follows the encroachment of the granulated portion of the egg upon the clear space, at the time the egg has reached the size of about $\frac{1}{10}$ of an inch in diameter. This proceeds after various modes: sometimes the clear space fills up in a gradual way, as if a deposit was forming in it, (Pl. 8, fig. 6, 6a,) till the whole spherical cavity is occupied by a dense, equally distributed, coarsely granular mass; at other times a projection starts out from the darker part into the clear fluid, (Pl. 8, fig. 10,) and divides it into halves, each of which gradually darkens with deposits; again, the granules appear, as it were suddenly, in heaps, (Pl. 8, fig. 9, 9a, 13a, 15,) throughout the homogeneous medium, and, gradually extending their arms to each other, anastomose, and inclose clear hyaline spaces, (Pl. 8, fig. 15,) the so-called oil drops¹ (Pl. 8, fig. 7, 16a, 16b); finally, a ring of coarser materials appears near the centre, giving the egg a zonated appearance, (Pl. 8, fig. 18a, 19,) with the germinal vesicle at times between the dark bands. This last phase is found in eggs of about one twentieth of an inch in diameter, which are easily seen with the naked eye; and we believe it to be peculiar to this age. In fact, the different features mentioned above correspond more or less to a certain stage of the development of the yolk cells. Beyond the last stage, just mentioned, we cannot trace this progressive growth step by step, on account of the opacity and size of the eggs; but thus far it is perfectly reliable that these diverse appearances are normal, since they were recognized, not in one only, but in as many eggs as were examined. By this time the egg has assumed a uniform bright yellow color on that side where the germinal vesicle shines through as a clear (Pl. 8, fig. 17, 17a) but dark spot, immediately surrounded by a very light yellow ring, which shades off into the deeper color beyond. As the egg progresses toward its full development, the yellow color of the yolk grows deeper, (Pl. 9, fig. 4, 5, 6, 7, 8,

¹ These clear spaces must not be confounded with those which are observed in the spheres of segmentation, though they originate probably in the same manner. That there are eggs containing oil drops, cannot be doubted; they are frequent in the eggs of Fishes, but they differ greatly from the albuminous clear spaces of the Turtle's eggs just described. Much

more extensive investigations upon the structure of the eggs of animals of different classes, in their successive stages of development, are still required, before satisfactory comparisons can be instituted between them and the features peculiar to different types pointed out. Comparative Oology is a branch of Embryology yet to be founded.