

their oily appearance, their separation from each other, and their position within the vitelline sac.¹ In an older egg, about one sixteenth of an inch in diameter, (Pl. 9a, fig. 16, 15,) their contents are granular, and the mesoblast very darkly and thickly outlined, evidently by reason of its oiliness, which, by its highly refracting powers, produces also a dark centre resembling, and no doubt often mistaken for, an entoblast. In an egg one tenth of an inch in diameter, these cells (Pl. 9a, fig. 20, 20a, *a*, *b*,) hardly differ from the last, excepting that their mesoblasts are less in size; an irregularity, according to age, noticed elsewhere in regard to the constituents of other membranes. In another egg of this size we have represented this membrane in profile, (fig. 18a, *c*,) as bounded by two lines, the outer being the original yolk membrane, and the inner the line of demarcation between the yolk and the membrane in question.

The manner in which the cells of this layer overlap each other, in an egg about one quarter of an inch in diameter, (Pl. 9a, fig. 21, 21a,) shows that they do not as yet all lie in one plane. Here their size, and also that of the mesoblast, is considerably increased. The latter has moreover a dot, the entoblast, in its centre, and in some instances two dots, with a corresponding elongation of the mesoblast, apparently indicating that a self-division is in progress, which, as will be seen hereafter, (Pl. 9a, fig. 27,) is finally accomplished. Upon opening the egg, this layer is found to have such a consistency as to restrain the yolk from spreading rapidly; and moreover it is recognizable by its much lighter color.

In a full-grown egg the cells of the embryonal membrane are considerably larger and more transparent than in the last egg, and exhibit the same double entoblasts (Pl. 9a, fig. 22a). By fixing the focus of the microscope at the horizon of their greatest diameter it will be seen that they are sharply polygonal, (fig. 22,) the broad light bands between them representing the thickness of two juxtaposed walls, the superficies of which are obscured by mutual fusion, and by the absence of refraction consequent upon the loss of curvature.

Thus far, the embryonal membrane has been traced in its development as a feature of the interovarian egg; whatever else may be said of it hereafter, refers to its more or less intimate connection with the changes of the embryonic envelopes, of which it becomes at least a prominent part, if not conspicuously an efficient member.

In an egg in which the cephalic hood has commenced to form, (Pl. 11, fig. 1, *a*¹,) the cells of this membrane (Pl. 9a, fig. 24) are very transparent, especially where they rest closely upon the back of the embryonal area; yet, excepting perhaps the slightly smaller size of the mesoblast and the apparent presence of a dot

¹ See note 1, p. 486.