http://www.geology.19thcenturyscience.org/books/1857-Agassiz-NatHist/README.htm

still more differentiated, stands out as a tenacious layer, capable of holding in durance the internal, fluid, mobile portion of the conglomeration.

Anterior to this, in some cases, (Pl. 8, fig. 1, *c*, *c*[1],) but not always, a nucleus, the germinal vesicle, makes its appearance. There is, however, no relation between the size of the egg and the period of the first appearance of the germinal vesicle; at one time we find it nearly filling a small egg (fig. 1, *c*, *c*[1]); at another, it is not at all present in a comparatively large one (Pl. 8, fig. 1, *f*, *i*, *k*). Beyond a certain size, (Pl. 8, fig. 1, *l*,) however, about $\frac{1}{300}$ of an inch in diameter, it is never absent; so that there is a limit, on one side, to the irregularity of its development. It is hardly necessary, after what has been said, to remark, that the nucleus has no part whatever in the formation of the egg cell, but is entirely a subsequent feature of the contents among which it is introduced. True enough, there is a solid substance around which its cell wall arranges itself, just as most observers have of late advocated, but here the parallel ceases; for the basis of this operation is not the nucleus, the germinal vesicle, as they would have it, but the yolk, to all intents and purposes.[1] The nucleus, in this instance at least, is often a feature of very tardy appearance, and always arises like a swelling, having the concave contour of the egg-cell wall for a basis. It is always very transparent, but most especially so in the younger stages of the growth of the egg, (Pl. 8, fig. 1, *m*, *n*, *o*, *p*, fig. 3 and 3a,) when it is often difficult to determine its outline definitely, its transparency arising from the mode of its origin, of which we will speak presently.

The germinal vesicle is always visible to the naked eye, in eggs of from one sixteenth of an inch in diameter to full-grown ones; its presence is indicated by a clear, dark, round spot at the surface, where it originates, as will be shown below (Pl. 9, fig. 9 and 10; and Pl. 9a, fig. 32 ([2]) and 32a). It appears very often on the distal side of the egg, and at other times next to the attachment of the ovum,[3]

[1] Barry, (Phil. Trans., London, 1838, p. 308–310, pl. v., fig. 1, 18, and 19,) Leuckart, (Handwörterbuch der Physiologie, etc., von Dr. Rudolph Wagner, article Zeugung, p. 815,) and Thompson, (Cyclopedia of Anatomy, London, 1854, article Ovum, p. 76 and 77, fig. 53,) all hold to the origin of the yolk substance around the previously existing germinal vesicle; but if we mistake not, in many instances the germinal vesicles of these authors were the true eggs, and in others the vitelline sac was concealed by its close contact with the wall of the Graffian follicle.

[2] The small germinal vesicle of this magnified egg will be perceived on the left side of the figure, about one third from the centre.

[3] Various authors, who have made more or less special investigations upon this subject, assert that the germinal vesicle, throughout the animal kingdom, has a central position in the younger stages of the egg, but that later it approaches, and finally plants itself at the surface. Now, since we have pointed out its superficial position from the very beginning, in Testudinata, and have observed the same feature in the eggs of other animals, as future volumes will show, we have reason to believe that the assertion of these authors, respecting the situation of this vesicle, cannot be sustained by more rigid researches. Such a situation may be only apparent, owing to the position of the egg under the microscope.