

are accompanied, in some animals, by a rotation of the yolk within the egg, as may be distinctly seen in some of the mollusks, especially in the snails.

296. At the same time, the yolk undergoes a peculiar process of segmentation. It is first divided into halves, forming distinct spheres, which are again regularly subdivided into two more, and so on, till the whole yolk assumes the appearance of a mulberry, each of the spheres of which it is composed having in its interior a transparent vesicle. This is the case in mammalia, most mollusks, worms, &c. In many animals, however, as in the naked reptiles and fishes,* this segmentation is only partial, the divisions of the yolk not extending across its whole mass.

297. But whether complete or partial, this process leads to the formation of a *germ* comprising the whole yolk, or rising above it as a disk-shaped protuberance, composed of little cells, which has been variously designated under the names of germinative disk, proligerous disk, blastoderma, germinal membrane. In this case, however, that portion of the yolk which has undergone less obvious changes forms, nevertheless, part of the growing germ. The disk again gradually enlarges, until it embraces the whole, or nearly the whole, of the yolk.

298. At this early epoch, namely, a few days, and sometimes a few hours, after development has begun, the germ proper consists of a single layer composed

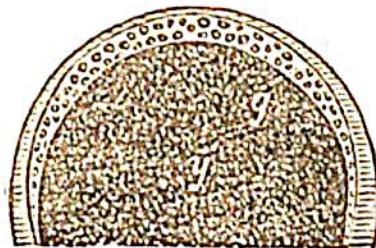


Fig. 102.

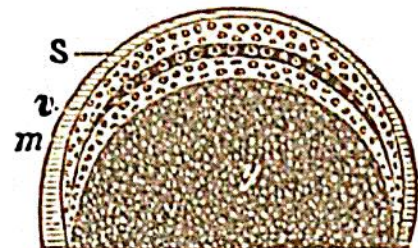


Fig. 103.

* In the Birds and higher reptiles we find, in the mature egg, a peculiar organ, called cicatricula, which may, nevertheless, have been formed by a similar process before it was laid.