centrifugally, but these do not reach to the investing membrane. They are, moreover, divided from it by a layer of cells and fibres 0·024 mm. in thickness.

There is a single layer of irregular cells with an average diameter of 0·01 mm. (Pl. LXXI. fig. 33, *c*) lying close to the inner surface of the membrane (*b*). Their nuclei are conspicuous, spherical, and can be readily stained. Between and over these cells, which are divided by small intervals, fine fibres running in all directions (Pl. LXXI. fig. 33), are found together with numerous bloodvessels. These fibres extend up into the partitions dividing the lower portions of the centrifugal parts of the gland-tubes from each other.

With a low power this layer of cells and fibres appears as a granular zone (Pl. LXXI. fig. 32). It corresponds to that of *Chauliodus sloanei* figured by Ussow (*loc. cit.*) in fig. 7, pl. ii. Above the central space or lumen of the gland, which is usually occupied by the granular non-transparent secretion, a disc, which deserves particular attention, is situated, and occupies the whole of the constriction, and in this way completely divides the contents of the spherical from those of the cup-shaped part of the organ. It is 0·16 mm. broad, circular, expanded in a plane vertical to the axis of the organ, and 0·1 mm. thick. The upper external surface is flat, whilst the lower surface, looking towards the interior of the spherical part, appears slightly convex and projecting in the centre into the lumen of the gland (Pl. LXIX. fig. 3).

This disc is divided by a kind of diaphragm, which is not very distinct, into two portions, an external and an internal. The diaphragm appears as a continuation of the inner membrane, stretched out within the projecting ring of the incision which divides the cup-shaped from the spherical portion of the organ.

The whole of the disc is composed of large irregular cells, which readily become stained and contain large spherical nuclei, 0·008 mm. in diameter, which then appear exceedingly prominent. Although the contours of the cells are not very distinct, I have been able to see them in the organs of all the specimens examined by me.

This double disc of large cells is very conspicuous; it corresponds, as far as its position is concerned, with Ussow's[1] "lens." Leydig[2] represents it as a portion of the granular secretion occupying the lumen of the gland.

The space above this disc—the cup—is filled with a somewhat granular substance in which radial lines are very clearly visible with a low power (Pl. LXXII. fig. 32). A similar radial structure has been observed in this part of the organ by Ussow[3] and Leydig[4]; but while the former supposes it to be caused by irregular threads pervading the structureless substance filling the cup, the latter sees in it the expression of radial gland-tubes similar to those found in the lower spherical portion of the organ.

[1] M. Ussow, *loc. cit.*, pl. ii. fig. 6 *k*, *l*.
[2] F. Leydig, *loc. cit.*, pl. vi. fig. 33.
[3] M. Ussow, *loc. cit.*, pl. ii. fig. 6, *x*.
[4] F. Leydig, *loc. cit.*, pl. vi. fig. 33.