

of the two hyaline cells; the median portion is usually formed by a sinuous rod of varying length, which ramifies at its lower extremity into four coils; the whole structure reminds one very forcibly of the Malpighian bodies of the kidney; in some cases the median rod is double, and more rarely (fig. 13) it is represented by four or five pieces; it is possible that these varieties correspond to stages in growth, the more complicated (*e.g.*, figs. 11–13) being the older.

The "hyaline cells," as already mentioned, are two in number in each retinula; the nucleus is situated close to the lower extremity; in sections which have been slightly depigmented the whole of these hyaline cells becomes tinged of a light mahogany brown, with the exception of the nucleus, which remains unstained, and is therefore exceedingly conspicuous; in, *e.g.*, figs. 16, 17, which are drawn from such sections, it may be seen that these cells enclose almost the whole of the rhabdom, and this would seem to suggest that they are concerned in its production and may therefore perhaps be modified retinula cells; the cells themselves are quite homogeneous and transparent—apart, of course, from the nucleus—and in section appear exactly similar to the vitreous body; they are, however, more transparent and quite colourless, whereas the vitreous body is always of a chitin-yellow colour. In a teased preparation of the eye of *Serolis cornuta* the addition of strong nitric acid dissolves out the pigment, which is at first absorbed by the hyaline cells, causing them to assume a very remarkable appearance, represented in Pl. X. fig. 1; these cells become quite granular with a crenated outer margin and of a dark greyish-black colour; when the process of depigmentation has gone on a little further the pigment is dissolved out of the hyaline cells, leaving them perfectly transparent and smooth, or at most with a slight mahogany brown tinge.

Among the deep-sea species of *Serolis* the eye is entirely absent in *Serolis antarctica*; its place, however, is occupied by a small tubercle not more than 1 mm. in extent, on either side of the cephalic shield; the posterior border of the latter in consequence is more regular, and the postero-lateral projections which correspond to the eyes are but slightly marked; the two tubercles have the same microscopic structure as the rest of the chitinous integument, and show no traces of facets; their interior is filled with a plug of connective tissue, in which no vitreous bodies or retinal elements could be detected. In *Serolis gracilis*, another deep-sea form, the eyes present some curious peculiarities. In two specimens the eyes are well developed, though small, and resemble entirely the eyes of *Serolis bromleyana*; they are conspicuous from their whitish colour, which contrasts with the surrounding integument; in one specimen the ocular protuberance is only partly occupied by the optic tissues, the rest being exactly similar in colour to the general integument of the body; in another specimen there is no trace whatever of any optic structures, though the oval-shaped elevations of the eye are present but dark bluish in colour like the rest of the integument. In this species, therefore, the eye seems to be just on the verge of disappearance.