

are several rods inserted into the same cell-area. In figs. 14 and 21, moreover, we find large light spots in the pigment, neither in size nor position suggesting sections of the rods, which in both cases are narrow. Here I believe we really have nuclei, and in fig. 18 one or two of the nuclei figured also appear to belong to the pigment-layer. In Pl. XXXIVA. fig. 1 we have a most remarkable appearance, part of this layer being practically devoid of pigment.¹ In this colourless spot we find a small nucleus, which would doubtless have escaped observation in the normal pigmented condition.

Immediately outside the pigment we have a layer of nucleated columnar cells, varying in length according to their situation, becoming shorter towards the periphery of the retina. The inner end of each is, as it were, crowned by a deposit of the pigment-layer, while the outer end tapers off and is continued as a nerve-fibre. I have never seen proof of a direct connection between this cell and the outer end of a rod. If such a junction exist, as is supposed by Greeff, it is concealed by the position of the pigment deposit. The large globular masses of pigment near the periphery of the retina have well-marked columnar cells connected with each (Pl. XXXIIIA. figs. 11, 16, 17, 18), but these do not appear to have any connection with the layer of nerve-fibres. Where there are no darker aggregations in the pigment-layer, as described above (figs. 16, 18), we find nuclei but no columnar cells. At intervals among the columnar cells we find clear, highly refracting tapering bodies, each resting by its base on the pigment-layer. Their fine terminal processes can be traced quite half-way through the columnar layer. I consider them to be of the nature of a supporting connective-tissue like the Müllerian fibres of the vertebrate retina (Pl. XXXIIIA. fig. 16; Pl. XXXIVA. figs. 1, 3, 4). They are possibly processes (?) of the cellular membrane forming the pigment-layer.

Measurements.

Diameter of lens,	0.32 mm.
Length of rods,	0.028 to 0.07 mm.
Breadth of rods,	0.004 to 0.012 mm.
Thickness of cortex of rods,	0.0008 to 0.0012 mm.
Average thickness of pigment-layer at insertion of rods,	(about) 0.008 mm.
Pigment-aggregations of rods,	0.0045 mm.
Thickness of peripheral pigment-layer,	0.02 mm.
Diameter of large peripheral pigment-balls,	0.012 mm.
Ultimate pigment-granules forming latter,	0.001 × 0.0005 mm.
Length of columnar cells of retina proper,	0.06 to 0.1 mm.
Length of columnar cells near periphery,	(about) 0.06 mm.

¹ Several sections passing through this non-pigmented area were cut consecutively and lie in proximity on the same slide. Of all the sections of the retina of species of *Alciopa* that I have made and examined, this is the solitary example of such a condition, and I am inclined to think that we have really here to deal with a congenital abnormality, occurring in this individual.