

*β. Histology.*(1) *The scales.*

The scales have been described by Dr. Günther elsewhere in this Report, they do not show any peculiarity so far as their histological structure is concerned.

(2) *The pigmented membranes.*

The pigment does not form a perfectly continuous layer, but appears in patches, which lie pretty close together so that these membranes have a dotted appearance. They surround the scales on all sides (Pl. LXXIII. figs. 61, *l, m*, 62, *c, f*).

(3) *The light-reflecting membrane.*

The outermost layer of the scales is a very thin light-reflecting membrane, which appears in sections as a narrow dark line only, it is closely attached to the pigment-membrane below it (Pl. LXXIII. figs. 61, *n*, 62, *b, f*). When seen from the surface (Pl. LXXIII. fig. 54) it appears to be composed of two systems of very fine parallel threads crossing each other nearly at right angles. This structure is exceedingly minute and becomes apparent only under a very high power, and it seems probable that the silvery lustre which these membranes exhibit is produced by this structure.

(4) *The phosphorescent organ.*

The elongate spindle-shaped phosphorescent organ above mentioned appears to be connected with the tissue below by a comparatively slender canal, which passes through an oblique perforation in the scale. It is rich in bloodvessels and consists essentially of two parts. In the lower portion we find numerous and large bloodvessels, whilst between these and outside of them very elongate radially extending cells are situated, which reach from the base of the organ to the surface. Here they are curved so that their distal portion extends tangentially. These cells are mostly spindle-shaped, granular, and contain a nucleus in the centre, and between them comparatively wide transparent spaces are observed. It seems that these spindle-shaped cells are not in contact, but divided from each other by a hyaline substance. The outermost layer of the organs is as usual more granular than the remainder. In the middle of the organ these spindle-cells are vertical to the surface, but near the margin they curve outwards. At the base of the spindle-cell layer irregular ganglion cells are found. The whole organ is raised above the surface of the scale, but it is covered and protected from the outside by the above mentioned membranes.