

b. Structure.

The patch is about 3 mm. long, and 2 mm. broad, with a slightly irregular lobate outline. Structurally it resembles very closely the irregular organs on the sides of the body of *Astronesthes*. It consists (in the only specimen which I was able to examine) of a granular mass containing very many small nuclei which stain deeply (Pl. LXXIII. fig. 46, *a*). Outside, the organ is covered by a thin epithelium (Pl. LXXIII. fig. 46, *e*). In the granular mass of the organ a few comparatively large, irregular cells, with two or more processes, are found, and these contain larger nuclei than those scattered in such abundance throughout the whole of the mass (Pl. LXXIII. figs. 47, 48). The organ is traversed by threads placed perpendicularly to the surface (Pl. LXXIII. figs. 45, *b*, 46, *b*). These threads are attached to the flat base by broad trumpet-shaped extensions, and taper towards the upper end, which lies just below the surface. They consist chiefly of a tough cartilaginous supporting rod and a large bloodvessel; nerve fibres are also found in them. The floor of the organ consists of a thick structureless cuticle (Pl. LXXIII. fig. 46, *c*) overlying the ordinary superficial pigment layer of the skin (Pl. LXXIII. fig. 46, *d*). This structureless cuticle is continued, rapidly becoming thinner, some distance up the vertical threads which penetrate into the organ.

c. Function.

The state of preservation of the specimens at my disposal does not permit me to draw any very definite conclusion from the structure in regard to the function of the organ. In colour and general appearance it resembles very closely other undoubtedly phosphorescent organs of fishes.

11. Suborbital glandular organs, without reflector.

a. Distribution.

These organs are found in *Astronesthes niger* and *Opostomias micripnus*, in both of which they occupy the same position, being situated on the upper jaw just below the eye. As, however, they structurally differ very much in these two species, it will be best to describe them separately.

b. Structure.

(1) *Astronesthes niger*.—In this species we find five phosphorescent patches of an irregular glandular nature on the head, one (Pl. LXIX. figs. 1, *d*, 11, *a*) being situated in the median line between the eyes. The other four (Pl. LXIX. figs. 1, *e*, *e'*, 11, *b*, *c*)