

## PLATE LXXII.

### Figs. 34-41. *Opostomias micripnus*.

Fig. 34. Median section of a lenticular white dorsal phosphorescent organ. × 80.

Fig. 35. Median section of another lenticular organ, showing incipient fission. × 80.

Fig. 36. Transverse section of the distal part of the anterior ray of the pectoral fin, which is prolonged to form a barbel. × 100.

Fig. 37. Median section of a hemispherical white dorsal phosphorescent organ. × 80.

Fig. 38. Median section of a black dorsal phosphorescent organ. × 80.

Fig. 39. Head in profile, from a spirit specimen; natural size.

*a*, Dorsal phosphorescent organs (simple); *b*, superior lateral line of compound phosphorescent organs; *c*, inferior lateral line of compound phosphorescent organs; *d*, suborbital phosphorescent organ; *e*, barbel attached to lower jaw; *f*, barbels formed by the first ray of the pectoral fins.

Fig. 40. Longitudinal section of the suborbital phosphorescent organ. × 100.

*a*, Outer skin; *b*, external radially striped part; *c*, gland-tubes; *d*, nervus phosphorius.

Fig. 41. Section of the suborbital phosphorescent organ. Portion of the external radially striped part, shown in fig. 40. × 800.

*a*, Gland-tubes of the interior; *b*, membrane dividing the outer layer from the inner glandular part; *c*, layer of ganglion cells; *d*, phosphorescent cells; *e*, long and slender cylindrical supporting cells between them; *f*, outer surface.

### Fig. 42. *Echiostoma barbatum*.

Fig. 42. The brain in profile. × 4.

*a*, Spinal cord; *b*, and *c*, cerebral nerves; *d*, nervus acusticus; *e*, nervus trigeminus; *f*, nervus facialis; *g*, nervus phosphorus (part of the trigeminus); *h*, nervus oculomotorius; *h'*, nervus opticus; *i*, nervus olfactorius; *k*, cerebellum; *l*, lobus opticus; *m*, lobus phosphorius.

### Figs. 43, 44. *Scopelus benoiti*.

Fig. 43. Vertical section of the single compound dorsal phosphorescent organ shown in fig. 44. × 1000.

*a*, Long and slender peduncle of the phosphorescent cell; *b*, nucleus of the phosphorescent cell; *c*, large oval vacuole outside the nucleus; *d*, slender cylindrical supporting cells; *e*, granular cells with indistinct outlines (ganglion cells); *f*, very distinct nuclei of the ganglion cells; *g*, outer surface clothed with flat epithelium.

Fig. 44. Vertical section of the exposed part of the single compound dorsal phosphorescent organ. × 80.

*a*, Outer surface with flat epithelial cells; *b*, granular mass of ganglion cells, with distinct nuclei; *c*, phosphorescent cells; *d*, reflecting layer of spicules; *e*, blood-vessels extending up into the masses of phosphorescent cells; *f*, nerves extending downwards from the external ganglion cell layer; *g*, layer of tissue with numerous blood-vessels; *h*, pigment coat.