

The question of the homology of the luminous organ and its covering lamellæ is still obscure; and no other specimen can be sacrificed to investigate the osteology of the skull. If, as Professor Moseley's investigations seem to prove, the luminous organ is not a modification of the eye, as Mr Murray and myself supposed at first, and if the organ of vision with the optic nerve has disappeared, the luminous organ is probably the homologue of that which is found in some Scopelids between the eye and nostril, and the covering plates would be the homologues of the præorbital membrane bones. With the abortion of the eyes the luminous organs with their præorbitals would have moved from their usual lateral position to the top of the head.

*Ipnops murrayi* (Pl. XLIX. fig. B).

*Ipnops murrayi*, Günth., Ann. and Mag. Nat. Hist., 1878, vol. ii. p. 187.

B. 12. D. 10. A. 13. P. 14. V. 8. L. lat. 55.

Body elongate, cylindrical, tail compressed behind, head depressed. The depth of the trunk diminishes but little backwards, and is contained thirteen and a half times in the total length, without caudal; the length of the head is one-sixth of the total. Head broad, much broader than deep, its greatest depth being two-thirds of its length. Snout broad, much depressed, with obtusely rounded anterior profile; cleft of the mouth very wide, the maxillary moderately dilated behind and extending beyond the middle of the length of the head. Mandible projecting beyond the upper jaw, broad, but owing to the depressed form of the snout its outer surface is nearly entirely at the lower side of the snout. Infraorbital chain of bones very narrow, wedged in between the transparent lamina and the maxillary, with four very distinct apertures leading into the mucous duct. The upper surface of the head, including the snout, is wholly covered by the two cornea-like laminæ of the luminous apparatus. They are closely attached to each other along the median line, each being divided by a shallow transverse ridge into a larger anterior and a smaller posterior portion. The ridge turns forward near and parallel to, the median line, and marks the course of a superficial mucous duct.

The gill-laminæ are well developed and the gill-rakers long, needle-shaped, closely set, about twenty-two in number on the outer branchial arch.

The vent is nearly twice as distant from the root of the caudal fin as from the end of the snout, and rather more than the length of the head from the gill-opening; it is placed between the ventral fins.

The dorsal fin commences immediately behind the vertical from the vent; it is short, but its longest rays are twice as high as the body. Origin of the anal midway between the vent and the root of the caudal, composed of rays which are still more slender and shorter than those of the dorsal. Caudal fin narrow, subtruncated, more than half as long as the head. Pectorals rather feeble, lateral, as long as the caudal, and extending to the