

families Sternoptychidæ and Scopelidæ only, viz., *Gonostoma* (*Gonostoma denudatum*), *Argyropelecus*, *Sternoptyx*, *Polyipnus*, *Photichthys*, *Scopelus* and *Nannobrachium*.

5. More or less diffuse patches of a white glandular substance of varying thickness are found.

a. On the side of the trunk in *Astronesthes*.

b. On the dorsal or ventral sides of the caudal peduncle in *Gonostoma* and *Nannobrachium*.

c. On or near the clavicle and more or less within the gill-cavity in *Sternoptyx*, *Opostomias* and *Halosaurus*.

d. Above the maxillary in the infraorbital region in *Gonostoma* and *Photichthys*.

e. On the top of the snout or in front of the eye in species of *Melamphaës*, *Melanonus* and *Scopelus*.

f. On barbels in *Linophryne*, *Stomias*, *Opostomias* and *Idiacanthus*.

g. On fin rays in *Melanocetus*, *Chaunax*, and *Himantolophus reinhardtii*.

6. In this group these large glandular masses are differentiated, forming a rounded, more or less oval mass lodged in a cavity of the infraorbital region (as in 5, d), viz., in *Anomalops*, *Echiostoma*, *Opostomias*, *Pachystomias*, *Photonectes*, *Malacosteus*, *Idiacanthus*, *Astronesthes*.

7. The luminous apparatus of the dorsal fin is differentiated, representing a cavity with an aperture from which a tentacle or filament may be exerted. This form is found in Pediculates only, such as *Himantolophus*, *Aegæonichthys*, some species of *Ceratias*, *Oneirodes* and *Linophryne*.

8. The luminous organs of *Halosaurus* differ from all those enumerated, inasmuch as they are arranged on the body in a single series which is lodged on the scales of the lateral line; on the head they follow the lower branches of the muciferous canals; in fact, they are situated in them. The organs have also a peculiar diamond-shape, and nearly all lie below, but free from, the semitransparent integument of the body.

9. The cephalic organ of *Ipnops*, the genetic relations of which are still obscure, although there can be no doubt as to its function.

The disposition of all these organs will be more fully noticed in the following pages, and a complete account of the histology of the more important forms will be given by Professor Moseley and Dr. von Lendenfeld in the Appendices at the end of the Report.

Light-producing organs are very generally distributed in the abyssal fauna, and those parts of the depths of the ocean in which phosphorescent animals are abundant must be sufficiently illuminated to enable such of them as are provided with well-developed eyes to perceive objects with as much distinctness as do the pelagic forms which sport at the surface at night, and are dependent on the light of the moon and stars and the general phosphorescent light around them. There is no doubt that fishes contribute