

as they are large and striking in appearance, they strongly characterise the species which possess them.

In the different species they are distributed as follows:—

Argyropelecus hemigymnus.—A row of six anterior to the pectoral fin, a row of twelve ventral, close to the median plane of the body, and three groups on the sides, in the vicinity of the anal fin. The groups are formed by the breaking up of the two lateral rows of phosphorescent organs observed in other fishes, the upper row furnishing three, and the lower two groups. All the organs point downwards.

Sternoptyx diaphana.—A row of nine large organs on the ventral side, close to the median plane, representing the lower row, and two groups of three organs in each, above, on the side, representing the upper row (Pl. LXX. figs. 15, 17). All point downwards.

Scopelus benoiti.—One organ in the middle of the back, behind the dorsal fin, pointing backwards. The organs of the lateral rows have retained their original shape and distribution.

Scopelus, other species.—I cannot give an account of the distribution of these organs in other species, as Leydig does not specially mention these peculiar unpaired organs behind the dorsal fin which are so characteristic of *Scopelus*. Sometimes there are more organs than one in that locality, in some species as many as five, one behind the other, and they always point backwards.

Gonostoma denudatum.—In two lateral rows like the composite organs without reflectors (Leydig).

b. Structure.

a. General.

The structure of these organs is more complicated than that of the organs without reflectors, and there are very essential differences between the two, although they are similar to a certain extent in shape, and formed on the same principle. They may be single and isolated, as for instance the organs on the back of *Scopelus benoiti*, here designated "stern-chasers"; the rule, however, is that several are placed together, with their sides in contact, and that their spherical interior portions coalesce to a certain extent. Such a coalescence of course produces a canal, from the outer side of which the cup-shaped portions of the organs project (Pl. LXX. figs. 17, 18, 20). Such structures are never produced by the union of phosphorescent composite organs without reflectors. These organs with reflectors are always very oblique, so much so that the axis is inclined towards the surface of the fish at an angle, never exceeding 10°. Generally this angle is smaller and the axis often appears nearly parallel to the surface. The spherical portion is more elliptical than in the organs above described, and appears sac-shaped.