Zoology Part LVII: Report on the DEEP-SEA FISHES. By Dr. Albert Günther. Bound in Volume 22,1887.

The paraboloid cups are in a very slanting position. And as they meet the surface very obliquely, the outline which is the intersection of the cup, and the surface appears as a very elongate ellipse. The ventral organs which lie at the extremity of the body in the median line have a circular outline, because they are situated close to the ventral margin of the laterally compressed body.

These ellipses are very conspicuous; they appear surrounded by a dark line of pigment, whilst they shine with a brilliant silvery lustre in the centre. They measure 1 to 2 by 3 to 6 mm. in diameter. A dark mass—the pigment coat of the sac-shaped portion—is attached to one end and looms through the semitransparent skin of the fish.

The two rows of ventral organs of *Argyropelecus* and also of *Sternoptyx* approach each other so closely in the median line of the body that they are nearly in contact (Pl. LXX. fig. 17). Their orifices (Pl. LXX. fig. 19), therefore, appear nearly square, the cups becoming by mutual compression prismatically four-sided in their outer portions.

In external appearance there is a great difference in these organs, although the internal structure is the same in all. Four varieties may be distinguished.

(1) *The organs of Gonostoma.*

These have been studied by Leydig.[1] I have not seen any specimens of this genus; but they do *not* coalesce like the other varieties and resemble more the composite phosphorescent organs without reflectors. They are smaller than the other varieties and not so oblique. Leydig gives no detailed description of their shape.

(2) *The dorsal organs or "stern-chasers" of Scopelus.*

The sac-shaped portions do not coalesce, and the constriction dividing the sac-shaped and cup-shaped portion is very conspicuous, it is circular and has a diameter of 0·3 mm. The axis is nearly parallel to the surface. The cup-shaped portion is a rotation-paraboloid with very small focal length, about 0·1 mm. The cup terminates on the surface with a very elongate, elliptical contour measuring 1 by 4 mm., and the posterior margin approaches the constriction to within 0·2 mm. The sac-shaped proximal part of the organ is elongate, conical, tapering towards the rounded end, and widest just below the constriction, where it has a width of nearly 1 mm. It is 2·5 mm. long.

The sizes vary according to the species; the more numerous these stern-chasers are, the smaller they appear to be. The largest are possessed by those species which have only a single one.

The proportions are always as indicated by the above numbers, and the shape of the organ is constant.

[1] F. Leydig, *loc. cit.*, p. 12.

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