

layer of narrow transparent rods present in the accessory eye of *Stomias anguilliformis* as figured by Ussow¹ (Tab. ii. fig. 10, b); but the component rods here, as in all allied organs of fishes as yet described, have no hexagonal terminal nucleated cells attached to their extremities. Moreover, the hexagonal cells (?) forming the layer beneath the rods are in *Stomias* filled with iridescent rod bodies ("Flitterchen" of Leydig), forming what Ussow, who holds the organs to be eyes, calls a tapetum; whilst in the case of the organs of *Ipnops* no such iridescent layer is present, but only in its place a layer of hexagonal pigmented nucleated cells exactly like that occupying a similar position in the corresponding organ of *Chauliodus sloani* (Ussow, *loc. cit.*, Tab. ii. fig. 8). In this organ of *Chauliodus*, however, the rod-like bodies bear scarcely any resemblance to those of *Ipnops*, being immensely long, with one extremity club-shaped and the other drawn out into a fine filament. A still more important difference is the absence of any trace of the lens-like bodies present in the organs both of *Chauliodus* and *Stomias*. There seems to be no trace at all of the iridescent structures in *Ipnops*. Leydig appears to question the accuracy of Ussow's determination of the polygonal pigmented objects as cells in every instance,² but there can be no doubt that the bodies forming the layer beneath the rod layer in the organs of *Ipnops* are cells, since they have a well-defined nucleus, which may be well stained with carmine. On the whole, though the organs of *Ipnops* show to some extent corresponding structure to the "augenähnliche Organen" of Leydig it is evidently rather with the two other groups of his classification (Leydig, *loc. cit.*, pp. 64, 70, 73), the "Glasperlen-ähnlichen Organe" and the "Leuchtorgane," that they are most closely allied. The former are described as slight plate-like depressions of the outer skin surface with a dome-like transparent roof, with the following structure in all species. An outer brown pigmented capsule, a layer with a metallic iridescence, a connective tissue gelatinous body, nerves and blood-vessels. In many species there is present besides a spindle-shaped string or plate of homogeneous granular constitution.

The organ in *Ipnops* possesses the nerves though apparently not so richly developed, the blood-vessels and the brown pigmented capsule, and a representative of the layer with the metallic glance, in the hexagonal pigmented cells devoid of such glance. It has no trace of a gelatinous body, but the spindle-shaped string or plate may be represented in it by the rod layer. In the glass-bead-like organs of *Scopelus rissoi*, the plate shows a striate arrangement of its component granules (Leydig, *loc. cit.*, p. 45).

Leydig examined the two pairs of phosphorescent organs on the head of *Scopelus rafinesquii*, but unfortunately for lack of material was unable to make out a complete account of their histology; he, however, convinced himself that their structure is

¹ M. Ussow, Ueber den Bau der sogenannten augenähnlichen Flecken einiger Knochenfische, *Bull. Soc. des Naturalistes de Moscou*, 1879.

² Leydig, Die augenähnlichen Organe der Fische, Bonn, 1881, pp. 71, 72.