

With the naked eye they can be recognised as white granules in the incision between the two ocular marginal lobes. Each rhopalium consists of a conical basal part, the sense knob, of a large sense vesicle on the axial side of the knob, and of a sense fold or protective scale which is placed at the distal end of the sense knob and surrounds the auditory club as well as the eye (comp. Pl. XVIII. fig. 2, seen from the inside, axial side; fig. 3, seen from outside, abaxial side; fig. 4, seen in profile; fig. 5, seen half from the inside, half in profile). The sense knob corresponds to the basal part of the greatly shortened and thickened tentacle, from which the whole sense club is phylogenetically derived. It projects between the bases of its two constituent sense lobes, is usually conical in shape, and bears the large spheroidal or oval sense vesicle ("ampulla rhopalaris," *oa*), a cæcal arching outwards of the sense pouch (*bo*) on its inner or axial side. Just under the ampulla the sense knob is constricted like a neck and surrounded by the large, darkly pigmented sense collar (*op*). The latter forms an ectodermal swelling, with a thick accumulation of brown or dark pigment and has quite the shape of a high coat collar, which closes round the neck of the sense knob on the abaxial (external or dorsal) side, whilst it falls obliquely on the axial (inner or ventral) side, and passes into two lateral symmetrically-placed lapels (figs. 2, 3, *op*). The two lapels of the sense collar are divided from one another by a deep, broad furrow, which is only bridged over below at the distal margin of the collar by a narrow cross bar of pigment. An unpaired axial eye with lens (*oc'*) and pigment cup appears to lie in the depth of the furrow between the end arms and the pear-shaped auditory club (*ok*), the distal end of the acoustic tentacle rises on a thin stalk immediately below it. The auditory club is white, and consists of an axis of endoderm cells, the last of which forms a large spheroidal otolite sac, closely filled with numerous small prismatic crystals (*ol*). The ectodermal covering of the auditory club bears auditory hairs which project freely into the niche of the auditory scale (*os*). The latter forms a protective scale, oval or triangular in shape, arched convexly outwards, concavely inwards, so that it surrounds the auditory club as a protection from the abaxial (external) and distal (lower) side. Two eyes containing a planconvex or biconvex lens in the midst of a cup of brown or black pigment (?) appear placed inside the niche of the scale (*on*) on the abaxial side of the auditory club (between the otolite sac and the sense collar). All these conditions could, unfortunately, only be indistinctly and incompletely recognised in the poorly-preserved spirit-specimen, so that it was only by aid of comparison with the sense clubs of some other *Periphylla* that I was able to draw out figures 2-5 reproduced in Plate XVIII., which can only claim to be approximately or even remotely correct. It may, however, be safely asserted that the sense clubs of *Periphylla* are modified interradial tentacles, which function simultaneously as acoustic and as optical organs of sense; in some respects they appear allied more with the sense clubs of *Charybdea*, in other respects with those of *Nausithoe*. In our species there are probably three small eyes furnished with pigment, lens and nerves