

may be found in some genera of the Dendrobranchiata. In support of this view, I think further evidence can be produced to show that different groups of animals, when placed under similar conditions, tend to resemble one another in certain points of form and structure.

In the Phyllobranchiata the ophthalmopoda are generally short and pear-shaped, and crowned by a hemispherical ophthalmus composed of well-formed and numerous lenses, radiating above a floor of black pigment. The margin is sharply defined as a straight line on the inner, anterior, and outer surfaces, but is hollowed or concave on the posterior side, and in this hollow there is almost invariably present a well-formed pigmented ocellus, sometimes detached (Pl. CXXVI. fig. 6), but more commonly more or less in contact with the margin of the ophthalmus, and sometimes so closely united with it that it can only be traced as a slightly elevated and circular body within the surrounding pigment of the ophthalmus (Pl. CXXVI.), but in this case the facets of the latter form a distinct system of their own, being generally of less size and corresponding in position to their smaller circumference. These have, moreover, a series of lenses that in character appear to resemble those of the ophthalmus, but they are smaller in size, shorter, and therefore proportionately stouter in comparison to their length; a circumstance that would necessarily give them a different extent of visual range.

The position of this organ is such that it can only be brought into use under certain conditions, namely, first, when the ophthalmopoda are erect the ophthalmus has a range of vision in front, above, below, and at the sides, but only partially behind, so that the animal is blind to any danger that may reach it in the line of its own dorsum; second, when the animal is at rest, with the ophthalmopoda lying ensconced in the hollow in the first joint of the first pair of antennæ, where it is frequently covered more or less perfectly by numerous hairs, the ocellus alone is in a position to enable a watch to be kept.

Mr. John Murray has suggested that these, like the ocelli found on the body and appendages of some Schizopods, are phosphorescent organs, and although I have adopted this explanation in the body of this Report, I am induced from examination of the structure and consideration of the position of the organs to believe that they are probably useful as organs of vision under the previously suggested conditions, as I find this structure differs from that of the ophthalmus only in degree and not in character.

Besides the two compound eyes there exists a small unpaired organ in the median line, which is one of the earliest structures to appear in the embryonic life of the Macrura. It appears as a patch of black pigment in the median line of the frontal neural mass, which ultimately becomes the anterior or optic ganglia of the group that form the cephalic mass, and out of which the future ophthalmi are developed. It also exists in most of the Copepoda and in the early stages of many if not all the Macrura. It may be seen in the later embryonic stages of most of the Macrura, but appears to be lost in the Zoea stage when the ophthalmi assume their functional power, but in those forms in which the