

externally as a small dentiform projection, and fringed at the outer edge with a row of ciliated bristles. Both terminal plates are very slender, the outer, however, being somewhat broader than the inner, and of an oblong-linear form, with the outer edge naked and straight, and terminating as a very small dentiform process, the apex narrowly truncate, and, in common with the whole of the inner edge, having a row of long, ciliated bristles. The inner plate is exceedingly narrow, conically tapered, and fringed throughout with similar bristles. The length of the plates with respect to each other, as also to the telson, varies somewhat in the different species, thus affording a comparatively good specific criterion.

Luminous Globules.—These peculiar organs, for which I would suggest the above designation, have not escaped the observation of earlier zoologists, and in part have even been closely examined and described, most accurately by Professor Claus.¹ In living examples they are very conspicuous, and also in spirit-preserved specimens they admit of being readily detected on dissection. The view generally favoured regarding the function of these organs is, as is well known, that in some way they are subservient to sight, whence they have been named by most authors “accessory eyes.” I have carefully examined these organs both in spirit specimens and in the living animal, and have been led to form a very different opinion, conceiving them to have nothing whatever to do with sight, but merely representing highly differentiated luminous organs. The reasons on which I base such an assumption will be set forth in the sequel. I shall first describe the organs under consideration as they occur in the genus *Euphausia*.

In all the species of this genus, as also in most other Euphausiidae, they appear as small globules, very conspicuous in the living animal by reason of their beautiful red pigment and glistening lustre, and are symmetrically arranged both on the anterior and the posterior divisions of the body. On the trunk are observed (see Pl. XI. figs. 1, 2) two pairs of such globules, the one situated within the coxal joint of the first pair of legs (see Pl. XII. fig. 16), the other within a corresponding dilatation issuing from the base of the penultimate pair of gills (see Pl. XI. fig. 9). On the tail they occur along the ventral face, in the median line, between the bases of the pleopoda, each of the four anterior segments having a single globule. In addition to the above mentioned globules may be observed, as stated above, within the pedicle of the eyes, an organ of somewhat similar appearance, though less completely developed (see figs. 7, 8). With the exception of this last organ, all the others would seem to exhibit precisely the same structure. Those most easy to examine without dissection are the hindmost pair on the trunk (Pl. XI. fig. 10), as they lie in a position altogether external, immediately beneath the inferior margin of the carapace. On placing the living animal under the microscope, and applying a slight pressure by means of a cover-glass, in order to arrest its movements, these organs admit of being examined through a comparatively powerful

¹ Ueber einige Schizopoden und niedere Malacostraken Messina's, *Zeitschr. f. wiss. Zool.*, Bd. xiii. pp. 446, 447, 1863.