The numerals indicate the order of formation of cleavage-segments.

Fig. 1. Egg. in the chorion sack, fresh. Zeiss, 4. B.

Fig. 2. 4 blastomere stage, from the vegetative pole, fresh. A, left anterior blastomere; B, right anterior blastomere; C, right posterior blastomere; D, left posterior blastomere. Z., 4. B.

Fig. 3. 24 cell stage; from the animal pole, fresh. Z., 4. B.

Fig. 4. Segmentation of entomesoderm cell at the 28-cell stage; transverse section. Z., 4. D.

Fig. 5. Segmentation of fourth and seventh generation of micromeres; from the vegetative pole, horizontal section. Z., 4. D.

Fig. 6. A stage before division of the *Urmesoderm*; from the vegetative pole, horizontal section. Z., 4. D.

Fig. 7. Segmentation of *Urmesoderm* and of entodermic macromeres; from the vegetative pole. Z., 4. D.

Fig. 8. The same stage, transverse section. Z., 4. D.

Fig. 9. Formation of the first mesoderm cell; from the vegetative pole, horizontal section. Z., 4. D.

Fig. 10. The same, transverse section. Z., 4. D.

Fig. 11. A stage with three germinal layers established, sagittal section. Z., 4. D.

On Two New Hexactinellida from Sagami Bay.

By I. Ijima, *Ph. D.*

EUPLECTELLA MARSHALLI, n. sp.

A few miles off Cape Sunosaki in Prov. Awa, from a depth of 100-150 fathoms and a bottom of gravels and shells, I have collected over a dozen specimens of an apparently new Euplectella, to which I herewith propose the name of *E. Marshalli*. In fresh state, they were of a soft salmon-pink color.

The shape of the body may best be compared to that of a lamp-chimney, broadest at the lower half and more or less narrowed superiorly. The upper end is terminated by a hemispherically arched sieve-plate; the lower end is also closed by a thin perforated plate (lower sieve-plate). Body-dimensions of a representative specimen as follows: length 145 mm., greatest breadth 59 mm., breadth at the collor 35 mm., height of the upper sieve-plate vault 18 mm. It seems the present species never attains a size much exceeding the above dimensions. In cross-section, the body is circular. The basal tuft, whose fibres emanate from the body-wall at the periphery of the lower sieve-plate, forms a thick bundle as long as or longer than, the body proper. The body-surface between the parietal gaps, which measure 2 mm. in diameter, elevates into prominent knob-like or lappet-like protuberances or into intersecting ledges which may run either somewhat after the manner of *E. aspergillum* or in such a way as to form a rectangular meshwork, each mesh being deeply depressed and with a parietal gap at the bottom. Such prominences may attain a height of 11 mm. and give a very corrugated appearance to the sponge. Around the upper sieve-plate, there is a circular ledge, forming a cuff, whose irregular edge is always directed more or less superiorly.

With respect to spicules, the present species closely agrees with *E. Owcni*, in the fact that they remain unfused and in having so-called compass-needles around the parietal gap, not to mention other points of similarity. In fact, I do not know yet of any distinctive character either in shape or in kind of spicules between the two species. In *E. Marshalli* I find that graphiohexasters, which had never yet been described from *E. Owcni*, are of common occurrence; but I have reasons to believe that that form of spicules is not altogether absent in the latter species.

I have, to compare with, a few specimens of *E. Owcni*, the habitat of which I have ascertained to be Genkai Sea, somewhere between Tsushima and Kyushyu. These, as also Marshall's original descriptions (Z. f. wiss. Z. Bd. 30. Suppl.), show several important points of con-

trast to *E. Marshalli* with respect to their dimensions and general configuration of the body. Hence notwithstanding the above-mentioned agreement in spicules, I have considered it expedient to separate the two forms. At least the new form is to be considered as a well differentiated variety of the form found in Genkai Sea. It is needless to mention that *E. Marshalli* is at once distinguishable from *E. imperialis* Ij.

HYALONEMA OVATUM, n. sp.

While examining the *Hyalonema* of Sagami Bay, I recently came across a form which must be erected into a new species.

H. ovatum is represented in my collection by three small, rather mutilated specimens preserved in alcohol. Two of them were collected by myself, midway between the little island of Hashima and the headland of Manazuru on the eastern coast of Province Izu, from a muddy bottom and a depth of about 250 fathoms. At this locality they were the only Hyalonema I could obtain. The remaining one specimen was brought to me by my collecter, together with a number of young *H. apertum*, from the neighbourhood of Okinose, under which name the submarine plateau extending westwards from Cape Sunosaki, is known. Macroscopically all my specimens present little or no specific characteristics, so that they had long been included among young specimens of *H. apertum*, until I came to examine their spicules in detail. Nevertheless there can be no doubt of their close affinity to the species just mentioned.

The sponge-body is egg-shaped, broadest near the upper end or at about the middle. Length of body in my largest specimen, 28 mm.; length of the exposed basal tuft in the same specimen, 85 mm.; breadth of the same just below the basal pad, 3 mm. The tuft-fibres are not twisted, nor is any Palythoa present. It is probable that I have only young specimens, whose tuft, on further growth of the body, would acquire a Palythoa-investment and gradually become twisted, as I know is the case during the development of *H. apertum*. The gastral opening at the superior end is very narrow and unfurnished

with a sieve-plate. It almost directly communicates with efferent canals, hardly leaving a common gastral cavity. In one of my specimens, the cones centralis projects considerably out of the gastral opening; in others I find no trace of a central cone. Of the different spicules, the following may be mentioned as principal distinctive points of the present species:

Dermal pinuli, shaped as in *H. apertum*, but somewhat shorter, not exceeding 0.12 mm. in height, while the basal cross has comparatively long and slender arms (0.35 mm. from the centre). The subdermal framework is formed exclusively of pentacts, the tangential rays of which measure 0.15—0.22 mm. in length and combine to form a tolerably regular, rectangular network. The parenchymals are mostly medium-sized hexacts with comparatively few diacts. The so-called microhexacts have slender straight arms, .05—.09 mm. long, that are almost smooth but prove to be slightly rough under high magnification. Macramphidiscs present the most characteristic feature. They may attain a length of 0.52 mm., furnished with 6–7 rayed, semi-ovoid umbels 0.14 mm. broad and 0.12 mm. long. Their axial shaft is entirely smooth or is occasionally furnished with a few tubercles. Mesamphidiscs were not found, but micramphidiscs of ordinary appearance are present in abundance. Anchors of the root-tuft 4 teethed.