

Genus **Bathyplores** ÖSTERGREN 1896.7. *Bathyplores golden-hindi*, sp. n.

(Pl. II., figs. 16—17; textfig. 6).

Specimens examined:—

Sci. Coll., Spec. No.	Number of individ- uals	Preser- vation	Locality	Depth in <i>hiro</i>	Collector	Date
1479	1	Alc. Glyc.	Uraga Channel, north side, Takeyama in line with Amezaki.	330	Mitsukuri & Aoki	Aug. 27, 1903.
1480	1	"	"	330	"	Aug. 28, 1903.
1481	1	Alc.	"	330	"	"

*Description*:—This beautiful and striking holothurian is given in natural color and size in Pl. II., figs. 16—17. The body is subcylindrical; dorsum convex and ventrum flat. In active life there is probably some slight marginal border; when the sketch was made this was no longer well-marked except at the anterior and posterior ends, but its place was marked by a single series of large transparent papillae which went around the whole body. These papillae were of about the size given in the figures, the largest being about 6 mm. in height. At the time of capture, all were larger and are said to have made a beautiful row. The series went anteriorly dorsal to the mouth and posteriorly ventral to the anus. At a little over one-fifth of the entire body length from the anterior end, the body was on the sides slightly constricted as in a neck, separating the anterior head-like portion from the rest of the body. This did not seem like a temporary constriction produced by contraction of the circular muscles, but to

be a permanent feature of the body configuration. However, it is lost in the preserved specimens. Ventrally, the median ambulacrum is entirely naked. It was already marked, when the sketch was made, by a deep groove as in the figures. A zone of light yellow pedicels, forming two irregular rows, was found on each side inside the series of marginal papillae. The pedicels were ascertained by means of sections to belong to lateral ambulacra. Anteriorly, they stopped at the neck-like constriction, and did not extend into the head-like portion.

Dorsally the papillae, which were all of a fairly uniform size smaller than the marginal papillae, appeared to be irregularly distributed in two longitudinal zones, each corresponding to one of the dorsal ambulacral fields. In each zone, the papillae were in three rows, standing more or less regularly alternate in their positions.

The mouth was distinctly ventral. In it 20 tentacles, each with transparent stem and brown crown, were found. They seemed all uniform in size, i.e., there were none marked as ventral by their small size. The anus was distinctly dorsal in position and circular in shape, with somewhat raised rim.

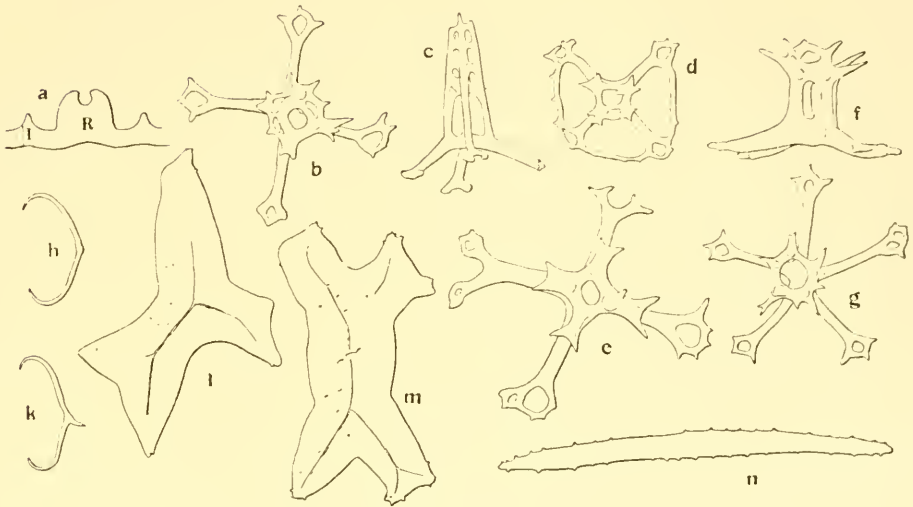
The color of the animal was of a carmine red, deepest in the median dorsal area. It is possible that the whole body was of this deep shade when alive.

Genital bundles two, red-colored and branched. Calcareous ring in one specimen not distinct: in its place there seemed to be some calcareous deposits, but no well formed pieces. In another specimen the ring was imperfect and weakly developed, but the pieces could be made out as shown in textfig. 6 *a*. Polian vesicle one, long, cylindrical, 4 cm. long. Its tip not specially colored. No tentacular ampullae. Respiratory trees tolerably well developed,

both opening separately but close together into the cloaca and extending to about the middle of the body. Their stem large, branches short.

Calcareous deposits consist, speaking in general terms, of C-shaped bodies (textfig. 6 *h, k*) and cross-shaped tables (*b—f*). Of these there are various modifications in different parts (*g, l, m*). In one specimen, the C-shaped bodies are very numerous (0.05—0.09 mm. in long diam.). They lie at about the same level as the cross-shaped bodies. In a second specimen, the C-shaped bodies are scarce in the anterior parts, both ventral and dorsal, so that their presence there was ascertained only after careful searching. They are however rather numerous among the large X-shaped bodies in the posteriormost parts of the ventral surface. In a third specimen, C-shaped deposits are again very scarce, and were found only after a most careful search. Even in this specimen, they are tolerably common among the large and thick X-shaped spicules in the posteriormost ventral parts. There are a few C-shaped bodies in the cloacal wall.—Cross-shaped tables (*b—g*) are somewhat scantily scattered in the perisome. They seem most sensitive to the action of acid reagents. Both ventrally and posteriorly they are of about the same size and shape. The disk of the table consists of four arms, frequently of five (*g*). The ends of two or more arms may be united. On the disk is built a rather badly developed spire, with four pillars and one or two cross-beams. Crown very irregular, with several teeth, spreading out laterally. Both the disk and the spire and crown present various degrees of imperfection. On the whole, the anterior body parts, both ventral and dorsal, possess tables smaller than those in the posterior parts. In the former they are 0.05—0.084 mm. large, while in the latter the larger

ones may exceed 0.1 mm., reaching up to 0.12 mm. in size. In the dorsal papillae, there are found tables with cross beams



Textfig. 6.

*Bathyplores golden-hindii*: a—Calcareous ring; b—g—Tables (c—of dorsal papilla; g—modified to 5-radiate); h, k—C-shaped bodies; l, m—Irregular X-shaped bodies; n—Supporting rod. (b—k and n  $\times$  ca. 270; l, m  $\times$  200). I—Interradialia; R—Radialia.

up to four or five in number (c). In the very posteriormost part on both ventral and dorsal surfaces, the calcareous bodies present striking features. Here among tables of the ordinary sort are found very robust ones as large as 0.2 mm., when measured from one end of a cross-arm to that of the opposite arm. Together with these huge four-armed tables there are, in a layer below them, large irregular calcareous bodies which are fundamentally X-shaped and present all sorts of irregularities (l, m). They are over 0.2 mm. in their longest

diameter. They occur in the posteriormost parts which extend on the dorsal surface about half a centimetre and on the ventral surface about 2 cm., in front of the posterior marginal border. So far as I can ascertain, they are not found in the lateral margins of the body, nor in the marginal border in front of the head. Supporting rods (*n*) are found in the pedicels and papillae. They are large in the ventral pedicels, the smallest measuring 0.38 mm. They are roughened at the ends. In the dorsal papillae the rods are shorter and more slender, being only 0.17 mm. long. Well developed end-plates are found in the ventral pedicels. They are imperfect in the dorsal papillae. I can find none in the marginal papillae.

*Remarks* :—This species is very close to *Bathyploetes rubicundus* SLUTER, but there are some differences :—

(1) The most important difference lies in the presence of the large irregular calcareous bodies in the posteriormost parts of the body in the present species. SLUTER makes no mention of such bodies in *B. rubicundus*. I think it barely possible that SLUTER overlooked these bodies.

(2) In the new species there are 20 tentacles, all alike in size, while for *B. rubicundus* it is distinctly stated by SLUTER that there are only 12 short tentacles, of which the two ventral ones are much smaller than the others.

(3) The color of body in my species is carmine red, while *B. rubicundus*, to judge from the sketch given by SLUTER, is brick red.

(4) The longitudinal muscle is distinctly divided into two in my species, while it is said to be undivided in *B. rubicundus*.

(5) Marginal papillae are much larger than dorsal papillae

in my species, while the contrary is stated to be true in *B. rubicundus*. This may possibly be due to the state of preservation in SLUITER'S specimens.

On the whole, I think, there is no way but to make this a new species. I name it for the yacht "Golden Hind," owned by Mr. A. OWSTON of Yokohama, which was wrecked during a storm in 1903, and whose honorable record in the exploration of the Sagami Sea deserves to be kept in memory by zoological science in Japan.

### 8. *Bathyplores moseleyi* (THÉEL).

(Textfig. 7).

*Stichopus moseleyi* THÉEL 1886a, pp. 165—7, Pl. X., figs. 19, 20.—LUDWIG 1889—92, p. 331.

*Bathyplores moseleyi* ÖSTERGEN 1896, p. 355.—LUDWIG 1898a, p. 8.

*Synallactes* (?) [*Stichopus*] *moseleyi* PERRIER 1902, pp. 339, 349.

Specimens examined:—

Sci. Coll., Spec. No.	Number of indi- viduals	Preser- vation	Size in cm.	Locality	Depth in <i>hiro</i>	Collector	Date
1063	2	Alc.	6	Okinosé Bank, Meru hills all out, Sagami S.	300	Aoki	Apr. 15, 1894.
1453	1	..		Okinosé Bank, inner edge, Ina-line, Saga- mi S.	350	"	Dec. 15, 1894.
1457	1	..		Okinosé Bank, Saga- mi S.	350	"	Dec. 18, 1900.
1458	1	..	2.8	Okinosé Bank, outer edge, Iwado-line, Sa- gami S.	350	"	Feb. 14, 1897.
1459	1	..	3	"	400	"	Mar. 14, 1896.
1460	1	..	3	"	400	"	Jan. 20, 1897.

**PLATE II.**

*Bathyplores golden-hindi*, sp. n.

Fig. 16. Ventral view.  $\times \frac{1}{4}$ .

Fig. 17. Dorsal view.  $\times \frac{1}{4}$ .

*Stichopus owstoni*, sp. n.

Fig. 18. Dorsal view.  $\times \frac{5}{8}$ .

Fig. 19. Do.  $\times \frac{1}{2}$ .

Fig. 20. Ventral view.  $\times \frac{1}{2}$ .



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Figs. 16-17 *Bathyplotes golden-hindi*, sp. n.  
Figs. 18-20 *Stichopus owstoni*, sp. n.

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