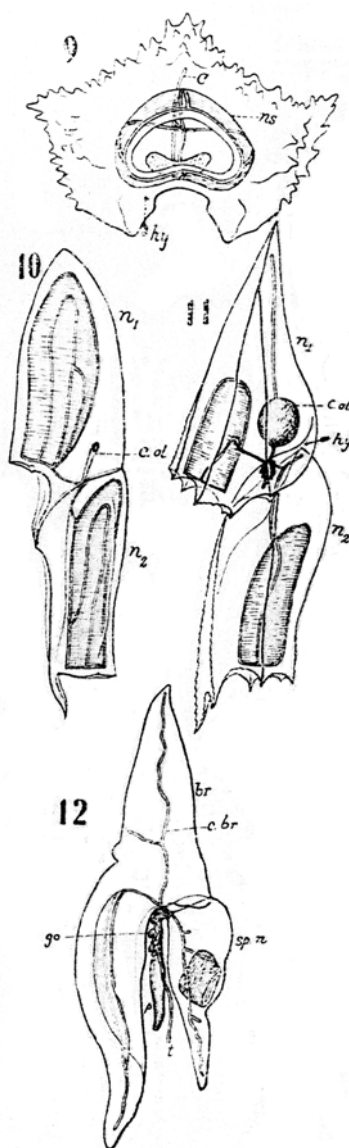


Calyconectid Siphonophorae IV  
by Tamiji Kawamura  
Dobutz, Z. Tokyo, 27, 428-440, 1915  
Translated by Rodney Notomi

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*Hippopodius ungulatus* (Haeckel) Chun  
*Polyphyes ungulatus* Haeckel, 1888b, p. 179, Pl. XXIX, figs. 1-8  
*Hippopodius ungulatus* Chun, 1897, p. 103  
*Hippopodius hippopus* Schneider, 1898, p. 82

Since this species has already been reported in Vol. XXII, the discussion will not be repeated here again.



### Genus *Vogtia* K  lliker, 1853

The nectophore is pentagonal

Schneider, following the example, combined this genus with the preceding one but no other investigator seems to agree with this classification. The genus has two species *Vogtia spinosa* Keferstein and Ehlers (figure 9), *Vogtia pentacantha* K  lliker. None has been found in our country. However, during the "Albatross" Expedition, the first species was found at several stations in the eastern Pacific, thus, subsequently Delage mentioned its occurrence in Pacific waters.

### IV Family Diphyidae Eschscholtz, 1829

When the smooth primary nectophore is cast off, it is replaced by a polygonal secondary nectophore. Regeneration of the nectophore is possible in this case. Two nectophores are always present simultaneously, but they differ in structure and are arranged vertically, one above the other.

#### I. Sub-family Galeolariinae Chun, 1897

The nectophores are smooth. The superior and inferior nectophores are almost the same in size; the cormidia do not become separated (from the stem). There is only one genus, *Galeolaria*.

### Genus *Galeolaria* Blainville, 1834

At present there are four recognised species, *Galeolaria truncata* (Sars) Huxley, *G. australis* Quoy and Gaimard; *G. quadrivalvis* Blainville and *G. monica* (actual spelling) Chun each having several synonyms. Identifications of the species are mostly based on the position and shape of the somatocyst of the superior nectophore, and on the shape of the teeth and the wing-like part at the opening of the nectosac of the superior and inferior nectophores. The hydroecium is extremely shallow and practically does not show at all. This is a common characteristic of the species. The specimen seen by the author at Misaki belonged to the first species.

#### *Galeolaria truncata* (Sars) Huxley

*Diphyes truncata* Sars, 1846, p. 41, Pl. 7, figs. 1-12

*Galeolaria truncata* Huxley, 1859, p. 38; Haeckel, 1888b, p. 151; Chun, 1897b, p. 17; Vanh  ffen, 1906, p. 15, figs. 1-10; Lens and van Riemsdijk, 1908, p. 57;

Bigelow, 1911, p. 346

*Epibulia truncata* Haeckel, 1888a, p. 35

*Diphyes appendiculata* Schneider, 1898, p. 85 (partim)

The superior nectophore has a smooth apex. It is a cone that appears to have been pressed from the side, having a lateral longitudinal ridge that does not reach either the apex or the lower end. This is generally inconspicuous. The greater part of the nectophore is occupied by a comparatively large nectosac, with a large lower diameter and with a constriction at one point on the dorsal side. The velum is well developed. The stalk canal of the nectophore grows from the lower dorsal corner of the somatocyst, and runs almost horizontally towards the dorsal side. It branches into four radial canals on the ventral side of the nectosac. Of these, the ventral canal is very short. The dorsal one is the longest and runs along the median line of the nectosac wall. The two lateral canals run along the lateral wall parallel to the dorsal canal. The four canals enter the circular canal near the nectosac opening.

In addition there are two diagonal canals running to the right and left of the ventral wall. These enter the lateral canals half way up the nectosac and they enter the dorsal canal at one third of the length from the bottom. Although the diagonal canals

are common in some other species, the position of their convergence varies in each species.

The hydroecium is visible but only on the ventral half of the lower surface of the superior nectophore, that is, the bottom surface which tilts slightly toward the ventral side, shows a very slight depression. The rim of this depression is somewhat convex ventrally and on the sides, but dorsally it is slightly concave. Weak, inconspicuous teeth are present on the dorso-lateral corners.

The small egg-shaped somatocyst is situated above the hydroecium. Its long axis is at an angle of approximately 45° to the bottom surface of the hydroecium.

The specimen taken by the author had only a superior nectophore measuring 6.5 mm in length and 3 mm in width on the dorsal side. A perfect specimen with an inferior nectophore has not yet been found. According to a few earlier reports, it is believed that the characteristic opening of the hydroecium on the dorsal wall of the superior nectophore and the opening of the nectosac without protruding at all, is also characteristic of the inferior nectophore. The author, however, regrets not being able to include the entire animal on the "Plate". Therefore, a rough sketch of another species, *Galeolaria australis*, has been inserted as Figure 10. The species discussed here, when compared with *Galeolaria australis*, differs in the fact that it has an egg-shaped somatocyst and lacks previously mentioned process.

This species has hitherto been known to occur only in the Atlantic Ocean. However, some of them apparently occur in the Pacific as well.

### III Sub-family Diphyopsiinae Haeckel, 1888

The nectophore is drill-like, The upper and lower nectophores are identical in size. The cormidia become eudoxids with smooth bracts.

A great many genera have been classified under this sub-family but at present only four, *Diphyes*, *Diphyopsis*, *Chuniphyes* and *Archisoma* are definitely included. The two latter are both new genera that are not easily confused with the others. However, the first two genera are confused and they are also quite similar to *Muggiaea* and *Doromasia* of the sub-family Sphaeronectinae. The structural character differentiating *Diphyes* from *Diphyopsis* is the presence or absence of a special nectophore. The question of whether special and inferior nectophores exist in *Muggiaea* and *Doromasia* may be due to imperfect specimens.

#### Genus *Diphyes* Cuvier, 1817

The nectophore is pentagonal drill-like. Special nectophores are not present on the cormidia. Recently, Bigelow recognised the following ten species, *Diphyes appendiculata* Eschscholtz, *D. spiralis* Bigelow, *D. contorta* Lens and van Riemsdijk, *D. bojani* Chun, *D. fowleri* Bigelow, *D. arctica* Chun, *D. steenstrupi* Gegenbaur, *D. serrata* Chun, *D. subtilis* Chun, *D. subtiloides* Lens and van Riemsdijk. However, in the past a still greater number of species was named. Therefore it is a very difficult task to distinguish one species from another.

For example, only three years prior to Bigelow's list of species Lens and van Riemsdijk named six new species. Yet only two of them are included in the above group. From this one can well understand the situation is somewhat confusing. The author has seen only the first four species of the group recognised by Bigelow. The identification of species are based on the characteristics of the ridges and the teeth-like processes of the superior and inferior nectophores, the somatocyst, the nectosac, the hydroecium, etc.

#### *Diphyes appendiculata* Eschscholtz

(Pl. 12, fig. 14)

*Diphyes appendiculata* Eschscholtz, 1829, p. 138, fig. 7; Huxley, 1859, p. 24, Pl. I, fig. 2; Schneider, 1898, p. 85; Bigelow, 1904, p. 265; 1911, p. 248, Pl. VII, figs. 5-6; Pl. VIII, figs. 7-8, Pl. IX, fig. 6, Pl. X, fig. 6, Pl. XI, fig. 1

*Diphyes bipartita* Chun, 1888, p. 1158; 1897b, p. 24; Mayer, 1900, p. 74, Pl.

XXXIV, fig. 114; Römer, 1902, p. 175.

*Diphyes acuminata* Gegenbaur, 1860, p. 375

*Diphyes sieboldii* Kölliker, 1853, p. 36, Pl. XI, figs. 1-8; Gegenbaur, 1854, p. 453.

*Diphyes gracilis* Gegenbaur, 1853, p. 309, Pl. XVI, figs. 5-7

*Eudoxia campanella* Müller, 1870-71, Pl. XI, figs. 1-4, Pl. XIII, fig. 10; Lens and van Riemsdijk, 1908, p. 48, Pl. VII, fig. 62 (eudoxid).

*Eudoxia messanensis* Gegenbaur, 1853, p. 285 (eudoxid)

*Eudoxia sagittata* Huxley, 1859, p. 50, Pl. IV, fig. 1 (eudoxid)

*Cucullus gegenbauri* Haeckel, 1888b, p. 110 (eudoxid)

*Cucullus elongatus* Haeckel, 1888b, p. 110 (eudoxid)

*Cucullus campanula* Haeckel, 1888b, p. 111 (eudoxid)

The superior nectophore is symmetrical pentagonal drill-like, with five prominent ridges. Of these five, the pair of ventral ridges are weaker than the other three but they are wing-like and protrude further than the other ridges in the upper quarter of the nectophore. The dorso-lateral and ventral surfaces of this pentagonal nectophore form narrow isosceles triangles while the ventro-lateral surface is quadri-lateral.

The lower part of the five ridges do not end in teeth-like processes, but those of the dorsal side are very sharp. The cylindrical nectosac is comparatively large with a small dull pointed upper end. The length is twice its diameter. Its apex almost reaches that of the nectophore. In young specimens it sometimes takes the shape of a spindle with a somewhat inflated middle section.

The stalk canal of the superior nectophore develops from the dorsal side at the base of the stem and runs dorsally and slightly downward. It branches into four radial canal as it reaches the ventral side of the nectosac. Consequently, the ventral canal is extremely short while the dorsal canal is very long. At the base of the circular canal the nectosac has a wide velum.

The very shallow hydroecium is bell-like with its apex slightly bent toward the ventral side. Its upper two-thirds is situated above the level of the nectosac opening. Although the upper half of the hydroecium is conical, its lower half becomes a flat surface with a wide dorsal wall extending below the nectosac opening, forming a partition between the hydroecium and the nectosac opening. A slit in the middle of the partition divides it into a pair of bilateral wings which end in somewhat sharp teeth. The four ridges surrounding the hydroecium opening take three different shapes - the one on the dorsal side is concave downward, the sides are straight, and the ventral side is outwardly convex.

The somatocyst is a small canal that develops from the apex of the hydroecium and gradually increases in diameter. It turns diagonally towards the upper ventral side. Further bending upward it becomes a long cylinder along the ventral side of the nectosac. Finally at a little less than one-fourth from the apex of the superior nectophore, it ends in a round head.

The cormidia consist of a bract, a siphon, a tentacle, and a gonophore. The bract forms a conical bracteal cavity. The author, however, has not yet seen a cormidium sufficiently developed to make the study of the shapes of bracteal somatocyst possible. The siphon is spindle-shaped.

The author has had the good fortune of obtaining several very active specimens in the summer of 1907 at Misaki. However, nearly all were juvenile and lacked inferior nectophores or were mutilated. Since in calyconectid siphonophore the inferior nectophores cannot exist alone and are not seen in the plankton, the animal with cormidia attached to the superior nectophore alone in many cases, has not yet developed its inferior nectophore. On the other hand, the cases in which an inferior nectophore has already been lost are not infrequent. Thus, the lack of inferior nectophores apparently does not seem to interfere with the existence of the animal. The length of the superior nectophore is 4 to 10 mm and the width is 2 to 4 mm. Larger ones are apt to be long and narrow while shorter ones tend to be short and wide.

According to reports, the inferior nectophore is somewhat more than two-thirds the length and width of the superior nectophore. The grooved canal corresponds to the hydroecium. It has strong teeth on the lower left and right ventro-lateral sides. The eudoxids of this species have been reported by various scientific names (see synonyms above) in the past. The bracteal somatocyst is long and cylindrical with the middle section slightly inflated like a spindle.

*Diphyes spiralis* Bigelow

(Pl. 12, figs. 15-16)

*Diphyes spiralis* Bigelow, 1911, p. 249, Pl. VII, fig. 4, Pl. VIII, fig. 1, Pl. IX, fig. 3, Pl. X, fig. 4

The superior nectophore has a pentagonal drill-like shape which is somewhat spindle-like due to its inflated mid-section. Its five ridges are well developed and have serrate teeth on the lower part. The most conspicuous characteristic is the clockwise twist of the ridges in a spiral at the level of the nectosac opening. The dorsal ridge twists to the left near the apex while the ventral ridge twists toward the right. However, the ventral ridge fuses with the right ventral ridge before reaching the apex. Thus, the apex itself is square drill-like. The lower end of the left ventral ridge, unlike ordinary cases, coincides with a strong tooth on the left ventral side of other species found at the left lower corner of the partition between the nectosac and the hydroecium openings. However, the teeth on the right side, which are symmetrical with the teeth described above are totally unrelated to any of the ridges. The lower end of the ventral right ridge comes exactly to the ventral median line as the ridge itself is twisted and comes into contact with the V-shaped apex of the ventral wall of the hydroecium. The dorsal ridge shows a strong twist and this and the two dorso-lateral ridges do not end in teeth-like processes at their lower ends.

The nectosac is cylindrical with an inflated mid-section. The nectosac is relatively very large. Consequently, the amount of gelatinous substance is exceedingly small. This part also has a clockwise twist similar to the nectophore but as it does not have conveniently recognisable ridges, the twist is not conspicuous as in the nectophore.

The somatocyst is spindle-shaped with a small upper part. Its length is approximately one third the height of the nectophore. Its lower end is situated at the apex of the hydroecium on the median line but the upper end follows the twist of the nectophore by strongly bending toward the left.

The hydroecium slants towards the upper ventral side. Although rather wide and deep, its apex, in many cases, does not extend above the level of the nectosac opening. The opening of the hydroecium is triangular and its angular apex consists of a V-shape cut on the ventral median line and a pair of ventro-lateral side teeth. The

dorsal wall of the hydroecium is a flat partition between it and the nectosac. However, as in previous species a slit on the median line at this point forms a pair of wings.

Although this species is a surface form first collected on the "Albatross" Expedition in the Eastern Tropical Pacific, the author, too, obtained a superior nectophore at Misaki in February 1910. From the beginning it had been suspected to be the nectophore of the genus *Diphyes*, but the author hesitated to make a positive identification since it was impossible to study the cormidia because of the imperfect specimen. The author's specimen was 5 mm in length but according to Bigelow, it reaches from 2-6 mm. Therefore, the species in general must be a small form. Neither the inferior nectophore nor its eudoxids have yet been identified.

*Diphyes contorta* Lens and van Riemsdijk

[**(Pl. XII, fig. 17)**]

*Diphyes contorta* Lens and van Riemsdijk, 1908, p. 39, Pl. VI, figs. 48-50; Bigelow, 1911, p. 254, Pl. VII, figs. 7-8, P. VIII, fig. 3, Pl. XI, fig. 2

The spiral nectophore is conspicuously twisted in a clockwise spiral, similar to the previous species. However, the somatocyst is strongly bent. By this character alone, the identification of this species is quite possible.

The superior nectophore has a pentagonal drill-like shape with an inflated middle section. Of the five serrate ridges, the dorsal one is somewhat degenerate and does not reach the apex of the nectophore while the other four ridges are well developed. The dorso-lateral surfaces are slightly convex and the remaining three surfaces are somewhat concave and longer. Consequently, the hydroecium opening is situated below the mouth of the nectosac.

The nectosac is cylindrical and comparatively large. Its apex almost reaches the apex of the nectophore. The opening is round and has a wide velum. The stalk canal begins at the apex of the hydroecium and runs straight on the median line towards the lower end of the ventral wall of the nectosac. At this point, it branches into radial canals but as the ventral radial canal completely disappeared by shrinking the circular canal came together with the right branching fork. The course of the other three canals are generally similar to all others.

The somatocyst is in two parts, a thin, stalk-like canal extending from the apex of the hydroecium, and it becomes a kidney-like sac at its upper end. However, this (expanded) portion which follows the bulge of the nectosac falls on the right side without its long axis becoming upright. The apex of the somatocyst appears to be facing the right ventral surface of the nectophore.

The hydroecium is bell-like but extremely shallow. Its opening is surrounded by four teeth. The dorsal wall has a slit on its median line.

Heretofore, this species was caught in Malayan waters and in the Eastern Tropical Pacific. But because of the fact that the presence of the inferior nectophore was uncertain and there was a special nectophore on the cormidia, the species was included in this genus. The author's specimen was similar to others and was obtained at Misaki in February 1910. It consists only of a superior nectophore whose length was approximately 5 mm and width 2 mm at the opening of the nectosac. However, it was not possible to see the structure of the cormidia.

*Diphyes bojani* (Chun)

*Doromasia bojani* Chun, 1892, p. 108, fig. 8

*Muggiaea bojani* Schneider, 1898, p. 88

*Diphyes indica* Lens and van Riemsdijk, 1908, p. 44, Pl. VII, fig. 54

*Diphyes malayana* Lens and van Riemsdijk, 1908, p. 45, Pl. VII, figs. 55-56

*Diphyes gegenbauri* Lens and van Riemsdijk, 1980, p. 46, Pl. VII, fig. 57, Pl. VIII, fig. 58

*Doromasia pictoides* Lens and van Riemsdijk, 1908, p. 3, Pl. I, fig. 1

The superior nectophore is pentagonal, drill-shaped and the lower third is inflated. The five ridges are conspicuous and slightly convex outwardly, ending in tooth-like processes. Particularly, three of the tooth-like process on the dorsal and dorso-lateral sides are like extremely sharp three cornered drills whose pointed ends encircle the nectosac opening by slightly curving inward. The other two teeth are so weak that they are not worth studying. Also, on the nectophore are found two other very strong teeth which, as in other cases, are situated at the dorsal corners of the hydroecium opening.

The lower half of the nectosac is almost cylindrical while the upper half is conical. Its apex is very near the top of the nectophore. It ends in a smooth blind sac instead of becoming pointed like the apex of the nectophore. This part is tinted yellow when alive. The stalk budding out from the top of the hydroecium, runs downward through the gelatinous part between the hydroecium and the nectosac. When it reaches the nectosac wall slightly above the lower end of the median line of the ventral wall of the nectosac, it branches into four radial canals.

The hydroecium has a long conical shape and occupies approximately the lower dorsal half of the superior nectophore. The hydroecium opening is quadrilateral with short, straight sides dorsally and on both right and left sides, while the ventral side is slightly concave downward. The slit on the median line of the dorsal wall of the hydroecium is absent.

The somatocyst is somewhat arched and cylindrical in shape and is situated on the ventral side of the nectosac about three quarters of the distance from the bottom of its upper half. The arch of the somatocyst follows that of the ventral wall of the nectosac. The basal part, connected to the apex of the hydroecium, is smaller.

Cormidia generally occur in great numbers suspended on a long stem. The bract is relatively large though its gelatinous part is thin and forms a conical bracteal cavity. There are three teeth of which one slightly to the left of the centre is largest followed by the one on the right. The left tooth is the weakest.

The siphon is spindle-like and its basal part is tinted a light yellowish green. There are commonly more than two gonophore buds on a well developed siphon.

This species was originally classified in the genus *Doromasia*, sub-family Muggiinae by Chun (refer to previous series III). The specimen as shown in the author's illustration had such a large hydroecium that it is obvious at a glance that the animal belongs to the sub-family Diphyopsiinae (sub-family of Diphyidae). The species is one of the most common forms occurring at Misaki. The largest superior nectophore exceeded 15 mm in length, and with *Diphyopsis* which will be discussed later it is one of the largest siphonophores. The author has not yet found a specimen with an inferior nectophore. According to Bigelow, it is about three quarters as long and wide as the superior. Its general form resembles the inferior nectophore of *Diphyopsis* but differs in the wing-like part of the hydroecial groove.

Chun had noted that five ridges of the superior nectophore of this species arise abruptly near the upper end as wing-like expansions but such cases are uncommon. Generally this expansion seems to occur throughout the entire length of the ridge.

#### Genus *Diphyopsis* Haeckel, 1888

Superior nectophore pentagonal drill-shaped; special nectophore present on cormidia. Four species considered to be definitely established: *Diphyopsis*

*chamissonis* (Huxley), *D. dispar* (Chamisso and Eysenhardt), *D. hispaniana* Mayer, *D. mitra* (Huxley). The first two of these were obtained at Misaki.

*Diphyopsis chamissonis* (Huxley)

(Pl. XII, fig. 19)

*Diphyes chamissonis* Huxley, 1859, p. 36, Pl. I, fig. 3

*Muggiaea chamissonis* Haeckel, 1888a, p. 34; 1888b, Pl. 37; Chun, 1892, p. 89

*Diphyes weberi* Lens and van Riemsdijk, 1908, p. 53, Pl. VIII, figs. 67-68

*Diphyopsis chamissonis* Bigelow, 1911, p. 347

Despite the pentagonal drill-like shape of the superior nectophore, this species appear to be more like a five ridged spindle because of the strongly inflated mid-section. Of the five obvious serrate ridges those on the dorsal and the dorso-lateral sides are more prominent than the other two, and their lower extremities, too, end in stronger teeth than do the others. the teeth are triangular, conspicuously pointed, curve inward, and together surround the nectosac opening.

The nectosac is almost spindle-shaped like the nectophore. The stalk canal, radial canals, etc are the same as in other general cases. The dorsal wall of the nectosac opening forms the partition between this opening and the hydroecium, but no slit is apparent on the median line, and lower ends are developed into strong teeth. The hydroecial opening is surrounded by these and two other teeth at the lower ends of the ventral ridges of the nectophore. Of the four margins that connect these four teeth, both lateral ones curve very slightly upward while the other two sides are deeply concave. The dorsal margin, at the same time, is somewhat convex towards the dorsal side. The hydroecium is comparatively large and generally bell-shaped. However, the upper half appears to be a round headed cylinder while the lower half, by itself, is like a truncated square drill.

The height of the hydroecium is slightly greater than the length of the superior nectophore and its width is greater than the widest part of the latter.

The shape of the somatocyst is peculiar being nearly an oval spindle in shape. Its length is slightly less than one third the length of the nectosac and is situated along the mid one third of the nectosac.

The stem is long and, in many cases, it has more than six or seven cormidia.

The bract is leaf-like and partially covers the stem and cormidia. On the dorsal side at the point of attachment with the stem is a nearly spherical bracteal somatocyst, but somewhat elongate vertically. Above the point of attachment, the bract stands up on the dorsal and both lateral sides like a collar, the two margins of the ventral side forming a V-shaped, valley-like depression. The greater part of the bract is below the point of attachment, forming a wide conical bracteal cavity. The lower margin of the bract is the longest as it is diagonally cut from the left and right. On both ends two sharp teeth face each other on the left and right.

The special nectophore occupies the ventral half of the bracteal cavity and its obvious bilaterally symmetrical being a square post, that is, from the length of the four ridges and from the shape of the teeth at their lower end, it is obvious that the sides of this structure are all equal. Although the four sides are more or less convex, the ventral one (Author's not: the side facing the stem is called the ventral side as a whole) has a round gutter-like depression in the gelatinous material and together with the inner lower surface of the bract it forms a passage similar to the hydroecium. The upper surface is diagonally cut off from upper dorsal side to lower ventral side. From the centre of this surface, a conical gelatinous process is developed through which runs a short, straight stalk canal.



The nectosac of the special nectophore is cylindrical and its axis weakly forms an "S". Because the stalk canal branches out into four radial canals at the upper ventral corner, the length of these branches differs somewhat. The lower surface of the special nectophore is quadrilateral and the four ridges terminate in strong teeth. Of the four margins which connect the teeth, only the one on the ventral side is nearly straight. The ridges on the lower two thirds of the special nectophore are serrate.

The siphon and the tentacles are no different in shape from other species.

Of many specimens collected at Misaki, the superior nectophore measured 4.5 to 10 mm in length and 1.3 3 mm in width.

This species was first reported by Huxley as a member of the genus *Diphyes* for a specimen from the east coast of Australia. It was subsequently identified as *Muggiaea* sp. Bigelow finally classified it under *Diphyopsis*. He based the last reclassification on the assumption that the animal in question is identical with the new species *Diphyes weberi* of Lens and van Riemsdijk although he had not studied the animal himself. However, as far as the author's specimens are concerned, their structural characteristics agree very well with Huxley's description, but upon a more careful study of the cormidia, it proved to have a special nectophore. Therefore this species undoubtedly belongs to the genus *Diphyopsis* rather than the genus *Diphyes*. No definite conclusion can be made as to the occurrence of an inferior nectophore in this species since no one has yet seen one. If such a part is lacking, the species should be classified as belonging to the genus *Doromasia* following Haeckel rather than in *Muggiaea*. But in the author's specimen, the hydroecium was so large that it gave the impression of belonging to the family Diphyidae. However, this is simply a conjecture. This is also true of Huxley's illustration.

In any case, it would be suitable to accept the present taxonomic arrangement for the time being as Bigelow has suggested.

#### Supplement

##### *Ersaea chamissonis* ?

(Pl. XII, fig. 20)

Although this species is an eudoxid whose taxonomic place is not yet clearly established, it is included at this point in the paper as it appears to be related to *Diphyopsis chamissonis* (Huxley). However, since the generic *Ersaea* has been used for all eudoxids with a special nectophore, the same shall be true in this case as in *Ersaea bojani*.

The assumption that the eudoxid is related to *Diphyopsis chamissonis* is based on the similarity of the special nectophore. It can be safely said, in fact, that they are absolutely identical. However, in other respects, such is not the case.

The bract with a somewhat greater width than the dorso-ventral thickness is shaped like a peach. Dorsally and laterally it is convex and smooth but ventrally it has a deep longitudinal groove in section resembling the letter V. The lower part is connected to the bracteal cavity. The gelatinous dorsal wall of the cavity becomes thinner below and narrower laterally, finally terminating in two teeth-like processes. The bracteal somatocyst is cylindrical with the upper part inflated bulging out at the upper end, toward the upper ventral part. Although the dorso-ventral thickness greatly increases above, the oil drop is not found there but rather in a still smaller apical sac-like process at the dorsal corner.

By comparing this bract with *Diphyopsis chamissonis* (Huxley) the author finds a great difference between the thickness of the gelatinous part and the shape of the somatocyst. To be more exact, the former has a peach-shaped bract with a ball-

shaped somatocyst. The bract, however, in all cases is shaped like a thin leaf and later develops the individual characteristics. The somatocysts also increase relatively in their length. Therefore, it would be better to stress the similarity in the special nectophores rather than the differences just mentioned.

One specimen had a length and width of about 5 and 3 mm respectively. A special nectophore had the same measurements as those given above.

Although *Ersaea cordiformis* Quoy and Gaimard was identified as an eudoxid of this species by Haeckel, it belongs to the genus *Muggiaea*. The author failed to recognise any difference between this and the author's specimen.

*Diphyopsis dispar* (Chamisso & Eysenhardt)

*Diphyopsis dispar* Chamisso & Eysenhardt, 1821, p. 365, Pl. XXXIII, fig. 4;

Eschscholtz, 1829, p. 135; Huxley, 1859, p. 30, Pl. I, fig. 1; Schneider, 1898, p. 197; Lens and van Riemsdijk, 1908, p. 42, Pl. VI, figs. 51-52

*Diphyes angusta* Eschscholtz, 1829, p. 136, Pl. XII, fig. 6

*Diphyes campanulifera* Eschscholtz, 1829, p. 137, Pl. XII, fig. 6; Gegenbaur, 1860, p. 366, Pl. XXX, figs. 23-26

*Eudoxia lessoni* Eschscholtz, 1829, p. 126, Pl. XII, fig. 2 (eudoxid)

*Ersaea lessoni* Huxley, 1859, p. 57, Pl. II, fig. 6; Fewkes, 1881, p. 166, Pl. VI, fig. 89; Chun, 1897b, p. 26; Mayer, 1900, p. 75, Pl. XXVIII, figs. 96-97; Lens and van Riemsdijk, 1908, p. 50 (eudoxid)

*Diphyopsis compressa* Haeckel, 1888a, p. 35; 1888b, p. 153, Pl. XXXIII, XXXIV

*Cucullus lessoni* Haeckel, 1888a, p. 32; 1888b, p. 110 (eudoxid)

*Ersaea compressa* Haeckel, 1888a, p. 32; 1888b, p. 123, Pl. 34 (eudoxid)

*Diphyopsis dispar* Haeckel, 1888b, p. 152; Chun, 1897b, p. 27; Bigelow, 1911, p. 257, Pl. X, fig. 1, Pl. XI, fig. 3

*Diphyopsis angusta* Haeckel, 1888b, p. 152

*Diphyopsis campanulifera* Haeckel, 1888b, p. 153; Chun, 1897b, p. 26; Mayer, 1900, p. 75, Pl. XXVIII, figs. 93-95; Lens and van Riemsdijk, 1908, p. 51, Pl. VIII, fig. 63.

The superior nectophore has bilateral symmetry, pentagonal drill-like shape, being strongly pressed from the right and left. The mid-section is inflated dorsally but below this section it resembles an angular post. Of the five ridges the three dorsal and lateral ones end in strong triangular drill-like teeth surrounding the nectosac opening. The remaining two ridges also end in strong teeth on the ventral side of the hydroecium. In addition, two somewhat weaker teeth are present at the lower corners on both sides of the ventral wall of the hydroecium.

The nectosac is cylindrical, extending approximately two-thirds the length of the nectophore. This extends into a canal about half the length of the cylindrical part. This in turn extends nearly to the apex of the nectophore where it ends in a blind sac. The stalk canal buds from the apex of the hydroecium, and turns diagonally towards the ventral side of the nectosac where it branches into four radial canals at a point about one fifth the height of the nectosac. The dorsal canal is extremely long as it reaches beyond the apex running along the median line.

The hydroecium has a long bell-like shape and is situated in the lower ventral half of the nectophore. Its opening is quadrilateral, surrounded by four teeth as in the previous case with each side weakly curved upward. The somatocyst is a cylinder with pointed ends and its axis turns diagonally upwards towards the dorsal side away from the apex of the hydroecium.

The inferior nectophore is approximately the same size as the superior nectophore but it is slightly shorter and smaller. The shape of the opening of the

inferior nectophore is identical with that of the superior nectophore, but such is not the case with the other parts. Its general appearance is that of a heptagonal drill placed over a pentagonal post. This post-like lower part is exposed, while the drill-like upper part is the section inserted in the hydroecium of the superior nectophore. In the superior nectophore the five ridges are weak and inconspicuous but in the inferior nectophore not only are these definite but in addition to the five ridges there is a lateral ridge on each side forming the heptagonal drill-like shape. Of the ridges, the mid-dorsal, the two dorso-lateral and the lateral ones end in extremely sharp triangular drill-like teeth. These last two of these and the remaining two ventral ridges enclose the lower opening of the hydroecial groove (Author's note: the part comparable to the hydroecium of the superior nectophore becomes a groove). The inferior nectophore can be almost divided into dorsal and ventral halves by a plane through the pair of lateral ridges. The dorsal half contains the small stalk canal and the tubular nectosac. The stalk canal runs almost perpendicular to the upper end where the inferior nectophore is attached and branches into four radial canals, at the upper ventral corner of the nectosac. These canals differ somewhat in length. The ventral half of this nectophore has somewhat less gelatinous material and is occupied by a cylindrical hydroecial groove as already described. The groove is rolled into a tube by the wing-like parts which extend from its sides, overlapping like a kimono (the left side over the right).

These wings are almost identical in size and are wide from top to bottom. They are characteristic of the species. The upper opening of the groove is diagonal and lower opening is quadrilateral enclosed by four teeth as previously described. All four sides curve in an arc that is most marked on the ventral side.

The stem is extremely long with numerous cormidia. The bract of each cormidium is thin and leaf-like with a conical bracteal cavity below. The author has not yet seen a cormidium with a special nectophore. However, it undoubtedly occurs as it has been reported by other investigators.

This species is the most at Misaki throughout the year. The length is 13-17 mm and the width is 3.5-4 mm. Frequently, only the superior nectophore is caught and rarely a complete specimen. Its occurrence is supposedly limited to the Eastern Tropical Pacific but in the Atlantic it occurs in considerably higher latitudes. Considering the abundance of the species, its distribution must be extremely wide.

Supplement  
*Ersaea lessonii* ?  
(Pl. XII)

This name should be used for the eudoxid of the species previously discussed and is included in its list of synonyms. Hitherto, this organism was identified as the monogastric generation of *Diphyes campanulifera*. This in turn was considered as identical with *D. dispar*. Hence it was added to the synonyms of this species. The following description more or less verifies this but there is some ground for doubt because of the bracteal structure. Therefore, it is presented as a separate paragraph.

The bract is a half to two-thirds the total length (of the eudoxid) and has a helmet shape. The apex is diagonally conical. The dorsal ventral surfaces are smooth. The ventral surface has a narrow, long flat area as if it had been cut off. The lower surface connected to this forms a wide concave bracteal cavity. The lateral and dorsal surfaces of the cavity are bordered by somewhat sharp edges on which are found two dorso-lateral teeth.

The thick gelatinous bract has a cylindrical somatocyst in the centre. The somatocyst is vertical and its upper end bluntly pointed. The lower end is connected to the wide stalk of the siphon. On the siphon stomach, eight hepatic ridges are found, and next to the basal part, a constriction can be clearly seen.

The special nectophore is like a square post whose four sides are more or less concave. The two ventral ridges have stronger teeth than the other two. Towards the slanting upper dorsal surface there is a conical process with its apex at the point of attachment to the stem. On the ventral surface it has a groove similar to a round gutter that forms a passage for the stem. The stalk canal is short and the four radial canals are of equal length.

The gonophores of one colony usually are of the same sex and occur in large numbers. The gelatinous part is a decapitated square drill shape, with the lower surface curved inward as if dug out. The lower part of the four ridges become teeth. The lower half of each ridge is serrate. The nectosac of the gonophores has a similar canal system to that of the special nectophore. Male gonophores have a long spindle-like stalk within the nectosac. The identical part in female gonophores is nearly spherical and stores numerous eggs.

In August and December 1907 many specimens were obtained measuring 6.5-11 mm in length and 2.5-4 mm in width.

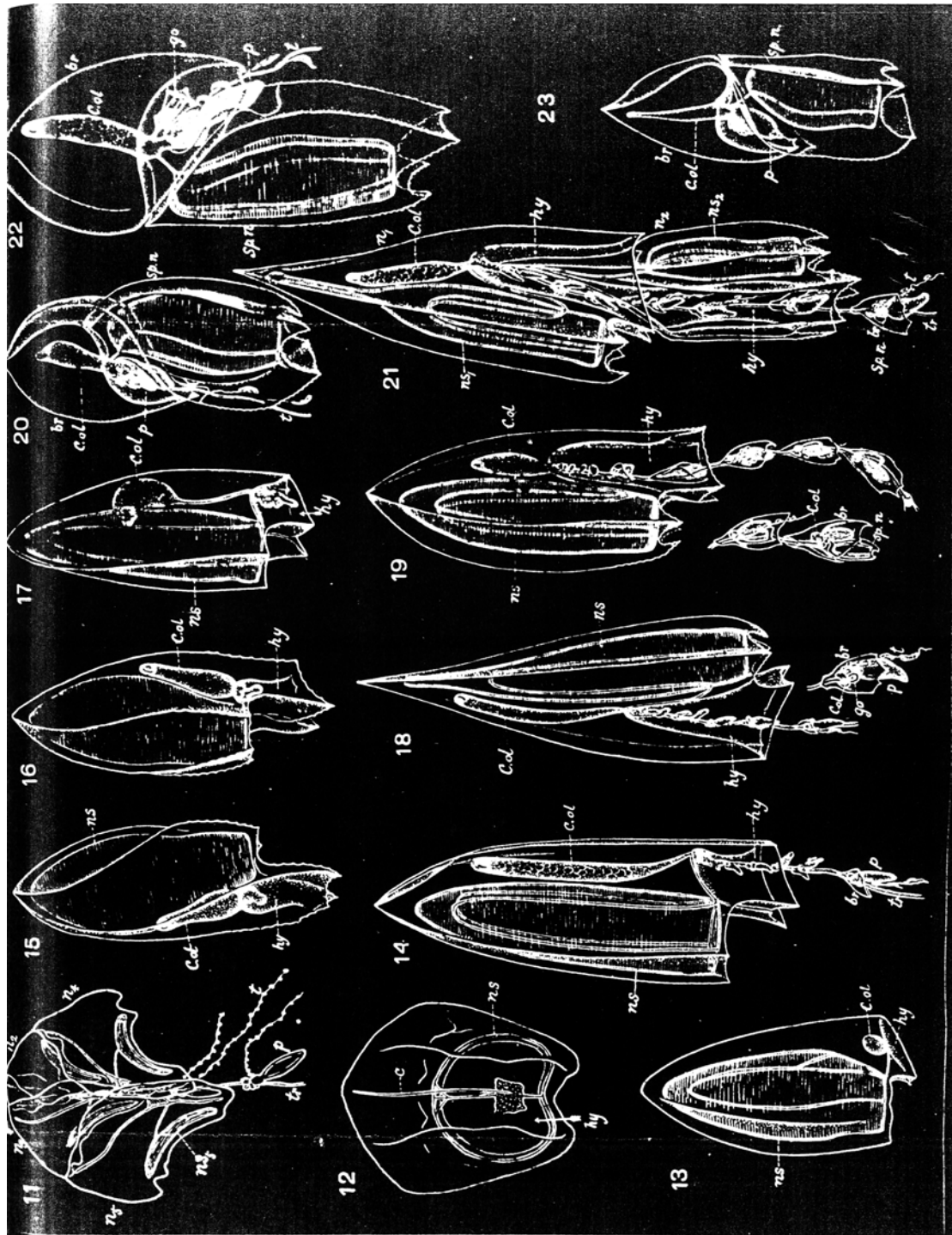
This species does not agree with Huxley's original drawing in that in Huxley's specimen the bract is larger below and smaller above, with a height of two-thirds the thickness of the gelatinous part. On my specimen, on the other hand, the upper and the lower section of the corresponding parts are the same, and as a whole it is long, almost reaching the dorsal wall.

#### Supplement

*Ersaea* sp.

(pl. XII, fig. 23) [**? dispar**]

Although this species was discovered while examining a preserved specimen of the eudoxid *Ersaea lessonii* ? that has been described above, it was obvious that this animal too was still young since the first gonophore bud was barely visible. The significant points, however, are that the apex of the bract was sharply pointed and its somatocyst too had a spine-like point and its somatocyst too had a spine-like point reaching the bractal apex. But this cannot be considered as the fully mature shape of the bract since the specimen was still in its juvenile stage. Consequently, it is not possible to discuss this species at this time. The total length was 7.5 mm and the width was 2.5 mm.



Legend Plate XII, Vol. XXVII

- Figure 11. *Hippopodius unguatus* [*hippopus*], lateral view x 4  
 Figure 12. Nectophore of above, ventral view x 4  
 Figure 13. *Galeolaria truncata*, lateral view x 8 [*?cossack*]  
 Figure 14. *Diphyes appendiculata*, lateral view x 8  
 Figure 15. *D. spiralis*, lateral view x 12  
 Figure 16. *D. spiralis*, lateral view x 12  
 Figure 17. *D. contorta*, lateral view x 10

Figure 18. *D. bojani*, lateral view x 8 [? **dispar**]  
 Figure 19. *Diphyopsis chamissonis*, lateral view x 8  
 Figure 20. *Ersaea chamissonis* ?, dorsal view x 8  
 Figure 21. *Diphyopsis dispar*, lateral view x 8  
 Figure 22. *Ersaea lessoni* ?, ventral view x \* [? **dispar**]  
 Figure 23. *Ersaea* sp., dorsal view x 8 [? **dispar**]

br. bract; c.ol. somatocyst; go. gonophore; hy. hydroecium; n1. nectophore; n2. nectophore; n3. nectophore; n4. nectophore; n5. nectophore; ns. nectosac; ns1. nectosac; ns2. nectosac; n3. nectosac; p. siphon; sp.n. special nectophore; t. tentacle; tr. stem.

#### Legend, Vol. XXVII, Figures 9-12

Figure 9. *Vogtia spinosa* (after Bigelow)  
 Figure 10. *Galeolaria truncata* (after Bigelow)  
 Figure 11. *Chuniphyes multidentata* (after Bigelow)  
 Figure 12. *Archisoma natans* (after Bigelow)  
**[Kawamura has tried to fit together figs. 1 & 3 of Bigelow (1911a), pl. 6 but has distorted fig. 1 and left no space for appendages. BAD]**

br. bract; c.br. bracteal canal system; c.ol. somatocyst; hy. hydroecium; n1, n2. nectophore; ns. nectosac; sp.n. special nectosac.

#### Genus *Chuniphyes* Lens and van Riemsdijk, 1908

The superior nectophore is heptagonal drill-like, with a small canal attached to the top of the somatocyst. One species *Chuniphyes multidentata* Lens and van Riemsdijk (illustrated as figure 11) described from a specimen collected on the "Siboga" Expedition is known. Its seven ridges run the entire length (of the nectophore). The hydroecium is exceptionally shallow, the nectosac is short but the somatocyst is long. It is an exceedingly unusual organism. However, the classification of this genus is still indefinite and quite different. Therefore, there is a possibility that it belongs to this genus, but perhaps it belongs to the sub-family *Diphyopsiinae* Haeckel. hence, the entry was made here in this writing. A special nectophore has not been found.

#### Genus *Archisoma* Bigelow, 1911

The structure of the nectophore is not known. The somatocyst is a branched canal system. A new species, *Archisoma natans* Bigelow (figure 12) is known. Having only one eudoxid the polygastric generation is not clear but its nectophore is singular and it must be akin to the genus *Nectopyramis* Bigelow. Since the length of the bract measured 37 mm it presumably must have been an extremely large form.

(440)

本種のハックスリーの原圖と一致せざる點は、彼にては保護葉體囊下太くして上細く、高さ寒天質の厚さの三分の二に達せるに此にては上下殆ど太さを同じうし、長くして殆ど背壁に達せることなり。

附 *Physaea* sp. (第十二版 第二十三圖)

本標品は前記の「エードキシッド」*Physaea lessonii*? の保存せられしものを檢する際に見出せし一個なるが、生殖體の第一の芽僅に現はれたるのみなれば未だ幼若なること明かなり。注意すべきは保護葉の頂點鋭く尖れることと、其體囊又棘の如く尖りて保護葉の頂點に達せることとなるが、標品未だ幼若なる故、之を以て保護葉の老成したる形と認むること能はず。従つて種屬を論ずること不可能なり。全長七・五耗、幅二・五耗。

屬 *Chamiphysa* LENS et VAN RIEMSDIJK,

1908.

上泳鐘七角錐形、體囊の上に附屬せる一本の細管あり。『シボガ』號の採りたる標品により作られたる一種の *multidentata* LENS et VAN RIEMSDIJK (挿圖第十一) あり。七稜上より下まで通り、幹室甚だ淺く、泳囊短く、體囊長き頗る特殊のものなり。但し本屬の分類上の位置は未だ不確にして、餘程變れる故別屬ならんと想像せられ、又フタツクラゲモドキ亞科ならんと推定せらるゝより、茲に編入せられたるなり。特別泳鐘の有無不明。

屬 *Archisoma* BIGELOW, 1911.

泳鐘の形不明。體囊は分岐せる管系統なり。『アルバトロス』號が東熱帶太平洋に獲たる一新種 *Archisoma nutans* BIGELOW (挿圖第十二) あり但し「エードキシッド」一個のみにして、多營養世代は不明なるが、その泳鐘若し單一ならば、アミスヂクラゲに近縁のものなる可し。保護葉の長さ三七耗ありしと云へば、頗る大形のものならんと想像せらる。



前記幹室溝之を占む。凹溝は左右より出でし衣服の如くに左右相重れる(左が外にして右が内)翼狀部により完全に抱擁せらる。此翼が左右殆ど同大にして、上下の幅廣きことが本種の特徴なり。幹室溝の上の口は斜に切り取りたる如き形をなし、下の口は前記四齒に圍まれて四邊形をなし、四邊は皆上に向ひて彎曲せる弧線、彎曲は腹側邊に最も強し。

幹は甚長く下垂し、多數の幹群を有す。幹群の保護葉は薄葉狀にして、下に圓錐形なる保護葉腔を抱けり。余は未だ特別泳鐘の成長せし幹群に出會はざりしが、之あることは諸家の報告にて疑ふ可からず。

三崎にて四季を通じ最も普通なる本亞科動物は是なり。長一三乃至一七耗、幅三・五乃至四耗、上泳鐘のみを得ること多く、完全なるものを得ること少し、太平洋にては東熱帯のみなるが、大西洋にては頗高緯度に進めり。今日本に饒産するより見れば太平洋にても分布廣汎なるべし。

附 *Eusneu lessoni*?

(第十一版  
第廿二圖)

此學名は前種の異名表に見られる如く、前種の「ユー・ドキシッド」に用ゐらるべきものなるが、元來は *D. conu-paulifera* の單營養世代と證明せられたるもの、*D. conu-paulifera* が *D. dispa* と同種と認められしより、從つて入籍せるものとす。而して茲に報告するものは大體是に一致するも、保護葉の形狀に關し少しく疑ある故假に

項を別にし置くなり。

保護葉は全長の半分乃至三分の二を占め、ヘルメット形、項端は斜に圓錐形、背側及横側は圓滑、腹側は截り取りたる如く縦に長く横狭き扁平の場所あり。是と引續きの下面は凹入して廣き保護葉腔を形成す。腔の横側及背側は多少鋭き縁にて限られ其處に二個の背横側齒あり。保護葉の厚き寒天質は中心に圓筒狀の體囊を有す。體囊は垂直に位置し、上端は鈍く尖り、下方は營養體の廣き柄部に續く。營養體胃部には八條の肝隆起ありて、基部との境に明瞭なる縊れ目あり。

特別泳鐘は左右相稱を保てる四角柱形、四面皆多少凹、腹側の二稜は他の二よりも強き齒に終る。斜なる上面の背側に偏して、特別泳鐘が幹に附着する點を頂としたる圓錐形隆起あり。又その腹側には圓樋の如き凹溝ありて幹及幹群の通路をなせり。柄管は短くして四放射管は殆ど同長なり。

生殖體は多數存する時は常に同性、寒天質は截頭四角錐形、下面は掘り取りたる如く彎入し、四稜の下端は齒となれり。下半部の各稜は鋸齒を有す。生殖體の泳囊にも特別泳鐘の泳囊と同様の管系統あり。雄性生殖體なれば泳囊内に長き紡錘形の柄部あり。雌性生殖體なれば同じ所が球形に近き形を取り、中に多數の卵を藏す。

一九〇七年八月及十二月多數の標品を得たり。全長六・五乃至一一耗、幅二・五乃至四耗。



1897l, p. 26; MAYER, 1900, p. 75; Pl. XXVIII, figs. 56-57; LENS and VAN RIEMDIJK, 1908, p. 50, (Eudoxil).

*Diphyopsis compressa* HAECKEL, 1888 a, p. 35, 1888 b, p. 153, Pl. XXXIII, XXXIV.

*Cucullus lessoni* HAECKEL, 1888 a, p. 32; 1888 b, p. 110, (Eudoxil).

*Eusau compressa* HAECKEL, 1888 a, p. 32; 1888 b, p. 123, Pl. 34, (Eudoxil).

*Diphyopsis dispar* HAECKEL, 1888 b, p. 152; CHUN, 1897 b, p. 27; BIGLOW, 1911, p. 257, Pl. X, fig. 1, Pl. XI, fig. 3.

*Diphyopsis angusta* HAECKEL 1888 b, p. 152.

*Diphyopsis campanifera* HAECKEL, 1888, b, p. 153; CHUN, 1897 b, p. 23; MAYER, 1900, p. 75, Pl. XXVIII, figs. 93-95; LENS and VAN RIEMDIJK, 1908, p. 51, Pl. VIII, fig. 63.

上泳鐘は左右より強く壓せられて特に左右相稱なる五角錐形をなす。中央部背方に膨らみ出せるため、中央以下は角柱に近し。五稜の中、背及横の三は下方強き三角錐形齒狀突起となり、泳囊口を圍む。他の二稜は幹室の腹側に強き齒に終る。他の稍強き二齒、幹室背壁兩側下隅にあり。

泳囊は圓筒形にして泳鐘の長さの三分の二に相當するも、頂點に接續して更に盲狀に延びたる管狀の部分あり、此部の長さは圓筒部の半位、頂端は殆ど泳鐘の尖端に及

べり。柄管は幹室の頂より發し、斜に泳囊腹側に向ひ、泳囊の高さの下より五分の一の所にて四放射管に分る。背放射管は正中線上を頂端迄達して之を超ゆる故甚だ長し。

幹室は長き鐘狀、泳鐘の腹半の下半を占む。下方開口は四邊形、前述四個の齒に圍まれ、四邊は皆上に向ひて弱く彎曲せり。體囊は兩端の尖れる圓筒形、其軸は幹室頂より上方少し斜に背方に向ふ

下泳鐘は上泳鐘と殆ど同大なれど、極微に是より短く細し。其泳鐘口附近の形は全然上泳囊の該部と一致するも、其他にありては然らず。全形は五角柱の上に七角錐を重ねたるに比すべく、柱形の部分は外に露出し、錐形の部分は上泳鐘幹室内に挿入せらるゝ所とす。後者にては五稜の隆起すること弱く、不著明なれど、前者にては孰れも明瞭なる上、一般に見らるゝ五個の稜の外に、尙左右側各一條の横側稜加はりて七角錐形をなせり。七稜の中背背横及横の五稜は下端甚だ銳利なる三角錐形の齒に終り、又此最後の二つと残りの二つの腹側稜とは幹室溝(上泳鐘の幹室に比す可き所凹溝となれり)の下口を圍めり。下泳鐘をば一對の横側稜を含む平面によりて大凡背腹に兩分することを得。この背側半部の中には細き柄管と同筒狀の泳囊とが含まる。柄管は下泳鐘の附着點なる上端より殆ど垂直に下り、泳囊の腹上隅に來り此所にて四放射管に分るゝ故、四放射管には少しく長短あり。次に下泳鐘の腹側半部には寒天質少く、圓筒狀の凹溝なる

モドキを母とせるものならずやと思はるゝ故、此所に挿入す。而して「Eusau」はもと特別泳鐘を有する「ユードキシッド」を呼ぶに用ひられし屬名なるを以て、暫く之を冠せしめ置くこと、先の *Eusau hyanti* の時に同じ。

此「ユードキシッド」のタマゴフタツクラゲモドキに關係ありと思はるゝはその特別泳鐘の性状にして、全く一致すると云ひて差支なし。然れども他の性質に於ては然らず。

保護葉は背腹の幅が左右の幅よりも少しく大なる桃實形にして、背側及左右側は凸にして圓滑なるも、腹側には深き縦溝(横斷面V字形に近き)ありて、下方は保護葉腔に續けり。腔の背壁をなせる寒天質は下方に行くに従ひ薄く、且つ左右より狭まり來りて、遂に二個の齒狀突起に終る。保護葉體囊は上方の膨れたる圓筒狀にして、腔の背上方に起り、斜に腹上方に向ひて、上端に近き所に背腹の幅大に増大すれども、油滴は此所に在らずして、頂端の背側偶の更に小なる囊狀突起をなせる部分にあり。

今此保護葉を前掲タマゴフタツクラゲモドキの保護葉に比較するに、寒天質の原薄と體囊の形とに於て大なる徑庭あり。即ち此にては桃實形をなして太きに、彼にては葉狀にして薄く、此にては長くして圓筒形なるに彼にては短くして球形に近きこと是なり。然れども保護葉は孰れの種に於ても最初は皆薄葉にして、後に肥厚して各

に特有なる形となるもの、體囊も亦之に伴ひて長さを増すものなれば、此差よりも比較的老成の狀況にある特別泳鐘同志の類似に重きを置くを適當とすべし。

標品一個。保護葉の長さ約五耗、幅約三耗。特別泳鐘の長さと幅是に同じ。

因に *Eusau cordiformis* QUOY et GAIMARD はハツケルが本種(但し *Muggicia* 屬に入れて)の「ユードキシッド」と認めたるものなるが、是と本標品との異同を確むること能はず。

### フタツクラゲモドキ

(第十二版  
第廿一圖)

### *Diphyopsis dispar* (CHAMISSO et EY-

SENHARDT).

*Diphyopsis dispar* CHAMISSO and EYSENHARDT, 1821, p. 365, Pl. XXXIII, fig. 4; ESCHSCHOLTZ, 1821, p. 137; HUXLEY, 1850, p. 30, Pl. I, fig. 1; SCHNEIDER, 1898, p. 197; LENS, and VAN RIEMSDIJK, 1908, p. 42, Pl. VI, figs. 51, 52. *Diphyopsis angustata* ESCHSCHOLTZ, 1820, p. 136, Pl. XII, fig. 6.

*Diphyopsis campulifera* EICHENOLTZ, 1820, p. 137, Pl. XII, fig. 6; GEGENHART, 1860, p. 346, Pl. XXX, figs. 23-26.

*Indurata lessouii* ESCHSCHOLTZ, 1820, p. 126, Pl. XII, fig. 2. (Indoxid.)

*Eusau lessouii* HUXLEY, 1850, p. 57, Pl. III, fig. 6; FLEWERS, 1881, p. 166, Pl. VI, figs. 8, 9; CHAM-

し。保護葉は葉狀にして幹の一部及幹群を包む。幹への附着點の背側に球形に近くして稍上下に長き保護葉體囊を見る。保護葉は是より上方に向ひては背側及左右側に襟の如くに立ち、腹側にては兩縁V字形の谷を形れり。保護葉の大部分は附着點より下方にありて、廣き圓錐形の保護葉腔をなせり。保護葉の下縁は左右より斜に切り取られ、背後に於て最も長し。その兩端に鋭き二齒左右相並びて存す。

特別泳鐘は保護葉腔の腹半部を占め、四角柱形にして左右相稱性明かなり。即ち四稜の長さと同端に於る齒の形とが左右對をなせるによりて知らる。四柱面は孰れも多少凸形なるも、腹側(すべて幹に面せる側を腹側とす)の上部にては寒天質中國く樋の如くに掘り取られたる所ありて、是と相對する保護葉の内下面と相擁して、幹室に比すべき一通路を形成せり。側柱の上面に相當する所は、背上方より腹下方に斜に切り取られたる面にして、その中央に寒天質の隆起によりて生ぜる圓錐形の隆起あり、中に短く直線なる柄管走れり。特別泳鐘の泳囊は圓筒形にして、軸は極微弱にS字形に彎曲せり。柄管は泳囊の上腹隅にて四放射管に分岐する故、是等の長さは少しく長短あり。特別泳鐘の下面は四邊形にして四稜の下端強き齒に終り、四齒を連ぬる四邊の中、腹側の一邊のみは殆ど直なれども、他の三邊は半圓弧を畫きて上方に彎入せり。特別泳鐘の下方三分の二の諸稜は皆著明なる鋸齒を

有す。

營養體及觸手は一般の形に異らず。

三崎にて得たる多數の標品にて上泳鐘の長さ四・五乃至一〇耗、幅一・五—三耗。

本種はハックスリーがアウストラリヤ東岸に得て *Diphyes* 屬として報告したるもの、中頃 *Muggieus* に入れられしを、ビゲロー本屬に移せり。但し其理由はレンズ及ファンリウムスデーク二女史の新種 *Diphyes webberi* が是と同様ならしむとの推定に基けるものにして、自ら本種を検したるにはあらず、余の標品は最よくハックスリーの最初の記載に合致するものなるが、幹群の狀況を充分に調べ得たるに、前述の如く特別泳鐘を有せる故 *Diphyes* にあらず *Diphyopsis* に入るべきものなること疑なし。唯本種の下泳鐘は何人も見しことなき故、確定に下泳鐘ありと云ふこと能はず。若し之なければ、ヘッケルのなしたる如く *Muggieus* に入れずして *Doromusius* に入れざる可からず。然れども余の標品にても幹室廣潤にしてフタツクラゲ科らしき所あり(單に想像なれど)、ハックスリーの與へたる圖も亦同様なり。兎に角ビゲローの云ふが如く當分本屬に入るゝを適當とすべし。

附 *Eysaea chaunissonis?*

(第十二版第二十圖)

茲に記載せんとするは所屬未だ明かならざる一種の「ユードキシッド」なるが、或は右のタマゴフタツクラゲ



たる標品の如きは幹室廣濶にして、一見してそのフタツクラゲ亞科のものなることを知り得可し。三崎に最普通なるものゝ一にして、上泳鐘の大なるものは長さ一五耗を超え、後に舉ぐるフタツクラゲモドキと共に大形の種なり。未だ下泳鐘を附着せるものに遭遇せざるが、ビケロ一によれば長さ幅共に上泳鐘の四分の三位、概形は次に舉ぐるフタツクラゲモドキの下泳鐘に似たるも、幹室溝の翼狀部形を異にせり。

クーンは、本種の上泳鐘の五稜は、上端に近き所にて強く突隆して翼狀となれりと記せしが、かゝることは却て少數にして、通常は稜の全長に沿ひて同程度に隆起せるが如し。

#### 屬 フタツクラゲモドキ屬

*Biphyopsis* HAECKEL, 1888.

上泳鐘五角錐形、幹部に特別泳鐘あり。

確實なりと思はるゝ種四、*D. claussonis* (HUXLEY), *D. dispar* (CHAMISSO et EYSENHARDT), *D. hispanicum* MAYER, *D. nitra* (HUXLEY). 三崎にて初めの二を得たり。

#### タマゴフタツクラゲモドキ (第十二版第十九圖)

*Biphyopsis claussonis* (HUXLEY).

*Diphyes claussonis* HUXLEY 1859, p. 36, Pl. I fig. 3.

*Marginea claussonis* HAECKEL, 1888 a, p. 34;

1888 b, p. 137; CHUN, 1892, p. 80.

*Diphyes wuheri* LENS and VAN RIEMSDIKE, 1903, p. 53, Pl. VII, figs. 67, 68.

*Diphyopsis claussonis* BAGLOW, 1911, p. 347.

上泳鐘五角錐形なるも、中央部の膨れ方強き爲五稜を有せる紡錘形をなせり。明かなる鋸齒を有する五稜の中、背側のものと背横側のものとは他の二稜よりも一層外に向ひて凸にして、下端も亦より強き齒に終る。齒は三角錐形にして尖端著しく内方に曲り、相擁して泳囊口を圍めり。

泳囊は泳鐘の形に従ひて紡錘形に近き形をとれり。柄管四放射管等一般の場合に同じ。泳囊口の背壁は下方に延びて幹室との間の隔壁をなせり。その正中線に裂目なし。その兩下端に強き齒あり。幹室口はこの二齒と泳鐘腹側稜の下端なる二齒とによりて圍まる。この四齒を連ぬる四縁の中、兩側のみは極僅に上に向ひて彎入し、他の二邊は深く凹入せり。背側縁は同時に少しく背方に凸出せり。幹室は割合に甚大、大凡鐘狀なるも上半のみを見れば頭の圓き圓筒、下半のみを見れば截頭四角錐形なり。幹室の高さは上泳鐘の長さの半を少しく超え、幹室口の幅は上泳鐘の最大幅の半よりも大なり。

體囊の形は特殊にして、楕圓形に近き紡錘形、長さ泳囊の長さの三分の一弱に相當し、其位置は泳囊の中央三分の一に並びて存す。

幹は長く下垂し、六―七個以上の幹群を擔へること多

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幹室は鍾狀なるも甚淺く、幹室口は四個の齒に圍まる。背壁正中線に裂目あり。

從來馬來地方と東熱帶太平洋とに得られたるものなるが、下泳鍾は不明、幹群に特別泳鍾ありとの事にて本屬に入り居れり。余の標品は、前種と同様、一九一〇年二月三崎に得たる一個の上泳囊にして、長さ約五耗、泳囊口に沿ひての幅二耗、幹群の構造は見るを得ざり。

### トガリフタツクラゲ (第十二版 第十八圖)

#### *Biphyes bojani* (CHUN).

*Doromusia bojani* CHUN, 1892, p. 108, 110, fig. 8.

*Mugginea bojani* SCHNIEDER, 1898, p. 88.

*Diphyes indicus* LENS and VAN RIEMSDIJK, 1908,

p. 44, Pl. VII, fig. 54.

*Diphyes malayana* LENS and VAN RIEMSDIJK,

1908, p. 45, Pl. VII, fig. 55, 56.

*Diphyes gegenbaueri* LENS and VAN RIEMSDIJK,

1908, p. 46, Pl. VII, fig. 57, Pl. VIII, fig. 58.

*Doromusia pictoides* LENS and VAN RIEMSDIJK,

1908, p. 3, Pl. I, fig. 1.

*Diphyes bojani* BRELOW, 1911, p. 251, Pl. VII,

figs. 2, 3; Pl. VIII, figs. 6; Pl. IX, figs. 1, 2; Pl.

X, figs. 2, 3; Pl. XI, fig. 5; Pl. XII, fig. 12.

上泳鍾は下より三分の一の所にて少しく膨れたる五角錐形、五稜著明にして外に向ひて稍凸、下端齒狀突起に終る。就中背側及背横側の三齒は甚鋭き三角錐をなして、尖端少しく内方に曲りつゝ泳囊口を圍む。他の二齒は弱

くして見るに足らず。上泳鍾には尙二つの最強き齒ありて、幹室口の兩側背隅に位置せること一般の場合に同じ。泳囊の下半は殆ど圓筒形、上半は圓錐形、其頂點極泳囊の頂に近けれども、彼の如く尖らずして圓滑なる盲囊をなして終れり。此部分は生時には黃色を帶ぶ。柄管は幹室の頂より起り、幹室と泳囊との間にある寒天質中を下向し、泳囊腹壁正中線を下端より少し上りたる所にて泳囊壁に達し、四放射管に分岐す。

幹室は長き圓錐形にして、大約上泳鍾下半の背半を占む。幹室口は四邊形にして、短き背側縁と左右兩縁とは殆ど直、腹側邊は少しく下に向ひて凹なり。幹室背壁正中線に裂目なし。

體囊は軸の稍彎曲したる長き圓筒にして、泳囊上半部の内の下より四分の三に並びてその腹側に立ち、其彎曲は泳囊腹壁の彎曲に伴へるなり。其起部幹室頂に接する處は細くなれり。

幹群は通常甚多數にして、長く懸垂す。保護葉は寒天質薄けれども割合に大、圓錐形の保護腔を作れり。保護葉の下縁には三個の齒あり、中央より稍左に偏したるもの最大、右側のものは次に次ぎ、左側のものは最も弱し。

營養體は紡錘形、基部淡黃綠色を帶ぶ。よく發育したるものにては二個以上の生殖體の芽あるを常とす。

本種はもとクーンによりてヒトツクラゲ亞科のヤリクラゲ屬に入られたりしものなるが(前項參照)、余が圖示し

泳囊は中央の膨らみたる圓筒形、泳鍾の割合に甚だ大きく、從ひて泳鍾の寒天質量甚だ少し。泳囊も亦泳鍾に伴ひて時計の針と同方向の振れを有すれども、泳鍾の場合の如く之を見るに好都合なる稜を有せざる故、彼の如く著明ならず。

體囊は上方の細き紡錘形、長さ泳鍾の高さの三分一位、下端は正中面上なる幹室頂にあれども、上端は餘程左に偏して、泳鍾の振れに伴へり。

幹室は斜に腹上方に向ひ、稍深く且廣きも、頂點は泳囊口の水平よりも上ること多からず、幹室口は三角形にして、腹側正中線にあるV字形切れ込みの頂と、一對の腹横側齒とをその角頂とす。幹室の背壁は泳囊口との間の扁平なる隔壁なるが、こゝには正中線上に裂目ありて、左右の翼をなせること前種の場合に同じ。

本種は『アルバトロス』號が東熱帶太平洋に得たる表面性の一種なるが、余も亦その上泳鍾一個を一九一〇年二月三崎に得、フタツクラゲ屬のものならむとは推測したりしも、標品不完全にして幹群の状況を見る能はざる爲躊躇し居たりき。余の標品は長さ五耗なりしが、ビゲローによるに、二乃至六耗とあれば、本種は概して小形のものならん。下泳鍾未だ知られず、「ユードキシッド」も亦不明なり。

### ヨチレフタツクラゲ

(第十二版  
等十七圖版)

*Diphyes contorta* TENN. et VAN RIEM-

STRAK.

*Diphyes contorta* LEWIS and VAN RIEMSTRAK.

1904, p. 39, pl. VI, fig. 48-50; Bigelow, 1911, p.

254, Pl. VII, fig. 7, 8, Pl. VIII, fig. 3, Pl. XI, fig. 2.

本種の上泳鍾は前種の場合と同様に著しき右螺旋形の振れを有す。なほ本種にては體囊の曲り甚だしく、是によりても一見して識別し得らる。上泳鍾は中央の膨れたる五角錐形、五稜中背側のものは多少退化的にして、泳鍾の頂迄達せず、他の四稜はよく發達し、下方にては五稜共に鋸齒を有す。背横側面は少しく凸、他の三面は少しく凹にして下方に延び、爲に幹室口は泳囊口よりも下方に位置す。

泳囊は圓筒狀、割合に甚だ大、頂點殆ど泳鍾の頂に達し、口は圓くして廣き縁膜あり。柄管は幹室の頂より起り、正中面を泳囊腹壁の下端に向ひて直走し、茲にて放射管に分岐するも、腹放射管全く短縮して消失し、環管が右の分岐點に來り合する様になれり。他の三放射管の走向は一般の場合と異らず。

體囊は二部分に分れ、柄の如き細き管狀部幹室の頂より起り、背上方に走り、腎臟形の囊狀部に入る。但し此部は其長軸直立せずして、泳囊の膨らみに沿ひつゝ右側に倒れ、油滴を藏する其頂點は恰も泳鍾の腹右面に對する様になれり。



圓錐形なるも、下半部に於ては背壁廣き平面となり、泳囊口の下方に延びて是との間の隔壁をなせり。この隔壁の兩側下端は稍銳き齒となれり。又この隔壁は正中線に裂目ありて、左右の翼に分る。幹室口を圍める四邊の中、背側のものは下に向ひて凹、横側のものは直、腹側のものは外に向ひて凸なり。

體囊は細き管として幹室の頂より起り、次第に徑を増しつゝ斜に腹上方に向ひ、更に折れて上方に向ひ、泳囊の腹側に沿へる長き圓筒狀をなし、遂に上泳鐘の高さの頂より四分の一弱の所に於て圓き頭を以て終る。

幹群は保護葉・營養體・觸手及生殖體より成る。保護葉は圓錐形の保護葉腔を形る。保護體囊の形を決定し得るまで生長せし幹群には未だ遭遇せず。營養體は長き紡錘形なり。

余は一九〇七年夏三崎にて頗る元氣よきもの多數を得たるも、總て下泳鐘を缺ける幼者又は不具者なりき。元來鐘泳管水母は下泳鐘のみにては生存し能はざる故、之をプランクトン中に見ることなきも、上泳鐘のみに幹群の附着せるものは、未だ下泳鐘の發育せざる場合も多けれど、下泳鐘が脫離したる場合も亦少からず。かくても動物の生存に支障なきものと見ゆ。上泳鐘の長さは四乃至一〇耗、幅二乃至四耗、大なるものにては概して細長く、小なるものにては太短きが如し。

從來の報告によれば、下泳鐘は長幅共に上泳鐘の三分

の二強、幹室に相當する凹溝管狀にして、下面左右腹横側に強き齒あり。「ユードキシッド」は古來種々の學名(前掲異名を見よ)によりて報告せられしものにして、保護葉體囊長圓筒形、中央稍紡錘狀に膨れたるものなり。

### ネチレフタツクラゲ (第十二版第十 五十六圖)

*Diphyes spiralis* BIGELOW.

*Diphyes spiralis* Bigelow, 1911, p. 249, pl. VII, fig. 4, pl. VIII, fig. 1, 2, pl. IX, fig. 3, pl. XI, fig. 4.

上泳鐘は中央の膨らみたる爲紡錘形に近くなりたる五角錐形、五稜よく發達し、下部にては鋸齒を有す。最も著しきことは五稜が時計の針と同方向に捩れて螺旋形をなし、泳囊口の水平にて、背側のものは頂點に近づくに従ひ左側に、腹側のものは右側に移る。而して他の種に於ての腹側稜に相當するものは、上端頂點に達せざる中に、行きて腹右側の稜に合するを以て、頂點だけは四角錐形なり。又この腹左側稜の下端は一般の場合と異り、泳囊口と幹室口との隔壁の左下隅に存する強き齒(即ち他の種の腹左側齒狀突起)に一致せり。然るに是と相對せる右側の齒にありては、孰れの稜にも無關係なり。腹右側稜の下端は稜の捩れの爲に丁度腹側正中線に來り、茲に存する幹室腹壁のV字形彎入の頂に合せり。背側稜は捩れ最も強し。是と背横側にある二稜とは、下端毫も齒狀突起をなさず。

例へばビゲローに先つと僅に三年前なる一九〇八年に、レンス及ファン・リームスデーク二女史の作れる六新種の中、右に數へられたるもの二種のみなることによりても一般に推測し得ん。余の見得たるは最初の四種なり。種の區別として採用せらるゝは、上下泳鐘の稜及齒狀突起、體囊・泳囊・幹室等の性狀なり。

### フタツクラゲ (第十二版第十四圖)

#### *Biphyes appendiculata* ESCH-

SCHOLTZ.

*Biphyes appendiculata* ESCHSOLTZ, 1829, p. 133, fig. 7; HUXLEY, 1870, p. 34, PL. I, fig. 2; SCHNEIDER, 1898, p. 85; BIGELOW, 1904, p. 265; 1911, p. 248, PL. VII, fig. 5-6; PL. VIII, 7-8; PL. IX, fig. 6; PL. X, fig. 6; PL. XI, fig. 1.

*Biphyes bipartita* CHUN, 1883, p. 1153; 1897 b, p. 24; MAYER, 1900, p. 74, PL. XXXIV, fig. 114; KÖRNER, 1902, p. 175.

*Biphyes acuminata* GEGENBAUR, 1860, p. 375.

*Biphyes sieboldii* KÖLLIKER, 1853, p. 36, PL. XI, fig. 1-8; GEGENBAUR, 1854, p. 453.

*Biphyes gracilis* GEGENBAUR, 1853, p. 369, PL. XVI, fig. 5-7.

*Eudoria campanula* MÜLLER 1870-71, PL. XI, fig. 1-4, PL. XIII, fig. 10; LENS and VAN RIEMSDIJK, 1908, p. 48, PL. VII, fig. 62. (Eudoxiid).

*Eudoria mesenensis* GEGENBAUR, 1853, p. 285.

(Eudoxiid).

*Eudoria sagittata* HUXLEY, 1850, p. 53, PL. IV, fig. 1. (Eudoxiid).

*Eudoria gagebaruri* HAECKEL, 1888 b, p. 110. (Eudoxiid).

*Eudoria elongatus* HAECKEL, 1888 b, p. 110. (Eudoxiid).

*Eudoria campanula* HAECKEL, 1888 b, p. 111. (Eudoxiid).

上泳鐘は左右相稱形を保てる五角錐形にして、五つの著明なる稜を有す。五稜の中、一對の腹側稜は他の三よりも弱けれども、上方四分の一にては却て是よりも長く突隆し、翼狀をなせり。五錐面の中一對の背横側面及腹側面は狭き二等邊三角形、他の腹横側面は四邊形なり。五稜の下端は強き齒狀の突起をなさず。背側のものゝみ稍鋭く尖れり。

泳囊割合に大にして、上端の細き鈍く尖りたる圓筒形長さ徑に二倍す。その頂點は殆ど泳鐘の頂點に達す。幼き標本にては中央部多少膨れて紡錘形に近き形を取るこゝとあり。上泳鐘の柄管は幹の基部の背側より發し、背方少しく下方に走り、泳囊の腹側に達して四放射管に分る。従つて腹側管は甚だ短く、背側管甚だ長し。環管の基部に廣き縁膜あり。

幹室は頂の少しく腹方に曲りたる鐘狀、甚淺く、上方三分の二が泳囊口の水平より上に位す。幹室の上半部は



於て環管によりて連接せらる。別に左右側各一條の斜に腹側壁を走れる管ありて、横側管にては泳囊の高さの半分程の所にて合し、背側管にては同様に下より三分の一程の所にて合す。此斜走管は本屬の他の種に於ても見らるゝものなれど、この合流點の位置は各の種に於て異なるものなり。

幹室は痕跡的にして、單に上泳鐘下面の腹半、即ち少しく腹側に傾ける底面が、極僅少なる凹陥を示せるのみなりとす。凹面の周圍は腹側と横側とは少しく外に向ひて凸、背側は殆直線若くは少しく凹、背横側隅に弱き齒あれども不著明なり。

體囊は小くして卵形、幹室の上に接す。その長軸は幹室頂即ち底面と約四十五度の角をなせり。

余の獲たる標品は唯一個の上泳鐘のみ。長六・五耗、背側の幅三耗を測れり。完全なるもの又は下泳鐘を未だ發見せざるも、從來の諸報告によるに、此種の上泳鐘の特徴なる、幹室口背壁及泳囊口毫も突起狀をなし居らざる點は、その下泳鐘に於ても亦同様なりと云ふ。余は全形を圖版中に加へ得ざりしを憾み、挿圖第十として他の種 (*G. australis*) の略圖を挟めり。本種は是に比し、體囊が卵形なると、右に擧げたる突起の存せざる點を異にするのみ。

本種は從來太西洋のみにて知られ、分布學上多少注目せられたるものが、今や太平洋にもあること明かなり。

## 第二亞科 フタツクラゲモドキ亞科

*Diphyysinae* HAECKEL, 1888.

泳鐘角錐形、上下殆ど同大、幹群脫離して圓滑なる保護葉を有する「ユードキシッド」となる。

本亞科には頗る多數の屬作られたりしが、今は *Diphyys*, *Diphyopsis*, *Chamiphyes*, *Archisoma* の四屬のみ確實なるが如し。後の二屬は共に新屬にして、他屬との混雜なきも、前二屬は其間に甚だしき混亂あるのみならず、タマクラゲ科のタマクラゲ亞科に屬せる *Mingyacu* 及 *Doromasticu* と交渉少からず。蓋し *Diphyys* と *Diphyopsis* との間の明確なる差は、特別泳鐘の無きと有るとの相違にして、恰も *Mingyacu* と *Doromasticu* との間の關係に同じく、特別泳鐘及下泳鐘の有無は、多くの場合標品不完全にして判定に困難なることなればなり。

## 屬 フタツクラゲ屬

*Diphyes* CUVIER, 1817.

泳鐘五角錐形。幹群に特別泳鐘なし。

最近ビゲローは *D. appendiculata* ESCHSCHOLTZ, *D.*

*spindis* BIGELOW, *D. concolor* LIESS et VAN RIEMSDIJK.

*D. bojani* (CHUN), *D. foerleri* BIGELOW, *D. arctica* CHUN,

*D. steensrupi* GEGENBATH, *D. serrata* CHUN, *D. subtilus*

CHUN, *D. subtiloides* LI et V. R. の十種を認めたるが、

古來尙多數の種名ありて異同を辨ずること頗困難なり。

シロナイダーは、例によりて、本屬をも前屬に合せしめたれど、他に賛同者なし。V. spinosa KEFERSTEIN et EHLERS (挿圖第九) V. pentacantha KÖLLIKER の二種あり。我國にて未だ發見せられず。但し『アルバトロス』號は東太平洋諸所にて第一種を得、デテージは太平洋に本屬ありと批判せり。

#### 第四科

●●●●●●●●  
フタツクラゲ科

Diphyidae ISCHSCHOLTZ, 1829.

圓滑なる一次泳鐘脫離して圓滑なる又は多角形の二次泳鐘を生ず。泳鐘の新陳代謝あり得可きも、同時に存する數は必ず二個にして、上下に並び、其構造を異にす。

#### 第一亞科 ナラビクラゲ亞科

Galeolarinae CHUN, 1897.

泳鐘圓滑にして上下殆同大、幹群は脫離せずして停る。單屬 *Galeolaria* あり。

#### 屬 ナラビクラゲ屬

*Galeolaria* BLAINVILLE, 1831.

現時確に認めらるるもの四種 *G. truncata* (SARS) HUXLEY, *G. australis* QUOY et GAIMARD, *G. quadriradiis* BLAINVILLE, 及 *G. monica* CHUN あり。各多數の異名を有す。種の區別としては、主として上泳鐘の體囊の位置及形狀と、上下の泳囊口に於る齒及翼狀部の形狀とが用ひ

らる。幹室は甚だ淺くして殆どこれなきを以て本屬の通性とす。予の三崎にて見る事を得たるは第一に擧げたる種のみなり。

#### ナラビクラゲ (第十二版第十三圖版)

*Galeolaria truncata* (SARS) HUXLEY.

*Diphyes truncata* SARS, 1846, p. 41, Pl. 7, fig. 1-12.

*Galeolaria truncata* HUXLEY, 1852, p. 38;

HAECKEL, 1888b, p. 151; CHUN, 1897 b, p. 17;

VANHOEFEN, 1906, p. 15, fig. 10-17; LENS and

REMSDIJK, 1908, p. 57; BIGELOW, 1911, p. 346.

*Epilatia truncata* HAECKEL, 1888 a, p. 35.

*Diphyes appendiculata* SCHNEIDER, 1898, p. 85 (partim).

上泳鐘は頂端圓滑となり、且横より壓せられたる圓錐形にして、横側に縱走する一條の稜あれども、頂點並に下端に達することなく、概して不著明なり。泳鐘の大部は比較的大なる泳囊の占むる所となれり。泳囊は下方に於て少しく徑を増し、背側一箇所に弱き縷れ目あり。縁膜はよく發達せり。泳鐘の柄管は體囊の背下隅より起りて、殆ど水平に背方に向ひ、泳囊の腹側に達して四條の放射管に分る。就中腹側管極めて短く、背側管は最も長くして、正中線に沿ひて泳囊壁の最大徑を走り、兩横側管は是と平行して側壁中を走る。四管は泳囊口の周圍に

(論 說) ○鐘泳管水母類 (川村)

# 鐘 泳 管 水 母 類 (四)

(第二十七卷  
第十二版附)

理 學 士 川 村 多 實 二

バタイクラゲ (第十二版第十  
一—第十二圖)

*Hippopodius rugulatus* (HABCKEL)

CHUN.

*Polypheges rugulata* HABCKEL, 1888 b, p. 179, Pl.  
XXIX, figs. 1—8.

*Hippopodius rugulatus* CHUN, 1897, p. 103.

*Hippopodius hippopus* SCHNEIDER, 1898, p. 82,  
(partim).

本種は既に、本誌第二十二卷に於て報告したれば、茲  
には記載を省く。

屬 *Vogtia* KÖLLIKER, 1853.

泳鐘五角形。

- 第九圖。 *Vogtia spinosa*. (マクローヤリ。)  
第十圖。 *Galeolaria australis*. (同右。)  
第十一圖。 *Chamiphys multidentata*. (同右。)  
第十二圖。 *Archisoma mutans* (同右。)

br. 保護葉。  
c. br. 保護葉管系統。  
c. ol. 體囊。  
go. 生殖體。

hy. 幹室。  
n, n<sub>2</sub> 泳鐘。  
ns. 泳囊。  
sp. n. 特別泳鐘。

