

Calyconectid Siphonophorae (V)
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The bracketed [..] and emboldened comments are Totton's marginalia.

No. III Sub-family Abylinae A. Agassiz, 1862

Nectophore angular post-like, the superior nectophore is conspicuously smaller in comparison with the inferior nectophore; the cormidia break off to become eudoxids.

Several genera of this sub-family are more confusing than the members of the previous sub-family. In 1888 Haeckel recognised three genera, *Abyla*, *Bassia* and *Calpe* but later Chun substituted *Abylopsis* for the genus *Calpe* stating that that name had been given to Lepidoptera. Furthermore, he made these three genera sub-genera of the genus *Abyla*. Although Schneider has combined these genera into one, they are at present treated as three separate genera by many scientists. Later the genus *Diphyabyla* was added. This genus is readily distinguished by its resemblance to the previous sub-family.

Genus *Diphyabyla* Lens and van Riemsdijk, 1908

The superior nectophore is angular drill-like and resembles the sub-family Diphyidae.

A species *Diphyabyla hubrechtii* Lens and van Riemsdijk was named for a specimen in the "Siboga" collection and later another specimen was collected on the "Albatross" Expedition. However, in our country it has not been known to occur.

Genus *Abyla* Lens and van Riemsdijk, 1908

The superior nectophore has a polygonal apical plane, the inferior nectophore is like a pentagonal post and the h is like a pentagonal post and the h opens to the outside without becoming a canal. Three species are known, *Abyla haeckeli*, *A. trigona*, *A. leuckartii*. From the specimens obtained at Misaki, the author learned that they all occur in our adjacent waters.

Abyla haeckeli Lens and van Riemsdijk

(Pl. XV, figs. 24-26)

Abyla haeckeli Lens and van Riemsdijk, 1908, p. 32, Pl. 15, figs. 39-41; Bigelow, 1911, p. 222, Pl. 13, figs. 1-2

Abyla trigona Huxley, 1859, p. 47, Pl. 3, fig. 1

? *Amphiroa angulata* Huxley, 1859, p. 64, Pl. 5, fig. 2 (eudoxid)

? *Amphiroa alata* Haeckel, 1888b, p. 156 (eudoxid)

? *Amphiroa dispar* Bedot, 1896, p. 373, Pl. 12, figs. 5-6 (eudoxid)

The superior nectophore is an almost bilaterally symmetrical hexagonal block. Six surfaces occur on the dorsal and the ventral sides and the entire clock is flattened laterally. The dorsal surface is a long perpendicular rectangle and is divided into an upper and a lower part by a straight horizontal ridge. The upper surface is rectangular, diagonally facing upward. The lower surface ends in a process where both lateral ridges join the lower margin and is shaped like inverted isosceles triangle with a height three times its width. The dorso-lateral surface is hexagonal and surrounded by two parallel longitudinal ridges, an upper and lower ridge running from the upper ventral surface toward the lower dorsal surface. The upper ventral margin is

perpendicular to the latter and has a strongly arched lower dorsal margin. Next the ventral lateral surface is divided into two sections - the lower half is square and surrounded by two longitudinal ridges, a nearly horizontal upper ridge and the arched lower margin. The upper half is a slightly larger pentagon, and is situated between the apical surface, the upper and lower ventral surfaces, the lower half of the ventral lateral surface and the dorsal lateral surface and faces somewhat diagonally upward. The apical plane is the upper surface of the so-called hexagonal block. It is also angular but it is laterally flattened. Also the upper part of the ventral surface is slanted, making it much smaller than the cross-section of the “post”. On the other hand, the bottom surface is extremely large and unevenly divided into dorsal and ventral halves by a lateral ridge - the dorsal half is square and contained the nectosac opening while the ventral half is nearly pentagonal and is entirely occupied by the mouth of the hydroecium. Each surface is somewhat depressed. At the lower part of the superior nectophore, the ridges are distinctly serrated.

The cylindrical nectosac occupies the dorsal one-third of the superior nectophore. Its length is four times greater than the diameter. Its lower opening is comparatively small and has a wide velum. Four radial canals and the circular canal are of simple structure. The stalk canal is short and buds out from the upper corner of its ventral side, immediately reaching the apex of the hydroecium.

The somatocyst is an extraordinarily large elliptical sac and is situated along one third of the ventral side of the nectosac. It is filled with large bubble-like polygonal cells. A short canal connects its upper dorsal corner with the apex of the hydroecium.

This species was established for a superior nectophore from the “Siboga” expedition. However, *Abyla trigona* Huxley (1859) does not agree with the description of that species described below but rather to the species in question. As to its inferior nectophore, not much is known at present except that it can be vaguely recognised from Haeckel’s report. The author obtained a superior nectophore in July, 1906 at Misaki. The length and the dorsal ventral width measured 5 mm and 4.5 mm respectively. No difficulty was encountered in identifying the species. Its eudoxid is as yet unknown. *Amphiroa angulata*, *A. alata*, *A. dispar* etc, listed as synonyms above were given because Bigelow so classified them.

Abyla trigona Quoy and Gaimard

(Pl. XV, figs. 27-28)

Abyla trigona Quoy and Gaimard, 1827, p. 14, Pl. 2B, figs. 1-8; Eschscholtz, 1829, p. 131; Blainville, 1830, p. 123; Gegenbaur, 1860, p. 337, Pl. 26-27, Figs. 9-12; Chun, 1888, p. 1160; 97b, p. 31; Schneider, 1898, p. 90; Lens and van Riemsdijk, 1908, p. 23, Pl. 4, figs. 34-36; Bigelow, 1911, p. 221, Pl. 13, figs. 3-4.

Amphiroa alata Blainville, 1830, p. 121; 1834, p. 133, Pl. 4, fig. 1; Huxley, 1859, p. 64, Pl. 5, fig. 1; Chun, 1898, p. 1160; 1897, p. 31; Lens and van Riemsdijk, 1908, p. 28, Pl. 4, figs. 37-38 (eudoxid)

Eudoxia trigona Gegenbaur, 1860, p. 349, Pl. 27, figs. 10-12

Abyla carina Haeckel, 1888b, p. 156, Pl. 35

Amphiroa carina Haeckel, 1888a, p. 33; 1888b, p. 114, Pl. 36 (eudoxid)

Amphiroa trigona Haeckel, 1888a, p. 33; 1888b, p. 113 (eudoxid)

The polygastric generation of this species is well known but unfortunately the author had not yet seen it. Although this species, in general, resembles the preceding one, the most readily distinguishable characteristic on the superior nectophore is that

the ventral surface of this species is long and narrow perpendicularly. Its mid-portion is slightly convex without being divided into two parts as in the previous species. The inferior nectophore, like the superior one, is a triangular drill-like shape. (Hence, this species name was derived). It is laterally flattened. Although it has three ridges - dorsal, ventral and left lateral - there is another inconspicuous ridge on the right side [? quoting Bigelow], indicating its original square shape. The eudoxid of this species under the name *Amphiroa alata* is quite familiar and since the catch of the type specimen in Torres Strait by Huxley in 1856, its occurrence in the Atlantic and Mediterranean have often been reported. In 1860, Gegenbaur positively identified this as the monogastric generation of this species. Furthermore, it had been seen already in the Pacific and Malayan waters. The author, too, obtained a specimen at Misaki. Therefore, the description is given below. The bract resembles a square post whose lower end appears to have a deep gouge on its ventral side. The horizontal upper surface is trapezoidal. The ventral margin is longer and somewhat convex outwardly. The dorsal margin is shorter and outwardly concave. The other two margins from the ventral side to the dorsal side join laterally. With this as the upper margin the right and left surfaces are vertical, slightly concave and unevenly pentagonal. The upper and dorsal margins are almost the same length but the ventral margin is shorter. The conspicuously arched lower ventral margin and the lower margin are shortest. The dorsal surface is an elongate rectangle while the ventral margin is a wide rectangle. The dorsal half of the lower surface of the bract is a small, nearly square horizontal surface. However, the ventral half contiguous to this is deeply gouged and forms the opening to a large bracteal cavity. Its approximate shape is a trapezoid and the ventral surface is three times the length of the dorsal surface.

The bracteal cavity is bell-like, slightly flattened laterally. The apex turns towards the upper dorsal side. In the dorsal half of this cavity, the siphon and the tentacle are situated while in the ventral half there are a small number of gonophores (gonocalyx). This terminology is used because in addition to acting as a gonophore, it often functions as a subumbra nectosac. The word also can be used for members of the preceding sub-family as well. The large somatocyst occupies the dorsal half of the bract and is filled with large, oval bubble-like cells. Two small bracteal canals branch out, close to the apex of the bracteal cavity near the upper ventral surface of the somatocyst. At first horizontal they run radially towards the lateral ventral corners and then diagonally upwards towards an angular corner but without reaching it. They end blindly in club-shaped sacs.

Originally the gonophore is a cone, hanging from a square post but when there are a large number, the connections become arrow-like. Therefore, the shape sometimes becomes symmetrically pentagonal, with only the arrow-like surfaces remaining flat while other surfaces become somewhat depressed. All five ridges are serrate on the lower half and end in sharp teeth. The nectosac of the gonophore is long and columnar, with a round and wide velum. The radial canals and the circular canal are simple.

The specimen studied by the author possessed a bract measuring approximately 5 mm in length and 6 mm in width and the gonophore 5.5 mm in length and 2.5 mm in width.

Abyla leuckartii Huxley

(Pl. XV, figs. 29-31)

Abyla leuckartii Huxley, 1859, p. 49, Pl. 3, figs. 2a-2b; Lens and van Riemsdijk, 1908, p. 34, Pl. 5, figs. 42-46; Bigelow, 1911, p. 216, Pl. 13, figs. 5-8, Pl. 15, figs. 3-4

Abyla trigona Chun 1897b, p. 31

Enneagonum leuckartii Schneider, 1898, p. 93

The shape of the superior nectophore resembles that of the previous species, but it is somewhat simpler. The upper surface is long, hexagonal, slightly convex, and the dorsal surface is long, rectangular with the lateral ridges ending in strong drill-like processes at the base. Nearly the entire upper part of the lateral surfaces are vertical elongated quadrangles due to a weak process in the middle of the lower margin which constitutes a corned angle, its general shape is pentagonal. However, near the ventral surface on this surface is an arched longitudinal ridge which separates the plane into two uneven parts. The ridge, however, ends inconspicuously some distance above the weak process in the middle described previously. The ventral surface might be called a rectangle but since the lateral ridges join in a weak process at the lower end, it resembles a long, narrow, inverted isosceles triangle. The lower surface is a long pentagon. The dorsal half contains the nectosac opening and ventral half the hydroecium opening.

The somatocyst is extremely long oval, filling on third of the ventral side of the superior nectophore. Its long axis is almost vertical. The nectosac is cylindrical, becoming smaller at the upper end. Its structure is similar to other species. The hydroecium, too, is cylindrical but exceedingly deep. The opening flares out, somewhat resembling a trumpet, and bends slightly towards the ventral side.

Although this species had been known for a long time, its inferior nectophore was never found. The only information available is the discovery of the bud of an inferior nectophore in the hydroecium of a specimen caught on the "Albatross" Expedition. From this its approximately square shape was definitely established. The author's specimen had only a superior nectophore measuring 6 mm in length and 3.2 mm in width, collected at Misaki, 3 January, 1907. The structure of the hydroecium was difficult to study because it contracted. The inferior nectophore was missing. Although Chun has identified this species as identical with *Abyla trigona*, it is quite incorrect. The eudoxid of this species is unknown so far. However, *Ceratocymba asymmetrica* (= *C. sagittata*) caught by Bedot as well as the "Siboga" Expedition may belong to this species. Although this individual generally resembles *Amphiroa alata*, the eudoxid of the species discussed above, has the characteristic of having the lower end of the bracteal somatocyst narrowly pointed and bent like a hook. It has not been seen in our country.

Genus *Abylopsis* Chun, 1888

The top of the superior nectophore has no flat surface but a ridge formed by the junction of both lateral surfaces is present. The hydroecial cavity opens to the outside and is not like a canal.

Two species, *Abylopsis tetragona* and *A. eschscholtzi*.

Abylopsis tetragona Otto

(Pl. XV, figs. 32-36)

Pyramis tetragona Otto, 1823, p. 306, Pl. 42, figs 2a-2e

Calpe pentagona Lesson, 1843, p. 449

- Abyla pentagona* Eschscholtz, 1829, p. 132; Leuckart, 1853, p. 56, Pl. 3, figs. 1-6; 1854, p. 11, Pl. 11, figs. 1-10; Kölliker, 1853, p. 41, Pl. 10; Vogt, 1854, p. 121, Pl. 20, figs. 407, Pl. 21, figs 3-6, 10-13; Huxley, 1859, p. 40, Pl. 2, fig. 2; Gegenbaur, 1860, p. 349, Pl. 28, figs. 17-19; Fewkes, 1874, p. 318, Pl. 3; Chun, 1897b, p. 30; Lens and van Riemsdijk, 1908, p. 17, Pl. 2, figs. 19-20; Bigelow, 1911, p. 224, Pl. 14, figs. 5, 7, Pl. 15, fig. 2
- Aglaisma baerii* Eschscholtz, 1829, p. 129, Pl. 12, fig. 5
- Diphyes calpe* Quoy and Gaimard, 1834, p. 89, Pl. 4, figs. 7-11
- Aglaisma pentagonum* Leuckart, 1853, p. 150, Pl. 4, figs. 7-11
- Eudoxia cuboides* Leuckart, 1853, p. 54, Pl. 3, figs. 7-10; Chun, 1885, p. 525, Pl. 2, fig. 11; Bedot, 1896, p. 375 (eudoxid)
- Aglaisma elongata* Huxley, 1859, p. 61, Pl. 41, fig. 3 (eudoxid)
- Aglaisma gegenbauri* Haeckel, 1888b, p. 119, Pl. 40 (eudoxid)
- Calpe gegenbauri* Haeckel, 1888b, p. 165, Pls. 39, 40
- Calpe huxleyi* Haeckel, 1888b, p. 164
- Aglaisma cuboides* Chun, 1897b, p. 30; Lens and van Riemsdijk, 1908, p. 19, Pl. 2, fig. 21 (eudoxid)
- Abyla tetragona* Schneider, 1898, p. 89
- Abyla huxleyi* Agassiz and Mayer, 1902, p. 166, Pl. 11, fig. 48

The difference in size of the superior and inferior nectophores, which is characteristic of this sub-family, is most conspicuous in this species. The superior nectophore is not one fifth the length of the inferior nectophore. The long axis is at an angle of 60° to the inferior nectophore being attached on the ventral side of the upper end of the latter.

The superior nectophore is a laterally symmetrical, pentagonal post lying sideways with one of its five ridges facing upward. The irregular pentagonal facets form the dorsal and ventral planes. The dorsal facet is small and slightly concave while the ventral facet is larger and somewhat convex. In their natural position they both form approximately at 60° angle with the vertical plane, maintaining one of the five sides below and its apical angle above. A pair of lateral apical facets form a long rectangle extending from the dorsal to the ventral facets or vice versa, coming together at the top like the peak of a roof. Next to these the two corresponding lower lateral facets are extremely large, and the greater part of these facets are rather long rectangles. The lower ventral corner protrudes further to form a still smaller extension. The irregular lower facet is a long, narrow rectangle which is divided into an upper two-thirds and a lower one third by a very prominent lateral ridge. The upper part contains the nectosac opening and the lower the hydroecium.

The nectosac is situated in the gelatinous substance of the dorsal half of the superior nectophore. It is a comparatively small cylindrical sac. The stalk canal immediately turns from the apex of the hydroecium towards the ventral side of the nectosac. The length of the radial canals are not equal. The dorsal canal is the longest and the ventral canal the shortest. The conical hydroecium is in the ventral lower corner of the superior nectophore, with its apex reaching to the exact centre of the nectophore. From this two canals extend upward through the arrow-like surface on both dorsal and ventral sides, and a long stem extends downward through the hydroecium of the inferior nectophore. The large hemispherical somatocyst has a bubble-like cellular wall. At the lower dorsal corner is the entrance of the canal from the hydroecial apex. In addition, there is a narrow blind canal, protruding upward at

the upper dorsal corner. The end of the latter is inflated like a ball near the centre of the apical ridge. In this oil drops are stored.

The inferior nectophores are elongate, decapitated pentagonal drills. Although the upper two-thirds of the five ridges are approximately the same, the lower one third shows considerable variation in their development. Also, not only do the teeth at the lower ends differ in size, but each one appears to rotate slightly counter-clockwise. The apical surface of these nectophores correspond to the so-called decapitated part, cut diagonally from the dorsal to the ventral side. At the ventral corner, it abruptly protrudes in a triangular drill-like process which fits into the hydroecium of the superior nectophore and attaches to the stem. The lower surface of this nectophore is irregularly pentagonal, with the round nectosac opening in the centre. Of the five tooth-like processes which surround this opening, the one at the left ventral corner is the largest, the next at the right dorso-lateral corner is nearly the same size, those at the right ventral and left dorso-lateral corners are much smaller. The one on the dorsal side is weak and inconspicuous.

The hydroecium of the inferior nectophore is not a blind depression but, as in many other case, it is a vertical canal. However, it does not completely develop into a canal, but rather a pair of leaf-like processes on the left ventral surface overlap as do the collars of a kimono, forming a hollow passage. In every case, the right process overlaps the left. Each ridge of this nectophore has conspicuous serrations on the lower part.

The large cylindrical nectosac of the inferior nectophore lies somewhat dorsal to the central axis. The radial canals as a rule are irregular. The left lateral and the ventral canals do not connect with the circular canal but anatomise near the lower end of the left lateral canal, forming a wicket. The upper end of the right lateral canal bends at a 90° angle at about two-thirds from the lower end and does not converge as do the other three canals. It connects somewhere in the middle of the ventral canal. Thus, at the lower end of the right lateral canal another wicket can also be seen.

The stem entering the hydroecium of the inferior nectophore usually has more than 20 cormidia. These consist of a bract, a siphon, a tentacle, and a gonophore bud. The sex organ apparently matures after the eudoxid breaks away from the parent. In the past it was given the generic name of *Aglaisma*.

This species is the largest and most common one in this sub-family. It has been reported from the Mediterranean, the Atlantic, the Indian Ocean, etc. If our adjacent waters are representative of the North-eastern Pacific, it may well be said that this species occurs in every ocean of the world. The largest specimen studies by the author was collected by the late Professor Misaku, off Okisu, in Suraga Bay. The colony (superior and inferior nectophores) measured 30 mm in length and 9 mm in width. Thos ordinarily found near Misaki are about 10-25 mm in length and 3.5-8 mm in width.

Next the author will describe the eudoxid of the species *Aglaisma cuboides* Leuckart. The shape of the bilaterally symmetrical bract is a cube whose lower end is slightly wider and appears to have a wedge-shaped posterior process. The upper facet is almost square; the ventral facet is a rather elongate trapezoid; the dorsal facet is pentagonal, with an additional triangle under the trapezoid. Both lateral facets are almost trapezoidal but the dorsal margin is longer than the ventral margin and consequently the lower margin drops as it approaches the dorsal facet. The lower surface is nearly square, and excluding the process which arises near the dorsal half, it is practically entirely the opening of the bracteal cavity. This cavity is a bell-like

depression which slants slightly toward the lower ventral surface. The apex is approximately in the centre of the bract. On the dorsal side of the opening is a wing-like part which is surrounded by three weak tooth-like processes. Each ridge of the bract is nearly straight and serrate. The bracteal somatocyst is located in the centre and consists of a small ball-like part next to the apex of the hydroecium with four blind processes resembling a bird with its wings spread. Of the four processes the upper and lower ones in the true centre plane are small; one is vertical near the upper surface of the bract, and is inflated. The inflated portion is filled with oil drops. The other, running downward along the dorsal wall of the bracteal cavity, terminates blindly at about the level of the lower dorsal corner of the lateral surface. The remaining two lateral processes are conspicuous, extending toward the ventro-lateral surface. They also end blindly with an additional downward bend.

A large flexible siphon with a long tentacle occurs on the dorsal side of the bracteal cavity. The gonophore, that is, the gononectophore, is on the ventral side of the siphon but when more than two are present, they are lateral. The shape of a mature gonophore appears as a conical process attached to the top of a four cornered post within an inflated mid-section. Four ridges on the gonophore are well developed and conspicuously serrate. They end in four triangular drill-like teeth of approximately equal size. The nectosac opening of the gonophores has a wide velum and is surrounded by teeth.

The four radial canals of the nectosac are simple and of equal length. At the upper ventral corner (the dorsal side, as seen from bracteal side), they converge with the stalk canal which passes through the gelatinous part and enters the inner cavity of the stem near the pointed end of the gonophore. The spadix suspended within the nectosac is comparatively large. Since our specimen is female, about twenty eggs are stored within it. When there are more than two gonophores they are, as a rule, of the same sex. Of many specimens obtained at Misaki in the winter and spring, the vertical dimension of the bract measured 4-5 mm in length and 3-4 mm in width. A large gonophore measured 4-5 mm in length and 3 mm in width.

Abylopsis eschscholtzi (Huxley)

(Pl. XV, figs. 37-38)

Abylopsis eschscholtzi Huxley, 1859, p. 60, Pl. 4, fig. 2; Chun, 1888a, p. 1160; Lens and van Riemsdijk, 1908, p. 25, Pl. 3, figs. 18-31 (eudoxid)

Abylopsis quincunx Chun 1888a, p. 1160; Bedot, 1896, p. 375

Abyla (*Abylopsis*) *quincunx* Chun, 1888b, p. 29 (eudoxid)

Aglaisma quincunx Agassiz and Mayer, 1899, p. 180; Mayer, 1900, p. 78 (eudoxid)

Aglaisma cuboides Mayer, 1900, p. 77, Pl. 30, fig. 104 (eudoxid)

Abyla quincunx Mayer, 1900, p. 77, Pl. 34, figs. 115-117; Lens and van Riemsdijk, 1908, p. 21, Pl. 3, figs. 22-27

Abyla tetragona Schneider, 1898, p. 89 (partim)

Abyla pentagona Mayer, 1900, p. 77, Pl. 30, figs. 101-103

Cumia capillaria Mayer, 1900, p. 78, Pl. 27, fig. 90

This species is very like the previous species. Its structural resemblance is most striking. However, as with the previous species, this has been described in comparatively great detail. Hence, the differences can be readily recognised. For example, in the superior nectophore, the lateral canals of the nectosac in the preceding species branch from the stalk canal, turn upward, and then downward while in this species they immediately turn downward. Five teeth-like processes on the lower ends of the inferior nectophores are conspicuously uneven in *tetragona*. On the

other hand, they are developed almost to the same extent in *eschscholtzi*. The wing-like processes which surround the hydroecium of these species overlap laterally in the former and the left process has large serrations, but in the latter, the serrations are on the right process. Also, the four radial canals are variable in the previous species but in this species they are constant. As a whole, this species is smaller and the differences in size between the superior and inferior nectophores is not so great as in the other.

Although the author has not obtained specimens of polygastric generation of the species, I collected specimens of the monogastric generation at Misaki and learned of its occurrence in our nearby waters. This is an eudoxid which has hitherto been known under the name *Aglaisma quincunx*. Though it is quite similar to the eudoxid of the previous species it is, as a whole, readily distinguishable from the other by the characteristic shape of its bract. A brief description of this eudoxid is given below:

The bract is a symmetrical pentagon with a flat surface at the top. However, this shape is not entirely different from that of the preceding species. For example, if the lower inflated part of the latter were to be exaggerated and the suspended cuneiform posterior process greatly enlarged, then it would approach the shape of the bract in this species/ The dorsal facet of the bract is regularly pentagonal and its ventral surface is similar to it but is cut off in a fan-like shape at its lower angle. The apical facet of the bract is nearly square and the upper lateral facets are long dorso-ventral rectangles but the remaining lower lateral facets are like a square with one corner cut off in an arc.

The shape of the bracteal somatocyst is identical with that of the previous species, only its position is more dorsal. Consequently, the major axis of the bell-shaped bracteal cavity slants laterally from the dorsal centre to the lower ventral corner. Other parts are not particularly different from those of the previous species.

The bract of the author's specimen measured 5.5 mm in length and 6 mm in width and its largest gonophore (male) was 5 mm in length and 4 mm in width.

Genus *Bassia* L. Agassiz, 1862

The superior nectophore lacks an apical facet. The dorsal ridge is not present on the inferior nectophore, but the hydroecium is developed into a perfect canal. Only one species, *Bassia bassensis* is known. This was also caught off Misaki.

Bassia bassensis Quoy and Gaimard

Diphyes bassensis Quoy and Gaimard, 1834, p. 91, Pl. 7, figs. 18-20

Calpe bassensis Lesson, 1843, p. 451

Abyla bassensis Huxley, 1859, p. 45, Pl. 2, fig. 1; Schneider, 1898, p. 91; Lens and van Riemsdijk, 1908, p. 26, Pl. 4, fig. 32

Bassia bassensis Bigelow, 199, p. 229, Pl. 12, fig. 8, Pl. 14, fig. 9

Sphenoides australis Huxley, 1859, p. 62, Pl. 4, fig. 4; Chun, 1888, p. 1160; Haeckel, 1888b, p. 360; Bedot, 1896, p. 375; Lens and van Riemsdijk, 1908, p. 26, Pl. 4, fig. 33 (eudoxid)

Abyla perforata Gegenbaur, 1860, p. 356, Pl. 29, figs. 20-21; Chun, 1897b, p. 32

Bassia perforata L. Agassiz, 1862, p. 372; Chun 1888, p. 1190; Haeckel, 1888b, p. 160; Bedot, 1896, p. 374

Bassia obeliscus Haeckel, 1888a, p. 36; 1888b, p. 160, Pl. 37 (eudoxid)

Sphenoides obeliscus Haeckel, 1888a, p. 33; 1888b, p. 116, Pl. 38 (eudoxid)

Sphenoides perforata Haeckel, 1888a, p. 33; 1888b, p. 116; Chun, 1897b, p. 32 (eudoxid)

Since this species is conspicuously different in every way from several other species which have already been discussed, it is extremely easily to differentiate it. The superior nectophore is approximately one third the inferior nectophore in size. The major axis of both nectophores is nearly vertical. While the nectosac of the superior nectophore is horizontal, it is vertical in the inferior nectophore.

Although the shape of the superior nectophore is like a low pentagonal post, its major axis is at right angles to the axis of the post and runs from one edge to one side plane. In the natural position, both ends of the post, that is, the dorsal and the ventral surfaces are horizontal. The nectophore with its dorsal surface upward, is set with its ventral plane on the upper plane of the inferior nectophore. The dorsal surface is pentagonal and slightly concave while the ventral surface is slightly larger and somewhat convex. The two upper lateral facets (dorso-lateral facets as seen from the inferior nectophore) are rectangular, while the lower lateral facets are pentagonal. The uneven lower surface is rectangular and divided by a sharp lateral ridge into a large and a small facet. The large facet of the dorsal side is vertical in its natural position, with the nectosac opening in the centre. The small facet of the ventral side slants toward the lower ventral side and is entirely occupied by the opening of the hydroecium.

The nectosac is egg-shaped and its lower half opens on the dorsal side. The four radial canals are simple and almost identical in length. The stalk canal is extremely short. The hydroecium is nearly conical and in its natural position is under the nectosac. Although the somatocyst is generally found leaning towards the ventral side in this species, it is in the centre over the ventral and dorsal surfaces directly above the nectosac. Consequently, in its natural position, the globular somatocyst of bubble-like cells is horizontal and parallel to the nectosac. Between it and the apex of the hydroecium there is a small connecting canal with oil drops. The somatocyst does not branch to form blind processes, as is the case in the two previous species.

The inferior nectophore is like a decapitated four-cornered drill. Its upper surface is square and near its ventral margin is a drill-like projection. This fits into the hydroecium of the superior nectophore. It contains the upper opening of the canal of the hydroecium of the inferior nectophore on its ventral surface. In the inferior nectophore like the upper surface, the lower one is square with its four margins curved in an arc. Of the four sides, the two lateral surfaces are smaller than the dorsal one but larger than the ventral. All four surfaces are somewhat convex and the four ridges are minutely serrate, each ending in a three-corned drill-like tooth. The right ventral and the left dorsal teeth are large and strong and the other two are small and weak. The left ventral tooth is especially weak. Also, it is pointed and bends toward the median line instead of hanging straight down.

The nectophore (?? nectosac) is large and cylindrical with an inflated middle. Its height is three times its width. The stalk canal enters the gelatinous conical projection from the stem, branches into four radial canals at the lower ventral corner of the nectosac. The cavity canal corresponding to the hydroecium is formed by a fusion of the upper two-thirds of the lateral wings. It is, therefore, a perfectly cylindrical canal for the stem. But at the lower end of this canal, the right wing overlaps the left.

The author was able to obtain only one specimen at Misaki, in December 1907. Its total length was 9 mm and its width near the lower end, 5 mm.

The eudoxid of this species was often found at Misaki. Therefore, the author will describe it below.

The bract of this eudoxid is laterally symmetrical, and its upper and lower halves are each trapezoidal. The dorsal surface is rhombic, the two upper margins of each are slightly longer than the lower two. The pair of upper dorsal facets are nearly square, and are joined by a straight ridge. Contiguous to these are two approximately rectangular upper ventral facets. Their lateral margins are rather smooth and sharp like the other ridges but not serrate. The lower lateral facets are like an irregular pentagonal surface with a concave cut across its ventral margin. It is surrounded by serrate ridges. The ventral surface is almost hexagonal and forms the opening of the bracteal cavity. Six teeth-like processes surround the opening.

The bracteal cavity is bell-shaped with the main axis curved convexly toward the dorsal side. The somatocyst, at the apex of the bracteal cavity, extends towards the centre where the four ridges converge. However, it ends blindly before reaching this point. Large oil drops are stored at the base of the somatocyst on the dorsal side. A small canal branches off in an arc along the dorsal side of the bracteal cavity. It also ends blindly. The shapes and the positions of the siphon, tentacle, gonophore, etc. are almost identical to those of the species previously discussed. Therefore, the discussion of these will be omitted here.

The length of the bract is 3-5 mm and the width 1.5-2.5 mm. The length of the largest gonophore is 3 mm and the width 1.5 mm.

The author has completed the discussion of the siphonophores (Calyconectid Siphonophorae). Although the references should be inserted here, it would be extremely uneconomical to do so from the standpoint of printing because there are so many. Therefore, they will be omitted. However, if one wishes to refer to the original publications for the synonyms, etc., one can locate the references in the bibliography of either the "Siboga" or the "Albatross" Reports as the names of the investigators with dates have been given by the author throughout the report.

- Figure 30. *Abyla leuckartii* (superior nectophore), dorsal view, x6
 Figure 31. *Abyla leuckartii* (superior nectophore), ventral view x6
 Figure 32. *Abylopsis tetragona* (superior nectophore), lateral view x6
 Figure 33. *Abylopsis tetragona* (superior nectophore), ventral view x6
 Figure 34. Upper end of inferior nectophore of above, ventral view x6
 Figure 35. Eudoxid of above, lateral view x 6
 Figure 36. Eudoxid of above, ventral view x 6
 Figure 37. *Abylopsis eschscholtzi*, lateral view x 6
 Figure 38. *Abylopsis eschscholtzi*, ventral view x 6
 Figure 39. *Bassia bassensis*, lateral view x 6
 Figure 40. *Bassia bassensis*, ventral view x 6
 Figure 41. Eudoxid of above, lateral view x 6
 Figure 42. Eudoxid of above, ventral view x 6

br. bract; c.ol. somatocyst; c.ol.br. bracteal somatocyst; hy, hy1, hy2. hydroecium; n1, n2, nectophores; n.go1, n.go2. "gonophore", ns, ns1, ns2. nectosac; p. siphon; t. tentacle.

置に於ては柱の兩端面即ち泳鐘の背腹兩面が水平に位置し、泳鐘はその背面を上に向け、腹面を以て下泳鐘の上面に載れるなり。背面は五角形にして少しく凹、腹面は之より少しく大にして僅に凸、一對の上横側面(下泳鐘より云へば背横側面)は矩形、一對の下横側面は五角形、不對の下面は矩形にして鋭き横稜によりて大小の二部に分たれ、背側の大なる面は自然の位置に於て垂直に位し、その中央に泳囊口あり。腹側の小なる面は斜に下腹側に向ひ、全部幹室口の占むる所となれり。

泳囊は卵形、泳囊の下半部背側にあり、四放射管は始と同長、走向簡單なり。柄管甚だ短し。幹室は略ぼ圓錐形、自然の位置に於て泳囊の下に位す。體囊は元來腹側に偏して存すべきものなるも、本種に於ては腹背の中央、泳囊の直上に(従つて自然の位置に於ては之と水平に並びて)あり。球形にして中に泡狀細胞を含む。幹室頂との間には細管の連絡あれども、前二種の如く油滴を藏する處が盲狀の突起として分出し居らず。

下泳鐘は截頭四角錐形、上面は四角形にしてその腹邊に近く角錐形の突隆部あり。之れ上泳鐘の幹室中に入る所にして、その腹側に下泳鐘幹室腔管の上端開口を有す。下面も亦四角形にして、弧形に彎入せる四邊を有す。四個の側面の中一對の横側面は背側面より小にして、腹側面より大なり。四面は皆僅に凸、四微は微細なる鋸齒を有し、下端は各三角錐形の突起に終れり。此中右腹と

左背とが強大にして、他の二は弱小なり。特に左腹齒最も弱く發達し、且つ尖端直下方に向はずして少しく正中線に傾けり。

泳鐘は大きく、中央の膨らみたる圓筒狀、高さ幅に三倍す。幹より圓錐突起部の寒天質中に入りたる柄管は泳囊の腹下隅に於て四放射管に分る。幹室に相當せる腔管は左右翼が上方二分の二に於ては癒合せるがために、完全なる圓筒狀管となり、幹は此間を貫きて垂下す。下方三分の一に於ては右翼左翼の上に重れり。

余の得たるは一九〇七年十二月三崎に得たる唯一個、全形長さ九耗、幅下部に近き所にて五耗。

本種の「ユードキシッド」には三崎に於て度々接したり。左に之を記すべし。

保護葉は完全なる左右相稱を保ち、上下兩半各楔形をなせり。背側間は菱形にして上の二邊は下の二邊より少しく長し。一對の上背側面は殆ど正方形、直線の一枚によりて左右相會す。之に續きて一對の上腹側面ありて略ぼ矩形を爲せども、その腹側縁は少しく圓滑にして他稜の如く鋭く且つ鋸齒を有することなし。一對の下横側面は不正五角形の腹側邊を凹弧形に截り去りたるが如き形にして、周邊皆鋸齒を有す。腹側面は大凡六角形にして、總て保護葉腔の開口部なり。周圍に六個の齒狀突起ありて、腔口を圍みて立てり。

保護葉腔は主軸が著しく背側に向つて凸に彎曲したる

此形は前種の保護葉の形と全く懸絶するものに非ず、前種の場合の下膨れ方を更に増大し、下垂せる楔状の尾突起を強く擴大せしむれば則ち本種の場合に達す可し。

保護葉の背面は正五角形、腹面は之と同じ正五角形を下の角頂の所にて扇形に截り取れるが如き形なり。保護葉の頂面は殆ど正方形、左右一對の上横側面は背腹に長き矩形、而して残りの一對なる下横側面は正方形の一隅を弧形に截り去りたるが如き形をなせり。

保護葉體囊の形は全く前種と同じく、唯其位置少しく背側に偏して存す。従つて鐘狀をなせる保護葉腔の主軸は背側中央より腹下隅に向ひ、横斜に位置せり。其他の構造は別に前種と異なる所なし。

余の標品は保護葉の長さ五・五耗、幅六耗、最大なる生殖泳鐘(雄)長さ五耗、幅四耗あり。

屬 トウロウクラゲ屬

Bassia L. AGASSIZ, 1862.

上泳鐘頂面なし、下泳鐘の背側稜なく、幹室は完全なる管となれり。一種 *B. bassensis* あるのみ、三崎にも之を得たることあり。

トウロウクラゲ (第十五圖版)

Bassia bassensis QUOY et GAIMARD.

Diphyes bassensis QUOY and GAIMARD, 1834, p. 51, pl. 7, fig. 18-20.

Cybele bassensis LESSON, 1813, p. 451.

(論説) ○鐘泳管水母類(五)(川村)

Abolla batensis HUXLEY, 1859, p. 45, pl. 2, fig. 1; SCHNEIDER, 1858, p. 91; LENS and VAN RIEMSDIJK, 1908, p. 56, pl. 4, fig. 32.

Bassia bassensis BIGELOW, 1911, p. 229, pl. 12, fig. 8, pl. 14, fig. 9.

Sphenoides australis HUXLEY, 1859, p. 62, pl. 4, fig. 4; CHUN, 1898, p. 1160; HAECKEL, 1888 b, p. 360; BRDICH, 1896, p. 375; LENS and VAN RIEMSDIJK, 1908, p. 56, pl. 4, fig. 33. (Endoxid).

Abolla perforata (EISENBAUR, 1860, p. 35), pl. 29, fig. 20, 21; CHUN, 1897 b, p. 32.

Bassia perforata L. AGASSIZ, 1862, p. 372; CHUN, 1888, p. 1190; HAECKEL, 1888 b, p. 160; BRDICH, 1896, p. 374.

Bassia obeliscus HAECKEL, 1888 a, p. 33; 1888 b, p. 160, pl. 37. (Endoxid).

Sphenoides obeliscus HAECKEL, 1888 a, p. 33; 1888 b, p. 116; pl. 38. (Endoxid).

Sphenoides perforata HAECKEL, 1888 a, p. 33; 1888 b, p. 116; CHUN, 1897 b, p. 32. (Endoxid).

本種と前述諸種とは總ての點に於て著しく異なる所あるを以て、其區別甚だ容易なり。上泳鐘は大小下泳鐘の三分の一内外、而して上下泳鐘の主軸は殆ど垂直に近き角度をなし、上泳鐘の泳囊が水平なるに對し、下泳鐘の泳囊は垂直に位せり。

上泳鐘の形は低き五角柱なるも、その主軸は柱の軸に直角をなして、一稜より一側面に向ひて走れり。自然の位

(論 說) ○鐘泳管水母類(五) (川村)

の内腔に通ず。泳囊の中に懸垂せる生殖器は割合に大にして、雌性なれば大約二十個内外の卵を藏す。而して二個以上の生殖體存する時はすべて同性なるを定則とす。

三崎に冬と春とに得られたる多數の標品、保護葉の上下の長さ四乃至五耗、横幅三乃至四耗、大なる生殖體は長さ四乃至五耗、幅三耗。

コハコクラゲモドキ (第三十七八圖版)

Abylopsis eschscholtzii (HUXLEY).

Aglaismaoides eschscholtzii HUXLEY, 1859, p. 60, pl. 4, fig. 2; CHUN, 1888a, p. 1160; DENS and VAN RIEMDIJK, 1908, p. 25, pl. 3, fig. 18-31. (Endoxid).
Abylopsis quincunx CHUN, 1888 a, p. 1160; BELOT, 1836, p. 375.

Abyla (*Abylopsis*) *quincunx* CHUN, 1888, b, p. 20. (Endoxid).

Aglaisma quincunx ut Agassiz and MAYER, 1899, p. 180; MAYER 1900, p. 78. (Endoxid).

Aglaisma cuboides MAYER, 1900, p. 77, pl. 30, fig. 104. (Endoxid).

Abyla quincunx Mayer, 1900, p. 78, pl. 34, fig. 115-117; DENS and VAN RIEMDIJK, 1908, p. 21, pl. 3, fig. 22-27.

Abyla tetragoni SCHNEIDER, 1908, p. 89 (partim).

Abyla pentagona MAYER, 1900, p. 77, pl. 30, fig. 101-103.

Chama capillaria MAYER, 1900, p. 78, pl. 27, fig. 90.

本種は甚だ前種に近き種にして、構造の類似せること頗著しきも、前種と同様に比較的明瞭に記載せられたる動物なれば、前種との差違も亦確實に知らる。即ち上泳鐘にありては泳囊左右放射管が、前種に於ては柄管より分れて一旦上方に向ひ後折れ曲りて下降するに、本種に於ては直に下方に向ひて走ることにして、下泳鐘にありては下端にある五個の齒狀突起、前種に於ては著しく異なるが、本種にては殆ど同じ位の強さに發育せること、左右相重りて幹室を形成せる翼狀突起の中前種にては左の方が強き鋸齒を有するに、本種にては却つて右の方に大なる鋸齒を見ること、及泳囊四放射管の走向前種にては各皆同じからざるに、本種にては正しき通常の走向なること等なり。加之本種は全形として前種に比して小さく、上下泳鐘の大きさの差も亦前種の如く大ならず。

余は未だ本種が多營養體世代を得ざりしが、其單營養體時代の一個を三崎に得て、本種の我近海に産することを知りたり。こは元來 *Aglaisma quincunx* の名を以て知られたる「ユードキシッド」にして、大體前種の「ユードキシッド」に酷似するも、保護葉の形に明瞭なる特徴ありて容易に區別せらる。左に之を略述せん。

保護葉は略ぼ五角柱を横に倒してその一側面を上にし、之に對する一稜を下にしたるが如き形をなせり。但し

下泳鐘幹室中を貫きて下垂せる幹は通常廿個以上の連續せる幹群を擔ひ、幹群の各は立方形に近き保護葉營養體・觸手及生殖體の芽とより成る。生殖器は幹群を脱離して「ユードキシッド」となりたる後に於て成熟するものゝ如し。本種の「ユードキシッド」は次に説くが如き構造を有し、古來 *Aplysina* なる屬名を冠せられたるものなり。

本種は本亞科中形最も大きく、且つ普通に見らるゝものにして、屢地中海・大西洋・印度洋其他より報告せられ、若し我近海を以て北東太平洋を代表せしめ得ば、すべての海洋に見らるゝと謂ふを得可し。余の檢せし標品中最大なりしは故箕作教授が駿河灣興津沖に採集せられし一個にして、上下泳鐘を合せて長さ三〇耗、幅九耗を測れり。三崎にて平常遭遇するものは長さ一〇乃至二五耗、幅三・五乃至八耗なり。

次に本種の「ユードキシッド」(*Aplysina cuboides* LEUCKART) を記述せん。

左右相稱形なる保護葉の形は、少しく下方の擴がりたる立方體の下に一個の楔形の尾突起を添加したるが如し。上面は殆ど正方形、腹側面は少しく横に長き梯形、背側面は梯形の下に三角形を添て生せる五角形、兩側面も亦略梯形をなせども、その背側縁は腹側縁よりも長く、よつて下縁は背側に至るに従ひて低下す。下面は略ほ正方形、その背半に隆起せる突起部を除きては、殆ど全部保護葉腔の開口となれり。此腔は少しく斜に腹下方に向

ひて開ける鐘狀の開入にして、其頂は大凡保護葉の中心點にあり。又其開口部背側には翼狀の部分ありて之を擁し、茲に三個の弱き齒狀突起あり。保護葉の各稜は殆ど直線にして細き鋸齒を有す。保護葉體囊は幹室頂に接して存する小さき球形の部分を中心とし、之に附屬せる四本の盲狀突起相呼應して、恰も翼を擴げたる鳥の如き形をなせり。四本の中正中面に存する上下の二管は細くして、一は直上して保護葉の頂面に近き所に楕圓形の膨大部を形づくりて茲に油滴を湛へ、他は保護葉腔の背壁に沿うて下走し、凡そ保護葉橫側面の背下隅と同じ水平に達したる頃盲狀に終る。他の二管は此等より著しく太く、左右一對をなして、腹橫側に向つて伸び、更に下方に折れ曲りて遂に盲狀に終る。

大きくして屈伸自在なる營養體は保護葉腔の背側に存し、長き觸手之に伴ふ。生殖體即ち生殖泳鐘は此等の腹方にありて、若し二個以上なるときは左右に並列す。成長したる生殖體の形は中央の膨らみたる四角柱の頂に圓錐形の突起を添へたるが如し。柱の四稜は強く發育し皆著明なる鋸齒を有す。其末端は殆ど同大の四個の三角錐形齒狀突起となる。生殖泳鐘の泳囊口は此四齒に圍まれて存し、廣き縁膜を備ふ。

泳囊の四放射管は簡單にして殆ど同長泳囊の上腹隅(保護葉よりして云へば背側)に於て一條の柄管に合し、後者は雲天質中を直線に走りて生殖泳鐘の尖端に於て幹

を上にしつゝ、自然の位置に於て垂直と約六十度の角をなせり。一對の頂横面は背腹に長き矩形、頂上に於て屋背の如き稜をなして交はる。之に亞げる一對の下横面は頗大にして、大部分は背腹に稍長き矩形なるも、其下腹隅が引き伸ばされて更に小なる四邊形の部分を添加せり。不對の下面は細長き矩形、横走せる最著明なる隆起線によりて、上三分の二と下三分の一とに分れ、上には泳囊の開口を、下には幹室口を含む。

泳囊は上泳鐘の背半寒天質中にありて、割合に小なる圓筒狀の囊なり。其柄管は幹室の頂より直に泳囊腹側中央に向ひて玆に達するを以て、四放射管の長さは不同、背側管最長く、腹側管最短し。幹室は圓錐形、上泳鐘の腹下隅にあり。其頂は恰も泳鐘全體の中心點に當る。此處より上には矢狀而中を背腹双方に走る二管柄あり、下には長き幹が附着垂下して下泳鐘幹室の中をも貫けり。體囊は大なる半球形の囊にして泡狀細胞壁よりなる。幹室頂より來れる管は其背下隅に於て囊に入る。別にその背上隅に於て上方に突出せる盲狀の細管ありて、先端再び球形に膨れ、玆に油滴を藏す。其位置は頂稜の中央に近し。

下泳鐘は高き截頭五角錐、其五側稜は上方三分の二に於て略同様に發育するも、下方三分の一に於ては甚しき強弱の差ありて、下端の齒狀突起に大小あるのみならず、各多少左旋形に旋回せるを認む。下泳鐘の頂面は截頭に

當りて少しく斜に切り取られたる場合に比すべく、背側(下泳鐘の)より腹側に至るに従ひ低下せり。然れども腹側隅に至るや急に三角錐形の突起を隆起せしむ。こは上泳鐘の幹室中に突入し、以て幹に下泳鐘を附着せしむる所なり。下面は不正五角形、中央に圓形なる泳囊口ありて、之を圍みて立てる五個の齒狀突起の内、左腹隅のもの最大、右背横隅のもの大、殆ど之に近く、右腹及左背横隅のものは遙に小く、背側のものに至つては最も弱くして不著明なり。

下泳鐘の幹室は盲狀の凹入にあらずして、他の多くの場合と同じく、上下に貫ける管の如きものとなれり。但し全く腔道の如くなれるに非ず、左腹側面上に發達せる一對の葉狀隆起が左右より出で、衣服の衽の如くに相重りたる爲に生じたる腔道にして、常に右が左の上を覆ふ様になれり、下泳鐘の各稜は下方に至れば著明なる鋸齒を有す。

下泳鐘の泳囊は大にして圓筒狀、下泳鐘の中心部稍背側に偏して存す。その四放射管は不規則なる走り方をなすを常とし、左側及腹側管は別々に環管に通せずして、先づ兩者相近き來りて左側管の下端に近く癒合し、玆に一個の竇を作る。又右側管の上端は他の三放射管の如く腹上隅に於て合一せずして、下より三分の二位の處にて直角に折れ曲り、以て腹管側の途中に連絡す、右側管の下端にも亦小なる竇あるを見る。

屬 ハコクラゲモドキ属

Abolopsis CHUN, 1888.

上泳鐘の頂に平面なくして、兩横側面の合して、形成せる稜あり。幹室腔は外に開けて管の如くならず。二種あり、*A. tetragona*, *A. eschscholtzii* とす。

ハコクラゲモドキ (第三十二—五圖版)

Abolopsis tetragona (OTTO).

Pyramis tetragona OTTO, 1823, p. 306, pl. 42, fig. 2a-2c.

Calpe pentagona LESSON, 1813, p. 449.

Abyla pentagona ESCHSCHOLTZ, 1829, p. 132; LEUCKART, 1853, p. 56, pl. 3, fig. 1-6; 1854, p. 11, pl. 11, fig. 1-10; KÖHLER, 1853, p. 41, pl. 10; VOGT, 1854, p. 121, pl. 20, fig. 4-7, pl. 21, fig. 3-6, 10-13; HUXLEY, 1859, p. 40, pl. 2, fig. 2; GREGG-HAVER, 1860, p. 349, pl. 28, fig. 17-19; FEWES, 1874, p. 318, pl. 3; CHUN, 1897 b, p. 30; LENS and VAN RIEMSDIJK, 1908, p. 17, pl. 2, fig. 19-20; BIGELOW, 1911, p. 224, pl. 14, fig. 5, 7; pl. 15, fig. 2.

Aglaisma bueti ESCHSCHOLTZ 1829, p. 129, pl. 12, fig. 5.

Diphyes calpe QUOY and GAIMARD, 1834, p. 89, pl. 4, fig. 7-11.

Aglaisma pentagonum LEUCKART, 1853, p. 150, pl. 3, fig. 2, 3.

Eudoxia euboides LEUCKART, 1853, p. 54, pl. 3,

fig. 7-10; CHUN, 1885, p. 525, pl. 2, fig. 11; BEDOT, 1896, p. 375, (Endoxid).

Aglaisma elongata HUXLEY, 1859, p. 61, pl. 41, fig. 3, (Endoxid).

Aglaisma greggii HAECKEL, 1888 b, p. 119, pl. 40, (Endoxid).

Calpe greggii HAECKEL, 1888 b, p. 164, 39, 40.

Calpe hurleyi HAECKEL, 1888 b, p. 164.

Aglaisma euboides CHUN, 1897 b, p. 33; LENS and VAN RIEMSDIJK, 1908, p. 19, pl. 2, fig. 21, (Endoxid).

Abyla tetragona SCHNEIDER, 1898, p. 89.

Abyla bueti AGASSIZ and MAYER, 1902, p. 166, pl. 11, fig. 48.

本亞科の特徴なる上下兩泳鐘の間の大きさの差は本種に於て最も著しく、上泳鐘は下泳鐘の五分の一にも達せず、而して若しその長軸を取りて云はゞ、後者は約六十度の角度をなして、上端を以て前者の腹側に接着せり。

上泳鐘は完全なる左右相稱形にして、五角柱を横に倒して其一稜を上にしたるが如く、其不正五角形なる兩端面は此泳鐘の背面及腹面に相當す。而して此五角柱は腹下方の一隅が少しく引き伸ばされて更に小なる四角柱形の突起(幹室開口部)を形づくれるが爲に、稍複雑なる形をなせり。五角形面の中背側面は少しく凹にして小さく、腹側面は少しく凸にして大なり。共に一邊を下にし一角

之に達することなくして棍棒状をなせる官管に終る。

生殖泳鐘の形は四角柱の上に圓錐形を繼ぎたるが如くなるを原形とするも、多數存する時は相互が接する處に矢狀面を生じて多少不相稱五角形となることあり。此矢狀面のみは平面なるも他の面は皆多少凹陥せり。五個の稜は孰れも下半に於て鋸齒を有し、且末端鋭き齒狀突起に終る。生殖泳鐘の泳囊は長き圓柱形、開口は圓形にして廣き緣膜を備へ、四放射管及環管は簡單なり。

余の見たる標本は保護葉長さ約五耗左右の幅六耗、生殖體長さ五・五耗、幅二・五耗なり。

シカクハコクラゲ (第十五版) (第廿九—三十一圖版)

Abula leuckartii HUXLEY.

Abula leuckartii HUXLEY, 1859, p. 49, pl. 3, fig. 2a-2b; LENS and VAN RIEMSDIJK 1908, p. 34, pl. 5, fig. 42-46; BIGELOW, 1911, p. 216, pl. 13, fig. 5-8, pl. 15, fig. 3, 4.

Abula trigona CHUN 1897 b, p. 31.

Pancagommu leuckartii SCHNEIDER, 1898, p. 93.

上泳鐘の形は前種に似て今少しく簡單なり。上面は長さ六邊形、少しく凸、背側面は長き矩形にして其兩側稜は下方強き角錐形突起に終る。左右の横側面は上方大部分に於ては縦に長き四邊形なるも、下縁中央に今一個の弱さ突起ありて隅角をなせる故、全形は五角形なり。而して此面上腹側に近く存する弧形の縦稜ありて、此面を大

小の二部に分てり。但し稜は下端不明瞭に終り、前述中央なる弱き突起とは連絡せず。腹側面は元來長方形と見る可きものなるも、其兩側稜が下端に於て左右相合し、一個の弱き突起となれるを以て、細長き二等邊三角形が角頂を下にして倒立せるが如し。下面は細長き五角形にして、背半は泳囊口を、腹半は幹室口を含む。

體囊甚大にして長楕圓形、上泳鐘の腹側三分一中に充滿し、其長軸は殆ど上下に走る。泳囊は上方に稍細くなれる圓筒形、其構造常の如し。幹室も亦圓筒形にして、甚深く、其開口部は多少喇叭狀をなして擴がり、且つ少しく腹側に向ひて曲れり。

本種は頗古くより知られたるに拘らず、其下泳鐘未だ明かならず。唯『アルバトロス』號の獲たる材料に幹室中に存する稍大なる下泳鐘の芽ありて、之によりて略四角形なること初めて確められたり。余の標品は一九〇七年一月三日三崎に得たる上泳鐘唯一個、長さ六耗、幅三・二耗、幹群收縮して構造を見難く、下泳鐘脱失せり。

クーンは本種を以て *Abula trigona* と同一種なりと爲せしが大なる誤なり。本種の「ユードキシッド」に就ては未だ詳ならず。ブドー及『シボガ』號の得たる *Ceratomyxa usymetrica* (≡ *C. sagittata*) がそれならんと想像せらる。このものは大體前種の「ユードキシッド」なる *Amphiroa alata* に似たるも、保護葉體囊の下端細く尖れて鈎狀に曲れるを特徴とす。我國に於ては未だ遭遇せず。

1; CHUN, 1888, p. 1160; 1897 b, p. 31; LENS and VAN RIEMSDIJK, 1908, p. 28, pl. 4, fig. 37, 38, (Eudoxid).

Eudoxia trigone GEENBAUT, 1860, p. 249, 11, 27, fig. 10-12, (Eudoxid).

Abula curina HAECKEL, 1888 b, p. 156, pl. 35,

Amphiroa curina Haeckel, 1888 a, p. 33; 1898

b, p. 114, pl. 36, (Eudoxid).

Amphiroa trigona HAECKEL, 1898 a, p. 33; 1898 b, p. 113, (Eudoxid).

本種が多營養體時代は普く知られたる動物なるも、不幸にして未だ得ること能はざりき。大凡前種に酷似するも、其間の差違を摘記すれば、上泳鐘に於て最も見易きことは、腹側面が前種の如く上下二部に分たることなぐ、引續きの縦に細長き、中央の稍凸出せる一面なることとなり。下泳鐘は上泳鐘と同様に側方より扁壓せられたる三角錐形(種名は之に據れり)にして、背腹及左側の三稜有れども、更に右側にも不著明なる一稜ありて、本來は四角形なることを示せり。本種の「ユードキシッド」は *Amphiroa alata* の名にて熟知せられたるものにして、一八五六年ハックスリーがトールレス海峡に得たるを初めてし、大西洋、地中海より度々報告せられ、一八六〇年デーゲンバウルその本種の單營養體世代なることを確證せり。其他大平洋、馬來地方にても既に見られたるが、余も亦三崎に之を得たれば左に之を記載すべし。

保護葉の形は四角柱の下端が腹側に於て深く截り取られたるものか、又は四角柱の下端が背側に於て少しく引き伸ばされたるものに比すべし。水平に位置する上面は梯形、腹側縁最長くして少しく外に凸、背側縁最短くして少しく外に凹、他の二縁は腹側より背側に向ひつゝ左右相集まれり。之を上縁として直立せる左右側面は少しく凹入し、不正五邊形、上縁と背縁とは殆ど同長にして長く、腹縁之に亞ぎ、著しく彎曲せる腹下縁と下縁とは最短し。背側面は縦に長き矩形、腹側面は横に長き矩形なり。最後に、保護葉の下面は背側半部にありては略ぼ正方形をなせる甚小き水平面をなせども、之に引續ける腹側半部は深く截り取られて、大なる保護葉腔の開口部を形づくれり。其概形梯形にして腹縁は長さ背縁の三倍に近し。

保護腔は鐘狀にして、少しく左右より扁壓せられ、且つ頂端を背上方に向けたり。腔の背半には營養體及觸手を藏し、腹半には若干個の生殖泳鐘 (gonocalyx) あり。(生殖體にしてその傘下腔泳鐘の働を兼ねる故往々此呼様を用ふ。本亞科のみならず、前亞科にも用ゐられ得。) 大なる體囊は保護葉寒天質中の背側半を占め、長楕圓形、大なる泡狀細胞其中に滿つ。二條の細き保護葉管 (bract-*cal canal*) は、體囊の腹側上方に於て、恰も保護葉腔の頂端に接して發し、初は水平に、放射狀に横腹隅を目標に進み、中途より折れ曲りて上斜に角隅に向つて進めども、

面は縦に長き矩形、腹側面は横走せる直線の稜によりて上下に分たれ、上面は長方形にして斜に上方に對し、下面は兩側稜下端に於て相合して一突起に終るを以て、高さ幅に三倍する二等邊三角形の倒立したるものに比すべし。背横側面は六角形にして、二つの平行なる縦稜と、上方より背下方に走れる上下の二稜と、後者に直角をなせる上腹邊及強く彎曲せる下背邊とによりて圍まる。次に腹横側面は上下の二部に分れ、下部即ち下腹横側面は四角形にして、二つの縦稜と殆ど水平なる上縁及彎曲せる下縁に圍まる。上腹横側面は之より稍大なる五角形、其位置恰も頂面、上下腹側面、下腹横側面及背横側面の間に介在し、少しく斜上方に面せり。頂面は本來の六角柱の上面なれば六角形なるも、左右より扁壓せられ、且つ腹側面の上部が斜に位置する結果として、柱の太さに比して甚だ小なり。反之底面は甚だ大にして、横走せる冠狀の一稜によりて不同の背腹兩半に分れ、背側半は方形にして泳囊の開口をなし、腹側半は略五角形をなし、全く幹室の開口によりて占めらる。各面は多少凹陷す。上泳鐘の下部にては各稜皆明瞭なる鋸齒を形成せり。

泳囊は上泳鐘の背側三分の一を占め、圓筒形、長さは徑に四倍す。其下口は割合に小にして、廣き縁膜を有す。四放射管及環管簡單なり。柄管は短く泳囊の腹側上隅より發して直に幹室頂に達す。

體囊は泳囊の腹側三分の一にあり、甚大なる橢圓形の

囊にして、大なる泡狀の多角形細胞にて充填せられ、短き一管上背隅より幹室頂の間を連結す。

本種は『シボガ』號の得たる上泳鐘より作られたる一種なるが、一八五九年ハックスリーの *Abyla trigona* は次に述ぶる *trigona* に非ずして寧ろ本種なりと思はる。下泳鐘は此ハックスリーの報告によりて臆氣に認定せらる外、未だ詳かならず。余も一九〇八年七月三崎にて唯一個の上泳鐘を得たるのみ。長五耗、背腹の幅四五耗、但し上泳鐘のみにても種の鑑定には大なる不便なし。本種の「ユートキシッド」は未だ全く不明にして、先の異名表中に掲げある *Amphiroa angulata*, *Amphiroa alata*, *Amphiroa dispar* 等はいづれもビゲローの推測に基きて附記せしものなり。

サンカクハコクラゲ

(第十五圖版)
(第廿七八圖版)

Abyla trigona QUOY et GAIMARD.

- Abyla trigona* QUOY and GAIMARD, 1827, p. 14, pl. 2 B, fig. 1-8; ESCHSCHOLTZ, 1829, p. 131; BRAINVILLE, 1830, p. 123; GEGENABER, 1860, p. 337, pl. 26, pl. 27, fig. 9-12; CHOD, 1888, p. 1160; 97 b, p. 31; SCHNEIDER, 1898, p. 90; LENS and VAN RIEMSDIJK, 1908, p. 23, pl. 4, fig. 34-36; BIGELOW, 1911, p. 221, pl. 13, fig. 3, 4. *Amphiroa alata* BRAINVILLE, 1830, p. 121; 1834, p. 133, pl. 4, fig. 1; HUXLEY, 1859, p. 64, pl. 6, fig.

●鐘 泳 管 水 母 類 (五)

(第二十七卷
第十五版附)

理 學 士 川 村 多 實 二

第三亞科 ハコクラゲ亞科

Abylinae AGASSIZ, 1862.

泳鐘角柱形、上泳鐘は下泳鐘に比し著しく小、幹群遊離して「ユードキシッド」となる。

本亞科の諸屬は前亞科以上に混亂せり、一八八八年ヘッケルは *Abyla*, *Bassia*, *Culpe* の三屬を承認せしが、後クレイン *Culpe* は鱗翅類にある名なりとて *Abylopsis* を以て之に代へ、且つ此三つを *Abyla* 屬の亞屬となせり。シュナイダーは三屬を合して一となせしが、現今は右の三つを各屬名として用ゆる者多し。別に後より加はりたる *Diphy-abyla* なる一屬ありて、本亞科中最も前亞科に近きものなりと認めらる。

屬 *Diphyabyla* LENS et VAN RIEMSDIJK,

1908.

上泳鐘角錐形にしてフタツラゲ亞科に似たり。

『シボガ』號の採りたる一個の材料より作られたる一種 *D. hubrechtii* L. et. VAN R. ありて、後アルバトロス號再び一個を東大平洋赤道下に獲たり。我國近海にては未だ知られず。

屬 ハコクラゲ屬

Abyla QUoy et GAIMARD, 1827.

上泳鐘に多角形の頂面あり、下泳鐘五角柱形、幹室は外に開きて管の如くならず、三種あり、*A. haeckeli*, *A. trigona*, *A. leuckartii* といふ。三崎に得たる標品により孰れも我近海に産することを知りたり。

ハコクラゲ (第十五版 第廿四—六圖)

Abyla haeckeli LENS et VAN

RIEMSDIJK.

Abyla haeckeli LENS et VAN RIEMSDIJK, 1908, p. 32, pl. 5, fig. 39-41; BIGelow 1911, p. 222 pl. 13, fig. 1, 2.

Abyla trigona HuxLEY, 1859, p. 47, pl. 3, fig. 1.

Amphiroa angulata HuxLEY, 1859, p. 64, pl. 5, fig. 2 (Eudoxid).

Amphiroa alata HAECKEL, 1888 b, p. 156, (Eudoxid).

Amphiroa dispar BENOIT, 1896, p. 373, pl. 12, fig. 5, 6 (Eudoxid).

上泳鐘の概形は左右相稱六角柱形、其柱面の一對が背腹兩側に位置し、全形左右側より強く扁壓せらる。背側

腹兩側に位置し、全形左右側より強く扁壓せらる。背側

