

No. 7. — *Reports on the Results of Dredging, under the Supervision of ALEXANDER AGASSIZ, in the Caribbean Sea, in 1878, 1879, and along the Atlantic Coast of the United States, during the Summer of 1880, by the U. S. Coast Survey Steamer "Blake," Commander J. R. BARTLETT, U. S. N., Commanding.*

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## XI.

*Report on the Acalephæ, by J. WALTER FEWKES.*

### HYDROIDA.

The collection of hydroids obtained by Mr. Agassiz during the expeditions of the "Blake" in the Caribbean Sea, in 1878, 1879, and off the eastern coast of the United States, in the summer of 1880, contains the genera and species mentioned in the following pages. Two genera of gymnoblastic hydroids, *Eudendrium* and *Tubularia*, were collected. The latter is *T. indivisa* (?); the species of the former could not be determined. The majority of the remaining forms belong to the family of *Plumularidæ*.

The following genera and species have already been described.

Taken in the Caribbean Sea, 1878, 1879 :—

*Aglaophenia apocarpa*, ALL., Milligan's Key, 124 fms.

*gracilis*, ALL., Martinique, 96 fms.

*ramosa*, ALL., St. Vincent, 95 fms.

*ramulosa*, KIRCH., Barbados, 94 fms.

Montserrat, 88 fms.

Barbados, 76 fms.

*Antenella gracilis*, ALL., Barbados, 56 fms.

Martinique, 96 fms.

*Cryptolaria abies*, ALL., Barbados, 94 fms.

Grenada, 154 fms.

Grenada, 170 fms.

Montserrat, 88 fms.

Sta. Cruz, 508 fms.

- Cryptolaria conferta*, ALL., Barbados, 73 fms.  
 Barbados, 94 fms.  
 Barbados, 120 fms.  
 Dominica, 118 fms.  
*longithea*, ALL., Dominica, 76 fms.  
 Martinique, 334 fms.  
 Barbados, 103 fms.  
*Eudendrium*, sp. (?), Grenada, 291 fms.  
*Hippurella annulata*, ALL., St. Vincent, 124 fms.  
*Lafoëa convallaria*, ALL., Barbados, 76 fms.  
 Barbados, 94 fms.  
 Martinique, 76 fms.  
 Guadeloupe, 150 fms.  
*Monostechas dichotoma*, ALL., Yucatan Bank, 50 fms.  
*Plumularia attenuata*, ALL., Grenada, 576 fms.  
*geminata*, ALL., Barbados, 76 fms.  
*Sertularia tubithea*, ALL., Barbados, 76 fms.  
*distans*, ALL., St. Vincent, 114 fms.  
*Sertularella Gayi*, var. *robusta*, ALL., Dominica, 524 fms.  
*Thuiaria pinnata*, ALL., Barbados, 56 fms.

There are also in the collection specimens of *A. ramulosa* and *C. abies*, with blank labels of 1878, 1879.

The following known species were taken in 1880:—

- Antennopsis hippuris*, ALL., 32° 7' N., 78° 37' W., 229 fms.  
*Cladocarpus paradisea*, ALL., 31° 57' N., 78° 18' 35" W., 333 fms.  
 32° 7' N., 78° 37' 30" W., 229 fms.  
*Cryptolaria conferta*, ALL., 41° 29' 45" N., 65° 35' 30" W., 1242 fms.  
*Halecium macrocephalum*, ALL., 38° 21' 50" N., 73° 32' W., 197 fms.  
*Sertularella Gayi*, var. *robusta*, ALL., 31° 57' N., 78° 18' 35" W., 333 fms.  
 41° 30' N., 66° W., 73 fms.  
 32° 43' 25" N., 77° 20' 30" W., 233 fms.  
 32° 25' N., 77° 42' 30" W., 262 fms.  
 32° 7' N., 78° 37' 30" W., 229 fms.  
*Tubularia indivisa* (?), GOULD, 41° 35' N., 65° 57' 30" W., 139 fms.

The following were obtained in the expedition of 1878, 1879:—

- Aglaophenia apocarpa*, ALL., Sand Key, 35 fms.  
*Obelia marginata*, ALL., Sand Key, Telegraph Cable, 15 fms. (SIGSBEE).  
*Sertularella Gayi*, var. *robusta*, ALL., off Morro Light, 250–400 fms.  
*Obelia marginata*, no locality.

The following undescribed genera and species were taken.  
Obtained in 1878, 1879 : —

- Aglaophenia insignis*, Grenada, 262 fms.  
     *gracillima*, Martinique, 96 fms.  
     *robusta*, Montserrat, 88 fms.  
*Cladocarpus compressus*, St. Vincent, 114 fms.  
*Lafoëa elegans*, Barbados, 125 fms.  
     Barbados, 180 fms.  
*Plumularia caulitheca*, Grenada, 416 fms.  
*Sertularella formosa*, Martinique, 357 fms.  
*Pleurocarpa ramosa*, St. Vincent, 95 fms.

Obtained in 1880 : —

- Aglaophenia minuta*, 32° 43' 25" N., 77° 20' 30" W., 233 fms.  
     *crenata*, 41° 24' 45" N., 65° 35' 30" W., 1242 fms.  
*Aglaophenopsis hirsuta*, 32° 7' N., 78° 37' 30" W., 229 fms.  
*Antennopsis ramosa*, " " "  
*Campanularia insignis*, " " "  
*Callicarpa gracilis*, no locality.

#### DESCRIPTIONS OF NEW SPECIES.

##### *Lafoëa elegans*, n. s.

Hydrocaulus stout, widely branching. Stem fascicled. Ultimate branches pinnate, alternate. Hydrothecæ disposed alternately, cyathiform, arising from branches and ultimate ramuli. Margin smooth, edge slightly everted. One or two annular striæ.

Gonosome unknown.

Barbados, 180 fms., and Barbados, 125 fms.

Differs from *L. fruticosa* in having pinnately arranged ultimate branches. Resembles closely *L. helicioides*, All., but larger.

##### *L. convallaria*, ALL.

A specimen of *L. convallaria* bears along the stem gonosomes like those of *Cryptolaria conferta*, All. Clarke\* refers these gonophores to the *Lafoëa*, upon which they are found, as Allman does the supposed gonophores of *C. conferta*.

##### *Campanularia insignis*, n. s.

A specimen of *Campanularia* is found in the collection. It resembles *C. macroscypha* in having a discoid internode just below the hydrotheca. It has

\* Bull. Mus. Comp. Zoöl., Vol. V. No. 10.

a longer style, and fifteen instead of twelve teeth around the rim of the hydrotheca.

32° 7' N., 78° 31' 30" W., 229 fms.

#### *Cryptolaria abies*, ALL.

A specimen of *C. abies* bears a structure which I have called the gonosome. The distal end of a pinna, which in its proximal extent is normal, is modified into a spherical body, which resembles imperfectly this organ. In it, however, there are no gonophores. Its walls are formed by the elongation of the hydrothecæ. Nothing else which can be likened to a gonosome has been described in *C. abies*. In none of the specimens were there structures similar to what Allman has described as the gonosome in *Cryptolaria conferta*.

#### *Sertularella formosa*, n. s.

Trophosome: — Hydrocaulus smooth, non-fascicled, pinnately branched, with root like base. Hydrothecæ borne on main stem and branches. Height, six to eight inches. Pinnæ alternate, zigzag, and jointed. Hydrothecæ alternate. A single hydrotheca arises from the axil of every pinna. Number of hydrothecæ on the stem between the pinnæ, variable. Hydrothecæ extend almost at right angles to the axis of pinna, and arise from distal ends of each joint. Margin of the hydrotheca smooth, upper surface or face without indentations.

Gonosome unknown.

The mode of origin of the ultimate branches, the want of indentations on the upper surface of the hydrotheca, and the smooth stem, separate this species from *Sertularella Gayi*, var. *robusta*, All.

Grenada, 170 fms. ; Martinique, 357 fms.

#### *Plumularia caulithecæ*, n. s.

*P. caulithecæ*, unlike other species of *Plumularia*, has a large nematophore, not free as the others in the same species, which arises from the stem upon the upper side of a projection of the hydrocaulus from which the pinna springs.

Trophosome: — Hydrocaulus simple, fascicled, two inches high. Pinnæ alternate. Hydrothecæ deep, with smooth margin. Nematophores free. Mesial nematophores arise from a slight protuberance below the hydrotheca. Normal nematophores trumpet-shaped and free.

Gonosome unknown.

Grenada, 416 fms.

This species differs from *P. attenuata*, All., in the possession of a peculiar nematophore seated on a projection of the stem from which the pinna rises.

***Aglaophenia insignis*, n. s.**

*A. insignis* resembles *A. gracilis* more closely than it does any other species of the genus. It differs from it in that the mesial, adnate nematophore projects almost at right angles to its hydrotheca. This nematophore is not as long as the mesial nematophore of *A. ramosa*. The corbula is short and thick, different in shape from that of *A. rhyncocarpa* and *A. rigida*.

Trophosome:—Hydrocaulus three inches high, branching, non-fascicled, with nematophores on the stem. Hydrorhiza creeping. Branches spring from opposite sides of main stem, but they are not exactly opposite in position of origin. Hydrothecæ closely approximated, short, stout, with the margin toothed. Supracalyceine nematophores rise slightly above the orifice of the hydrotheca. Mesial nematophore adnate part of its length, and with the remainder extending at right angles to the surface of the hydrotheca. Ultimate ramuli borne on main stem as well as branches.

Gonosome:—Corbula short, stout, closed, bearing a hydrotheca on the peduncle. The nematophores borne on outer walls of the corbula in rows, with each nematophore long, tubular, and tapering slightly to a terminal opening. The number of nematophores in each row is six or seven on each side. Number of ribs, four and five. Peduncle of each corbula, short.

Grenada, 262 fms.

***Aglaophenia gracilis*, ALL.**

An *Aglaophenia*, which resembles *A. gracilis* in size and shape of hydrotheca, has a corbula like that of *A. rigida*. The only differences which Allman points out between these two species is that in *A. gracilis* "the hydrothecal internodes are longer and narrower" than in *A. rigida*, and *A. rigida* is a much "more ramified and a taller form." Allman says of *A. gracilis*, "Gonosome wanting." In the hydroid, which has been identified as *A. gracilis*, there is a corbula which resembles that of *A. rigida*. *A. gracilis* and *A. rigida* may be the same hydroid.

***Aglaophenia gracillima*, n. s.**

Trophosome:—Hydrocaulus not branching, attaining a height of three inches. Non-fascicled. Upper part of hydrocaulus bearing denticle-like nematophores. Pinnae alternate. Hydrotheca deep, swollen below; margin with a medially placed tooth longer than the remaining dentition about the margin of the hydrotheca. A spur arises near the base of this tooth. Supracalyceine nematophores slightly overtopping the margin of the hydrotheca. Mesial nematophore with two openings, one terminal; the other on side facing the hydrotheca. Hydrothecæ closely crowded together, each arising from a joint of the pinna.

Gonosome:—Corbula like that of *A. lophocarpa* in shape and size, but the distal end terminates bluntly in a single large nematophore, and not in a coni-

cal projection. Corbulæ closed, with long peduncles, which are jointed and bear hydrothecæ, one on each joint.

Martinique, 96 fms.

***Aglaophenia minuta*, n. s.**

Trophosome:—Hydrocaulus one quarter to half an inch high, pinnately branched, not fasciated. Pinnæ alternate, with hydrothecæ closely crowded together. Hydrothecæ short, stout, and with dentate margin. Intrathecal ridge well marked. Supracalcine nematophores small. Mesial nematophore adnate to hydrotheca about half the depth of this organ.

Gonosome unknown.

Found in great abundance on an Alga over the fronds of which the hydrorhiza extends.

32° 43' 25" N., 77° 20' 30" W., 233 fms.

***Aglaophenia crenata*, n. s.**

*A. crenata* differs from other members of the genus in having the margin of the hydrotheca almost smooth and crenate. In other respects it resembles *A. gracilis*.

Gonosome unknown.

41° 24' 45" N., 65° 35' 30" W., 1242 fms.

***Aglaophenia robusta*, n. s.**

This species has a very large, thick, fasciated hydrosome, which is branching, and gives rise to alternate pinnae. Hydrothecæ with very long teeth on the margin. Mesial nematophore large, adnate, almost as long as the hydrotheca is deep. Supracalcine nematophores rising slightly above the rim of the hydrotheca. Color of hydrosome bright yellow and brown.

Gonosome unknown.

Montserrat, 88 fms.

**AGLAOPHENOPSIS, n. g.**

*Generic Characters.*—This genus has many resemblances to Kirchenpaur's subgenus *Macrorhynchia* and to Allman's *Halicornaria*. Unlike the former, the pinnae retain their normal form, and do not bear gonophores.

In *Aglaophenopsis* the mesial nematophore most proximally situated on the pinna is modified into a long, jointed stalk, which bears nematophores, and seems to protect gonangia, which arise from the stem below. In *Halicornaria*, as limited by Allman, there are similar jointed appendages, but they are not confined to the proximal hydrotheca. The two genera are easily distinguished. In *Cladocarpus* similar unjointed appendages are found, but these structures in this genus, called phylactogonia, are branched, antler-shaped.

Minor characteristics of the genus are that the pinnæ are very numerous, and always arise from one side of the hydrocaulus. The hydrothecæ have short, adnate, mesial nematophores, and the gonosomes have a single opening turned to one side.

***Aglaophenopsis hirsuta*, n. s.**

Trophosome:—Hydrocaulus branching, fascicled, about two inches high, with branches wide spreading. The base of the trophosome with many root-like appendages. Pinnæ small, arising from the side of the stem, and branches. The small size of the pinnæ and their great numbers impart a hirsute appearance to the hydrocaulus. Pinnæ jointed, each joint bearing a single hydrotheca. Hydrothecæ closely crowded together. Margin of hydrotheca notched. Supracalcine nematophore rises slightly above the margin of the hydrotheca. Mesial nematophore adnate to the hydrotheca about one third the depth of this organ.

Gonosome:—The gonophores are flask-shaped, borne on the primary branches. The gonangia in alcoholic specimens fill about half the cavity of the gonophore. Gonophores numerous, and never found on the main stem of the hydrosome. They spring from the same side of the branch as the pinnæ, and are protected by jointed extensions of the most proximal mesial nematophore of the pinna. This structure bears a single row of nematophores, and resembles a phylactogonium. It differs from the phylactogonia of *Cladocarpus* in being unbranched and jointed.

32° 7' N., 78° 37' 30" W., 229 fms.

***Antennopsis ramosa*, n. s.**

Trophosome:—Hydrocaulus irregularly branching, fascicled, bearing denticulate nematophores not unlike those found on one side of the stem of *Cladocarpus*. Height six to eight inches. Scattered pinnæ spring from the main stem. Ultimate ramuli arise irregularly from all sides of the branches as in *A. hippuris*, All. Hydrothecæ shallow. Nematophores free, long, trumpet-shaped. Margin of hydrotheca smooth. Mesial nematophores three in number, the infracalcine affixed to a slight prominence at the base of the hydrotheca. Mesial nematophore open along the inner side, and at the top. Supracalcine trumpet-shaped, extending above the orifice of the hydrotheca. Two trumpet-shaped nematophores on the projection of the branch from which the ultimate ramulus arises.

The gonophores, like those of *A. hippuris*, are borne in the axils of the branches. Gonophores without cobula or phylactogonia, slipper-shaped, mounted upon a short peduncle. The single specimen in the collection showed gonangia of a variety of forms, and I was unable to distinguish male from female, as Allman has done in *A. hippuris*. The species differs from *A. hippuris* in the branching habit and the number of mesial nematophores.

32° 7' N., 78° 37' 30" W., 229 fms.

## HIPPURELLA, ALLMAN.

The genus *Hippurella* was founded by Allman for those hydroids in which the proximal ends of the branches are pinately branched, while the distal end of the same bears verticillately arranged branches. Allman speaks of the last as if they were the same as the pinnae. They are, however, destitute of hydrothecæ, and simply bear a row of nematophores. Their function is the protection of the gonophores, which are confined to this region of the hydrosome.

*Hippurella annulata*, ALL.

Trophosome:—Hydrocaulus six to eight inches tall, for two thirds its length without branches. Branches alternate, bearing ultimate ramuli. Base of hydrocaulus developed into disk-shaped hydrorhiza. Stem fasciated. Pinnae opposite, although those of opposite sides do not lie in the same plane. Insertions of pinnae alternate. Hydrothecæ separated from each other on the stem. In the interval between two hydrothecæ, there are four or five partially formed annulations. Mesial nematophores free, long, and two in number. Margin of the hydrotheca smooth and circular. Supracalycine nematophore overtopping the orifice. A single ultimate branch, or pinna, arises from the main stem.

Gonosome:—The distal extremity of the branch is modified into a gonosome. The proximal end of each branch bears pinnae regularly arranged as described. Those on each side lie in one and the same plane. They pass without great modification into the verticillately arranged ribs of a gonosome at the distal end of the branch. The ribs which compose this gonosome are undivided, and without branches. Each verticil is composed of six ribs of equal size and shape. At the base of the verticil, in the angle which the ribs make with each other, there is a single nematophore. The ribs arise at right angles to the stem, and at a short distance from their origin curve upward. Near this bend they bear a pair of nematophores, one on each side, while higher up in their course the ribs bear single rows of nematophores. Gonophores seated in the interval between successive verticils of these ribs.

St. Vincent, 124 fms.

## CALLICARPA, n. g.

*Callicarpa* differs from all the other genera of hydroids yet described in the character of the gonosome. The gonosome resembles closely a spike of wheat, and springs by a short peduncle immediately from the main stem. It is morphologically speaking as if the proximal part of the branch which bears pinnae in *Hippurella* was reduced to a peduncle, and the distal end with its verticillate ribs became the gonosome.

*Callicarpa gracilis*, n. s.

Trophosome:—Hydrocaulus rising to the height of six inches from a tangled mass of filaments which form the base of attachment. From a point about



one fourth the distance between base and apex there is found what resembles the broken base of a single branch. Stem non-fascicled, bearing alternate pinnæ. Hydrothecæ deep, nearly cylindrical above, and tapering to the place of origin of the mesial nematophore. The hydrotheca has a single mesial nematophore, which is free, trumpet-shaped, and springs from a slight protuberance below the base of the hydrotheca. Supracalcine nematophores free, mounted on projections from the pinna, and overtopping the orifice of the hydrotheca. Depth of the nematophores about one quarter that of the hydrotheca.

Gonosome : — There are three gonosomes. They resemble spikes of barley, and arise directly from the stem by a short peduncle. The axis of the gonosome is about the size of the main stem, near the place of origin of the gonosome, and from it arise verticillate ribs. In each verticil there are three main branches, each of which divides into four ribs by two divisions. These ribs bear a line of nematophores along their upper side. There are no hydrothecæ on the ribs or at the base of the verticils. The gonangia are found in gonophores, which arise in the axils of the undivided verticils, from the axis of the gonosome. They seem to be protected by the ribs of the gonosome in somewhat the same manner that the gonophores in *Cladocarpus* are protected by phylactogonia.

The bottle which contains this specimen is without label. The gonosome of *C. gracilis* resembles in its staghorn-like ribs the "brush" of *Thuiaria thuja*. In other respects there is no likeness between these two hydroids. The "brush" of *T. thuja* is the whole hydrocaulus modified, while the gonosome of *C. gracilis* is a specialized branch. The gonosome of *Callicarpa* is homologous to the corbula of an *Aglaophenia*. I do not regard the corbula of this and some other genera as homologous to a pinna, and its ribs to modified mesial nematophores, but as a metamorphosed branch. The spike of *Callicarpa* is a modified branch, as its relationship to *Hippurella* shows. The discussion of the homology of the corbula of another genus is given under the genus *Pleurocarpa*.

#### *Cladocarpus compressus*, n. s.

Trophosome : — Hydrocaulus attaining the height of eight inches. The main stem consists of two sections, neither of which is fascicled. The lower part is of light brown color, and has a smooth surface without nematophores. It takes up about one third the whole length of the stem. The remaining portion of the hydrocaulus, or the second part of the stem, is of smaller diameter than the former, of light straw color, and bears a single row of denticulated nematophores. It terminates in the immediate proximity of the lowest pair of pinnæ, where it becomes twisted three times. Still a third division of the stem is that which carries the pinnæ. It bears no medial row of denticular nematophores, but in other respects resembles the second of the two divisions of the hydrocaulus. Hydrocaulus unbranched, with alternately arranged pinnæ. Hydrothecæ closely crowded together in the pinna. Margin toothed; shape cyathiform, with indentation on the face. Supracalcine nematophores not

rising above the orifice of the hydrotheca. Mesial nematophore single, adnate, extending only a short distance up along the face of the hydrotheca.

Gonosome:—Phylactogonia springing from the proximal internodes of pinnæ on opposite sides of the stem. Number of phylactogonia twenty. Each phylactogonium with three branches formed by two bifurcations. The first of these bifurcations situated near the origin of the phylactogonium. Each branch of the phylactogonium bears a single row of nematophores.

Gonangia affixed to the main stem and protected by the branching phylactogonia.

This species resembles closely *C. ventricosus*, Allman. A bottle of type specimens contains the hydroid figured by him, Pl. XXXI. fig. 1, and fragments which resemble *C. compressus*.

In *C. compressa* the margin of the hydrotheca is simply toothed, and there is no prominent medially placed single spur as is found on the rim of the hydrotheca in *C. ventricosus* (Allman, Pl. XXXI. fig. 1). The hydrotheca is not ventricose, as in *C. ventricosus*, and the whole trophosome is smaller.

St. Vincent, 114 fms.

#### PLEUROCARPA, n. g.

The characteristic of this genus is a peculiar gonosome, which is formed from the proximal portion of a branch, while the distal end of the same retains the true character of the branch and bears pinnæ. Gonosome a corbula.

#### *Pleurocarpa ramosa*, n. s.

Hydrosome:—Hydrocaulus branching, eight to ten inches high. Stem stout, non-fascicled. The branches bear medially placed rows of nematophores. Pinnæ jointed, alternate, arise from upper surface of the branches. Hydrothecæ closely approximated on the pinna, short, thick, margin toothed. Intrathecal ridge prominent. Mesial nematophore in distally placed hydrothecæ, adnate along the whole face, and continued beyond the orifice of the hydrotheca. In proximal hydrothecæ, however, although adnate along the face of the hydrotheca, the mesial nematophores seldom rise above the margin.

Gonosome:—Corbula open, formed by many rib-shaped pinnæ on the proximal end of a branch. Each rib is destitute of hydrothecæ, and covered with tubular nematophores, which project at right angles to the axis of the rib from all sides. Proximal end of the branch of which the corbula is a modification destitute of pinnæ, forming a peduncle for the gonosomes. It bears several hydrothecæ. The branch beyond the corbula bears many alternately arranged pinnæ, with hydrothecæ, not unlike a normal branch of the trophosome.

St. Vincent, 95 fms.

This genus proves without doubt that the structure called a corbula is in some cases a modified branch, and not, as Allman has shown to be true in some genera, a modified pinna. According to Allman, the ribs of the

corbula are homologous to the developed mesial nematophores of hydrothecæ, while the corbula itself is a metamorphosed pinna. To that theory the corbula of *A. bispinosa* seems to point, but even in it there are some difficulties to be explained before the corbula can be looked upon as a modified pinna. In *A. bispinosa* that pinna which bears the ribs of the corbula must be regarded as bearing two rows of hydrothecæ side by side, a condition which is found in the normal pinna of no member of the genus *Aglaophenia*. That the structures which have been described as corbulæ in *Pleurocarpa* are modified branches,\* there can be no doubt. It seems also certain that they are homologous to the gonosomes open or closed of the genus *Aglaophenia*. *Pleurocarpa* has a corbula nearest related to that of *A. bispinosa*. It differs from this species, however, in possessing a terminal extension of the axis of the corbula, which bears pinna, and in the absence of hydrothecæ at the base of the ribs of the corbula. A minor characteristic of *Pleurocarpa* is found in the mesial nematophore, which is very long, being continued beyond the orifice of the hydrotheca. The nematophores on the ribs of the corbula of *Pleurocarpa* are longer and more tubular than those on the gonosome of any known *Aglaophenia*. If we look upon the corbula as a modified branch, and not a metamorphosed pinna, the morphology of the gonosome of *Callicarpa* becomes plain. The spike of *Callicarpa* can then be regarded as a modified branch, and as a corbula homologous to the corbula of *Aglaophenia*. If that is true, in the same way the distal extremities of the branches in *Hippurella* are also corbulæ.

The fact that the margin of the proximal hydrothecæ is not as deeply notched as that of the distal, and that the mesial nematophore of the former rises but little from the margin, while that of the latter extends far beyond the orifice, seems to indicate that the growth of the hydrothecæ on the pinna takes place proximally as regards the main stem. In other words, instead of growing at its distal end, it elongates at the proximal extremity, and the oldest formed hydrothecæ are always at the most distal end of the pinna.

## CTENOPHORA.

### *Ocyroë maculata*, RANG.

Specimens of *O. maculata* were taken by Mr. Agassiz off St. Vincent. From his drawings and notes, the following description has been compiled.

*Ocyroë*, as it floats in the water, is well marked by the presence on the walls of the oral lappets of four large spots, which are very prominent. These characteristic structures are situated on the inner walls of the oral lappets, and are formed by a great development of muscular fibres, concentrated in four areas. Similar muscular fibres, or rows of cells, are found on the inner wall of the oral lappets of all Bolina-like Ctenophores, where they are more regularly

\* Forbes, Edw., Ann. and Mag. Nat. Hist., Dec. 1844. Forbes regarded these bodies in *Plumularia cristata* as branches.

arranged on the surface, and not concentrated, as in *O. maculata*, into prominent areas. The spots are most conspicuous when the medusa is seen from the aboral region. When the *Ocyroë* is seen from the side, and not from above or below, only two of these areas can be observed,

In general profile *O. maculata* resembles *Bolina*. The oral lappets are, however, much more developed, and when expanded are carried at a right angle to the axis of the medusa. At its distal end each lobe divides into two wings, which narrow until they become pointed. Plate IV, fig. 3.

The medusa is very active in its movements. The motion is due to the "jerky" contraction of the oral lappets. The quick contraction of the muscular areas forming the conspicuous brown "spots" is the main cause of this violent motion of the oral lappets.

The chymiferous tubes of the oral lappets have a very tortuous course, especially in that part of their extent near where they join the base of the auricles. The rows of combs differ but little from those of *Bolina*, except from the great development of the oral lappets, four are relatively much longer than the remainder.

The auricles are longer than in *Bolina*. The tentacles, if present, are short and inconspicuous.

This description is made up wholly from drawings and notes by Mr. Agassiz. I have never seen *O. maculata*.

St. Vincent and Barbados, 1879, March.

## DISCOPHORA.

### *Dodecabostrycha dubia*, BRANDT.

A Discophore closely allied to *Dodecabostrycha dubia*, Br. was obtained by Mr. Agassiz\* in the Gulf Stream, in the summer of 1880.

Bell low, disk-shaped, with thin walls. The interior in alcoholic specimens is filled by a dark purple mass composed of sexual tentacles, ovaries, and stomach. At the apex there is a slight prolongation of this mass into the bell substance, resembling the "scar" on the apex of the bell of a young hydroid medusa, where, however, it is the remnant of an attachment to a hydroid.

The lower part, or margin of the bell, is very much enlarged, forming the marginal lobules, which hang down on the rim far below the point of insertion of the tentacles. The marginal lobules are supported by sword-shaped bodies, blunt at one end and tapering at the other, which is their distally placed extremity. Each lobe is supported by one of these structures, which is medially placed as regards the lobe. The number of tentacles is twelve, while the number of marginal lobules is sixteen. The tentacles arise in the incisions between the marginal lobules.

The otocysts are four in number, and spring, like the tentacles, from the in-

\* Letter to Mr. C. P. Patterson, No. 4, Bull. M. C. Z., Vol. IV. No. 8.

cisions between the marginal lobules. Each pair of otocysts is separated by three tentacles. From the alcoholic specimens I could not determine their ultimate structure. They are mounted on a short style, and seem to resemble closely the otocysts of *Pelagia*. The structure of the under floor of *Polybostrica* is very peculiar. The oral appendages are joined together, forming a cylindrical body with a terminal mouth opening. This complicated labial appendage hangs from the lower floor at four points, where the walls are thicker than in intermediate portions. The part of the cylinder between two supports is inflated, hanging down in a bag shape.

The ovaries were partially destroyed, but enough of them remained to show that in their position they alternate with the attachments of the oral appendages, and that the ovarian tentacles are very large.

The size of the jelly-fish in alcohol is more than eight inches in diameter. Smaller examples were also taken, which were an inch or an inch and a half across.

CAMBRIDGE, March 1, 1881.

EXPLANATION OF PLATES.

PLATE I.

- Fig. 1. *Hippurella annulata*, All.  
 Fig. 2. *Aglaophenopsis hirsuta*, n. g. & s.  
 Fig. 3. *Cryptolaria abies*, All.  
 Fig. 4. Gonosome of *A. insignis*, n. s.  
 Fig. 5. Hydrotheca of *Cladocarpus compressus*  
 Fig. 6. Hydrotheca of *A. insignis*, n. s.  
 Fig. 8. Gonosome of *C. abies*, All.  
 Fig. 9. Denticled stem of *C. compressus*, n. s.  
 Fig. 10. Nematophores on the jointed appendage of *A. hirsuta*.

PLATE II.

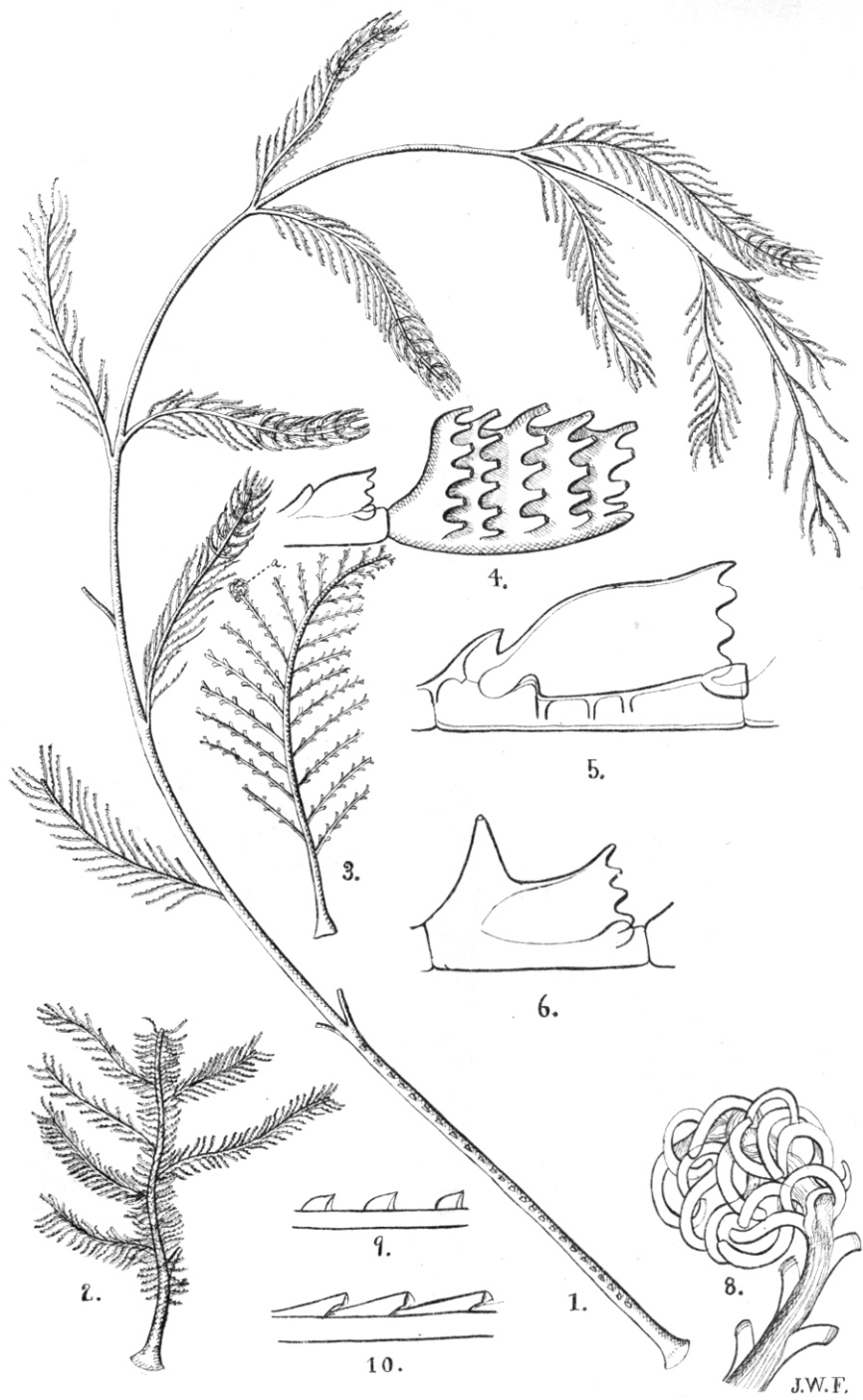
- Fig. 1. *Callicarpa gracilis*, n. g. and s.  
 Fig. 2. Gonosome of *C. gracilis*.  
 Fig. 3. Gonophore of *Aglaophenopsis hirsuta*.  
 Fig. 4. Section of gonosome of *H. annulata*, All.  
 Fig. 5. Side view of the same.  
 Fig. 6. Hydrotheca of *C. gracilis*.  
 Fig. 7. Section of the gonosome of *C. gracilis*.  
 Fig. 8. Hydrotheca of *H. annulata*, All.

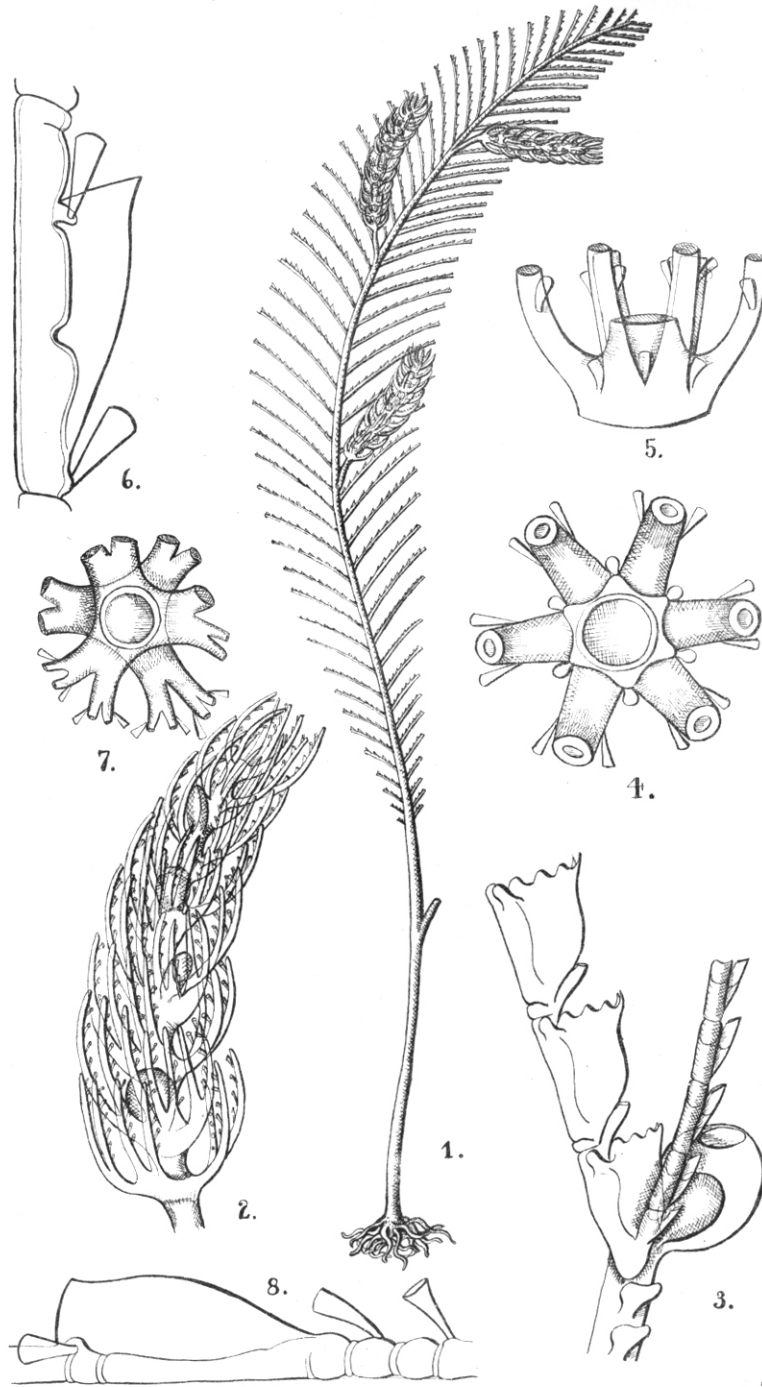
PLATE III.

- Fig. 1. *Cladocarpus compressus*.  
 Fig. 2. Gonosome of *Pleurocarpa ramosa*, n. g. & s.  
 Fig. 3. Hydrotheca of *Antennopsis ramosa*.  
 Fig. 4. Base of a pinna of *Plumularia caulitheca*.  
 Fig. 5. Hydrotheca of *Pleurocarpa ramosa*.  
 Fig. 6. Hydrotheca of *A. gracillima*, n. s.  
 Fig. 7. Hydrotheca of *A. minuta*, n. s.  
 Fig. 8. Gonosome of *A. gracillima*.

PLATE IV.

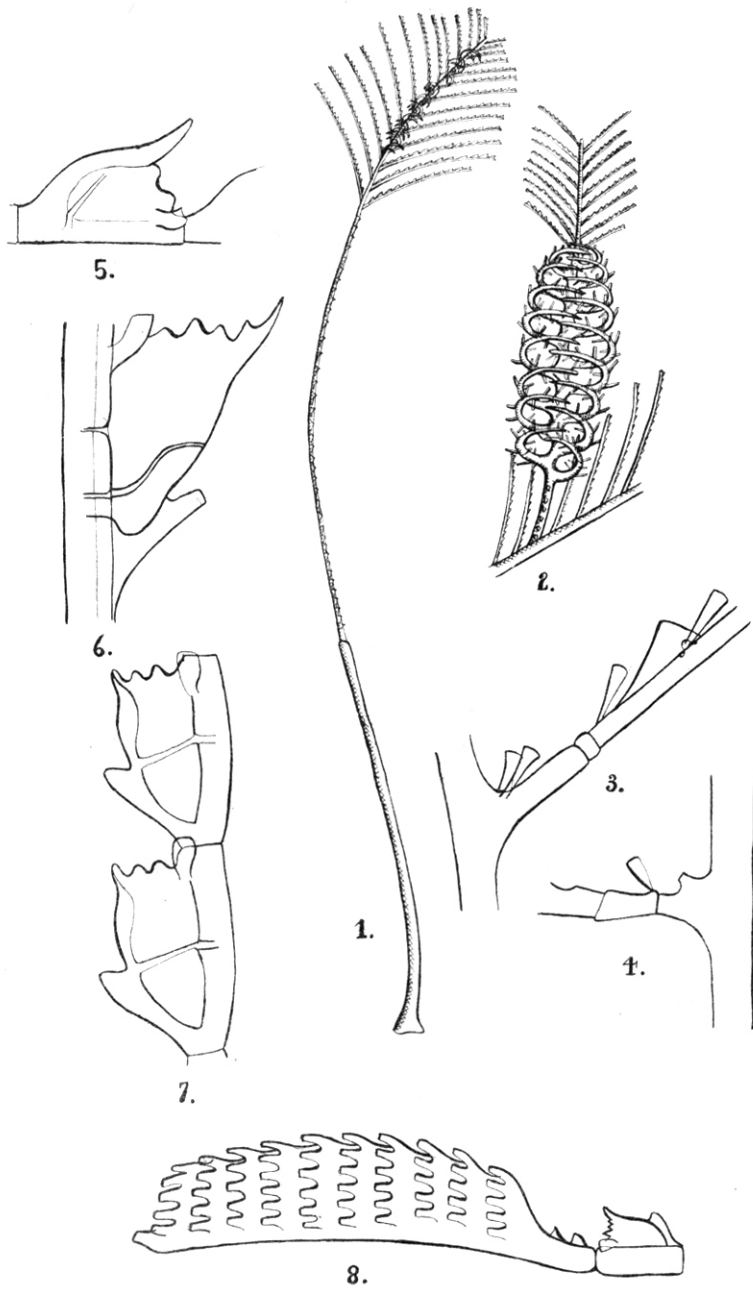
- Fig. 1. *Ocyroë maculata*, Rang. (side view).  
 Fig. 2. *O. maculata* (oral lappets seen more in profile).  
 Fig. 3. *O. maculata* (aboral view of one quarter of the medusa).  
 Fig. 4. *O. maculata* (the oral lappets are closely drawn together). View from same side as Fig. 1.  
 Fig. 5. *Dodecabostrycha dubia*, Br.



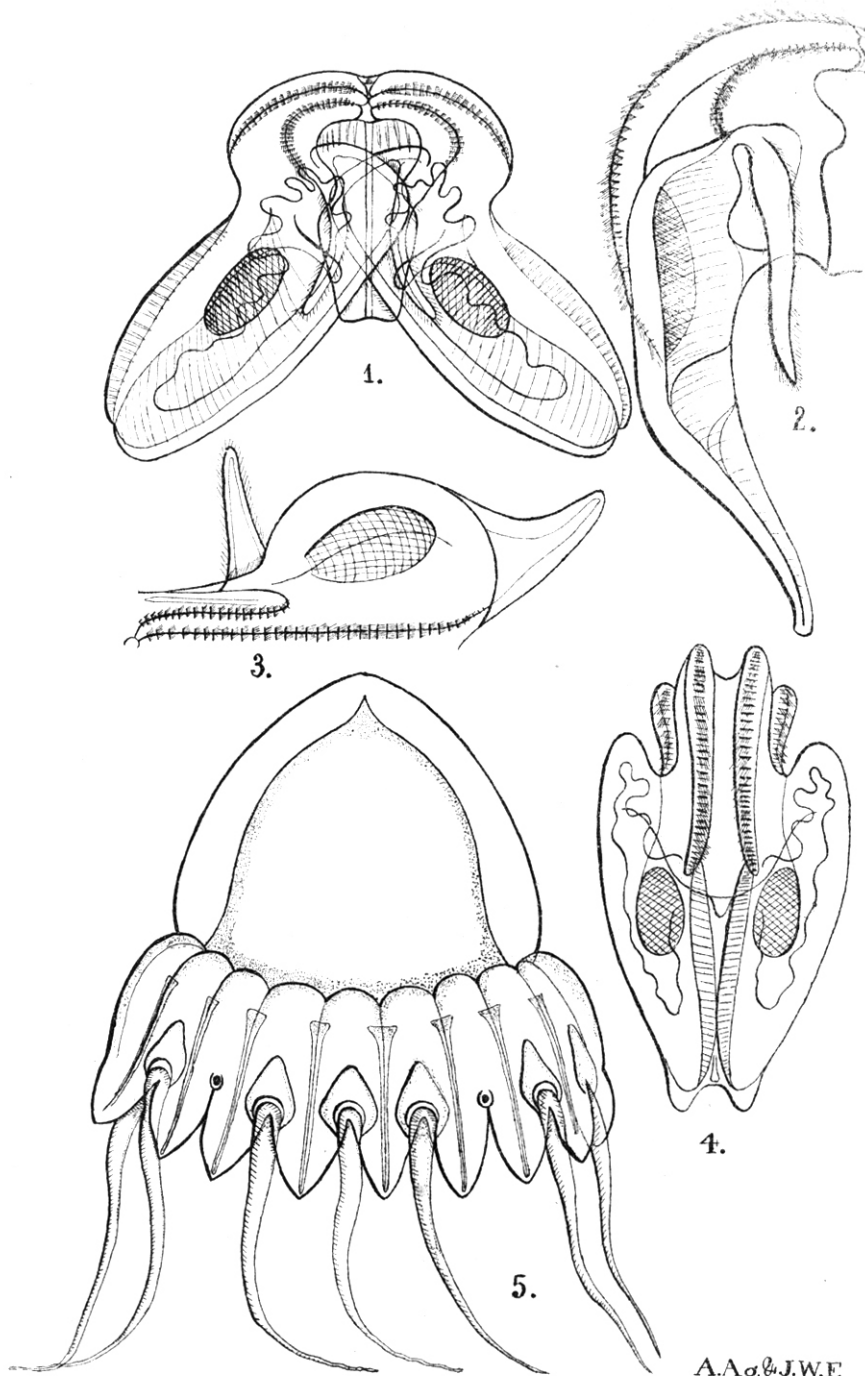


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