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理學博士 岡村金太郎 著

ICONES OF JAPANESE ALGÆ

Vol. VI. No. IV.

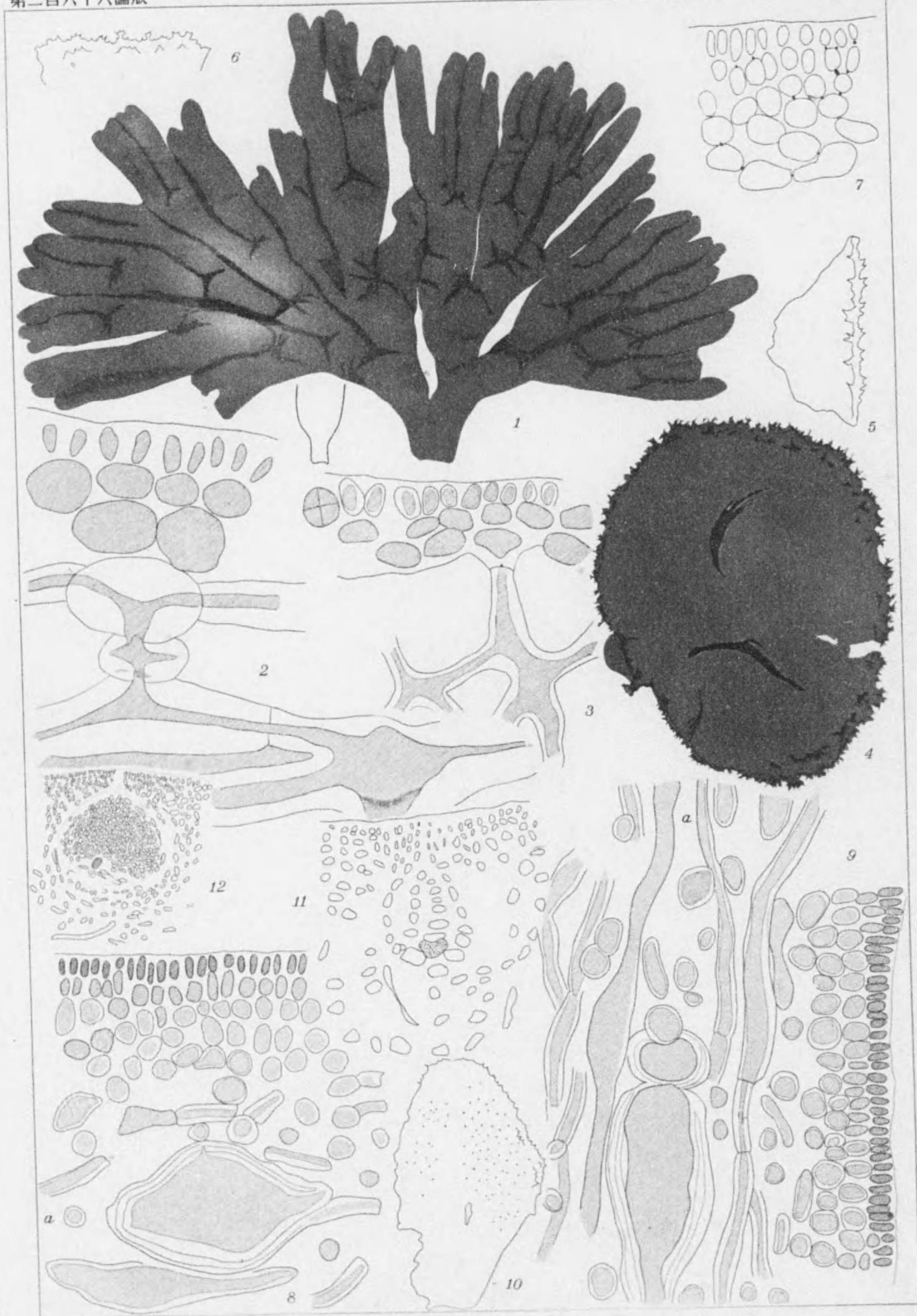
BY
K. Okamura *Rigakuhakushi*

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Halymenia Agardhii De Toni.

Nom. Jap.: *Nurakusa*.

PL. CCLXVI, Fig. 1-3.

Halymenia Agardhii De Toni Syll. Alg., IV, p. 154; Web. v. Bos. Alg. du Siboga, Rhodophyc., 1921, p. 237.— Collins and Hervey, Alg. of Bermuda, 1917, p. 149.

*Fron*d abruptly tapering to a very short stem at base, regularly dichotomo-fastigiata, flabellate, ending in an equal height, 8-10 cm. high. Branches dichotomous in short distances (10-15 mm. apart), standing on narrow slit-like axils. Segments slightly expand beneath forks in a cuneate manner, especially in the middle and lower segments, and the breadth of the succeeding branches are about one half as just preceding ones. Ultimate branches are almost cylindrical, ending in blunt or bifid apex. Plant is terete and very gelatinous and succulent. Breadth of segments 10-20 mm. in the widest portion (dried). Frond internally consists of loosely anastomosing, characteristic, stellate cells, externally covered by a few layers of dichotomously branching roundish cells, which end in only one layer of cortical cells; cortical membrane is thus very thin.—*Tetrasporangia* scattered among cortical layer, roundish. *Colour* rosy red. *Substance* very soft, succulent, and gelatinous. Plant firmly adheres to paper in drying.

Hab.: Washed ashore. Nagasaki Pref., Prov. Shima.

At first I took the present plant for *H. fastigiata* J. Ag. referring to Zan. Icon. Phyc. Adr., p. 73, t. 91, f. 1-2, but I came to doubt of the distribution far remote from the typical waters of that plant. At last I found that *H. Agardhii* De Toni is very closely resembling to the present plant, and though I have no facility to make comparison with the reliable specimen I dared to refer our plant to that species provisionally.

PL. CCLXVI, Fig. 1-3. Fig. 1: tetrasporic frond of *Halymenia*



Agardhii De Toni, 1/1.—Fig. 2-3: portion of the section of frond to show the cortical structure and stellate cells; in fig. 3 a tetraspore is seen; fig. 2, ⁵⁰⁰/1; fig. 3, ²⁴⁵/1.

***Erythrymenia obovata* Schmitz.**

Nom. Jap.: *Marubagusa*.

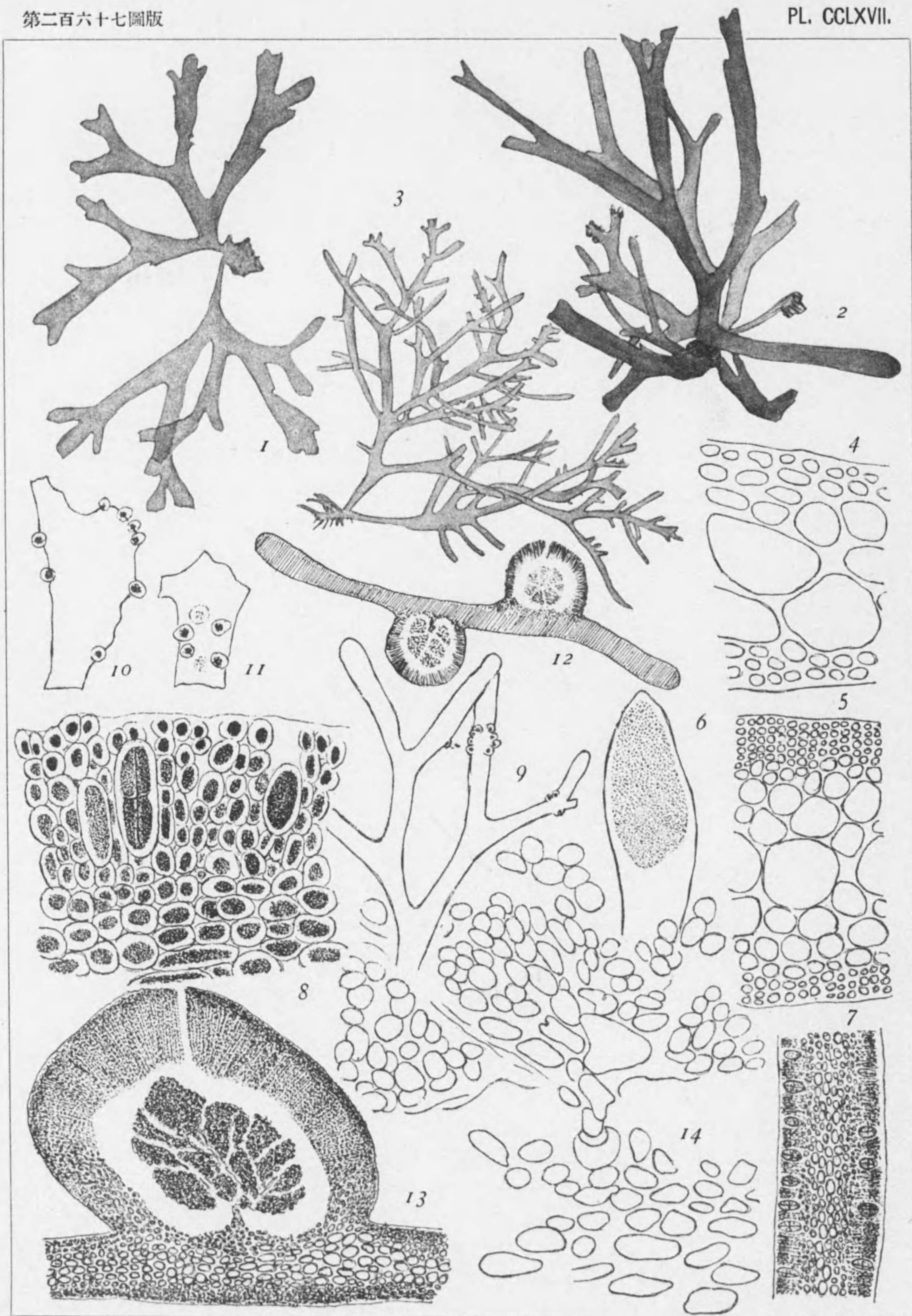
PL. CCLXVI, Fig. 4-12.

Erythrymenia obovata Schmitz, 1892, in Becker Alg. mar. Afr. Austral. (nomen); Mazza in Nouva Notarisia, 1921, p. 109; De Toni Syll. Alg., VI, p. 293.

Frond thin-membranaceous, almost round or a little expanded transversely, equal or slightly reniform at base, furnished with a very short stem (3 mm. long, scarcely 1 mm. thick) arising from a scutate disc, smooth, almost or very slightly undulated. Margin a little thickened and coarsely dentate along both edges of the thickened portion. Teeth also arise from the surface within and parallel to margin in a discontinuous manner. Frond attains in the largest one the size of 15 × 17 cm. It internally consists of chiefly longitudinally running filaments with many irregular ones, which here and there swell up into bulb-like or oblong or irregularly shaped portions, externally covered with 3-4 layers of repeatedly dichotomous vertical rows of cortical cells, gradually becoming smaller upwards. The bulky cells contain a little ferruginous, milky coloured contents.—*Tetrasporangia* unknown. *Cystocarps* minute dot-like, scattered over the surface of the frond; the structure quite that of *Grateloupia*. *Colour* red. *Substance* smooth to touch, coriaceous and the plant imperfectly adheres to paper in drying.

Hab.: washed ashore; Enoshima, Dyogashima near Misaki.

On making the determination of the present plant I have been fortunate enough to compare with the cotype specimen, *The Kowie*, S.



Rhodymenia intricata (Okam.) Okam.

まきごしぱり

Africa, from Herb. Dr. H. Becker, which is kept in my herbarium through his kindness. Becker's specimens have an obovate frond and are more robust than ours, having more large and rough teeth. Ours are more thin and teeth are weaker than in Becker's.

The structure of the frond is somewhat like *Erythrophyllum*. The plant is put in Mazza *l. c.* in Rhodymeniaceae as "Genere d'incerta sede"; but it ought to be placed under *Grateloupiaceae* from the structure of the cystocarp.

PL. CCLXVI, Fig. 4-12. Fig. 4: frond of *Erythrymenia obovata* Schmitz, $\frac{1}{1}$.—Fig. 5: portion of margin of frond, $\frac{1}{1}$.—Fig. 6: surface view of the margin of frond having some discontinuous teeth within margin, $\frac{1}{1}$.—Fig. 7: portion of the cross section of frond to show the structure of the cortical layer, $\frac{500}{1}$.—Fig. 8: cross-section of frond; *a*, middle portion of the frond; $\frac{500}{1}$.—Fig. 9: longitudinal section of frond; *a*, middle portion of the frond; $\frac{500}{1}$.—Fig. 10: frond bearing cystocarps, $\frac{1}{1}$.—Fig. 11: auxiliary cell, $\frac{240}{1}$.—Fig. 12: cystocarp, $\frac{120}{1}$.

Rhodymenia intricata (Okam.) Okam.

Nom. Jap.: *Masagoshihari*.

PL. CCLXVII.

Phyllophora intricata Okam. Icon. of Jap. Alg., Vol. IV, no. 7, p. 129, PL. CLXXXII, fig. 1-8.

Fronds 5-10 cm. long, circularly expanding, procumbent or decumbent, attached to the substratum by small discs formed on the decumbent base of the frond or on the filiform and creeping segments emitted from the surfaces of the basal portion, with or without short stipes. Branches flat and compressed, irregularly dichotomous and are rather variable in shape, usually dichotomous, but sometimes subpinnate. Segments patent with round axils. Branches adhere to each other at the places where

they come in contact by forming root-like discs or simply by fusing together; they often become fixed to the substratum by the attaching organs made even on their apices, and the intrication of branches is helped by filiform or more or less broad rooting segments emitted from margin and surfaces of the upper portion of frond. Segments vary from 2 to 5 mm. in breadth, mostly broadly linear, some almost leaf-like, while in extreme ones filiform (Pl. 182, f. 6). Apex of segments oblong, spatulate, ligulate or pointed.

Tetrasporangia forming an oval or roundish sorus beneath the apex of branches. *Cystocarps* small, globoso-hemispherical, formed on the margin of the upper portion of branches or on both surfaces within the margin, furnished with a carpostome. *Colour* purplish red. *Substance* soft-cartilaginous and the plant does not adhere to paper in drying.

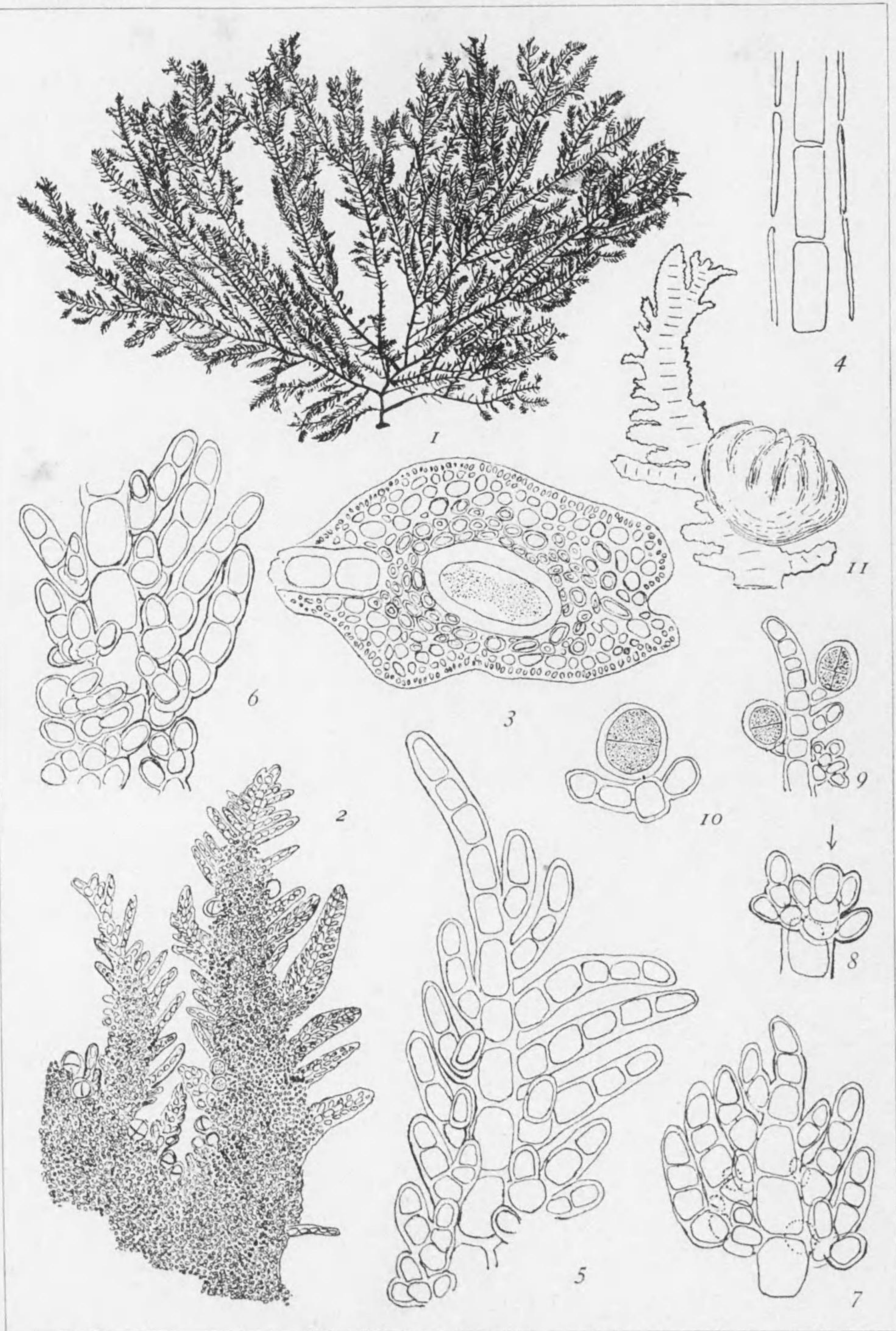
Hab.: on rocks between tide marks near low tide; Prov. Iyo, Kii, Idzu, Sagami, Iwaki, Echigo. *Fruits*:—summer.

PL. CCLXVII. Fig. 1: tetrasporic frond of *Rhodymenia intricata* (Okam.) Okam., $\frac{1}{1}$.—Fig. 2: cystocarpic frond, $\frac{1}{1}$.—Fig. 3: sterile and subpinnately branched frond, $\frac{1}{1}$.—fig. 4: portion of the cross-section of the frond having thin cortical layer, $\frac{500}{1}$.—Fig. 5: cross-section of the frond having a thick cortical layer, $\frac{240}{1}$.—fig. 6: tetrasporic sorus, $\frac{7}{1}$.—Fig. 7: cross-section through tetrasporic sorus, magd.—Fig. 8: portion of the cortical layer bearing tetrasporangia, $\frac{500}{1}$.—Fig. 9: cystocarpic frond, $\frac{1}{1}$.—Fig. 10-11: cystocarps, $\frac{7}{1}$.—Fig. 12: longitudinal section of a cystocarp, $\frac{28}{1}$.—Fig. 13: vertical section of a cystocarp, $\frac{100}{1}$.—Fig. 14: basal portion of the nucleus, $\frac{500}{1}$.

Plumariella Gen. nov.

Ceramiaceae.

Diagn. Frond filiform, erect, richly branched in a plane in the opposite pinnate manner, subancipito-compressed, thickly corticated, leav-



Plumariella Yoshikawai Okam. sp. nov.

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ing upper portion of branches and branchlets always naked. Cortical cells formed from the cells of simple or branched pinnulae, standing on both sides of the plane of pinnae, and arising from the basal cell or cells of the ultimate monosiphonous pinna. Growing apical cell horizontally divided. The central axis is thickly surrounded internally by filamentous cells and externally by cortical cells. *Tetrasporangia* terminating short articulated pinna, appearing as if issuing from beneath the cortical layer along both sides of branches, cruciate. *Cystocarps* sessile on the sides of branches, surrounded by many finger like involucre.

Plant closely resembling to *Euptilota articulata* (J. Ag.) Schm. (Pl. CLXXXIII), and *Plumaria elegans* (Bonn.) Schm. in form and habit, but greatly differing in the mode of cortication from *Ptilota* and *Plumaria*, two representatives of the hitherto-known types of cortication of the plants of Ceramiaceae. In the present plant cortical cells are formed from the cells of pinnulae arising from the basal cell or cells of the ultimate pinna. The cells of pinnulae stand on both sides of the plane on which the opposite pinnae lie, and are pointed upward that is toward the apex of the rachis of the pinnae, instead of downward; they bend toward the rachis of the pinnae so as to embrace it closely, and soon firmly attaches to it, giving rise by successive divisions to the cortical cells. Thus *Plumariella* forms a new type of cortication. Among allied species, *Plumaria Eatoni* (Dickie) Schmitz (= *Ptilota Eatoni* Dickie) has cruciate tetraspores, by which character De Toni established new gen. *Plumariopsis* for it. Tetraspores in the present plant are also cruciate, but the nature of cortication is different from *Ptilota Eatoni* Dickie, as it seems from the description and figures of Askenasy 'Gazelle' p. 37, tab. IX, f. 6-7.

Plumariella Yoshikawai Okam. sp. nov.

Nom. Jap.: *Itoshinobu*.

PL. CCLXVIII.

Characters same as that of genus. Frond attains the height of 7-10 cm.

Hab.: washed ashore. Ôshima, Prov. Idzu (H. Yoshikawa).

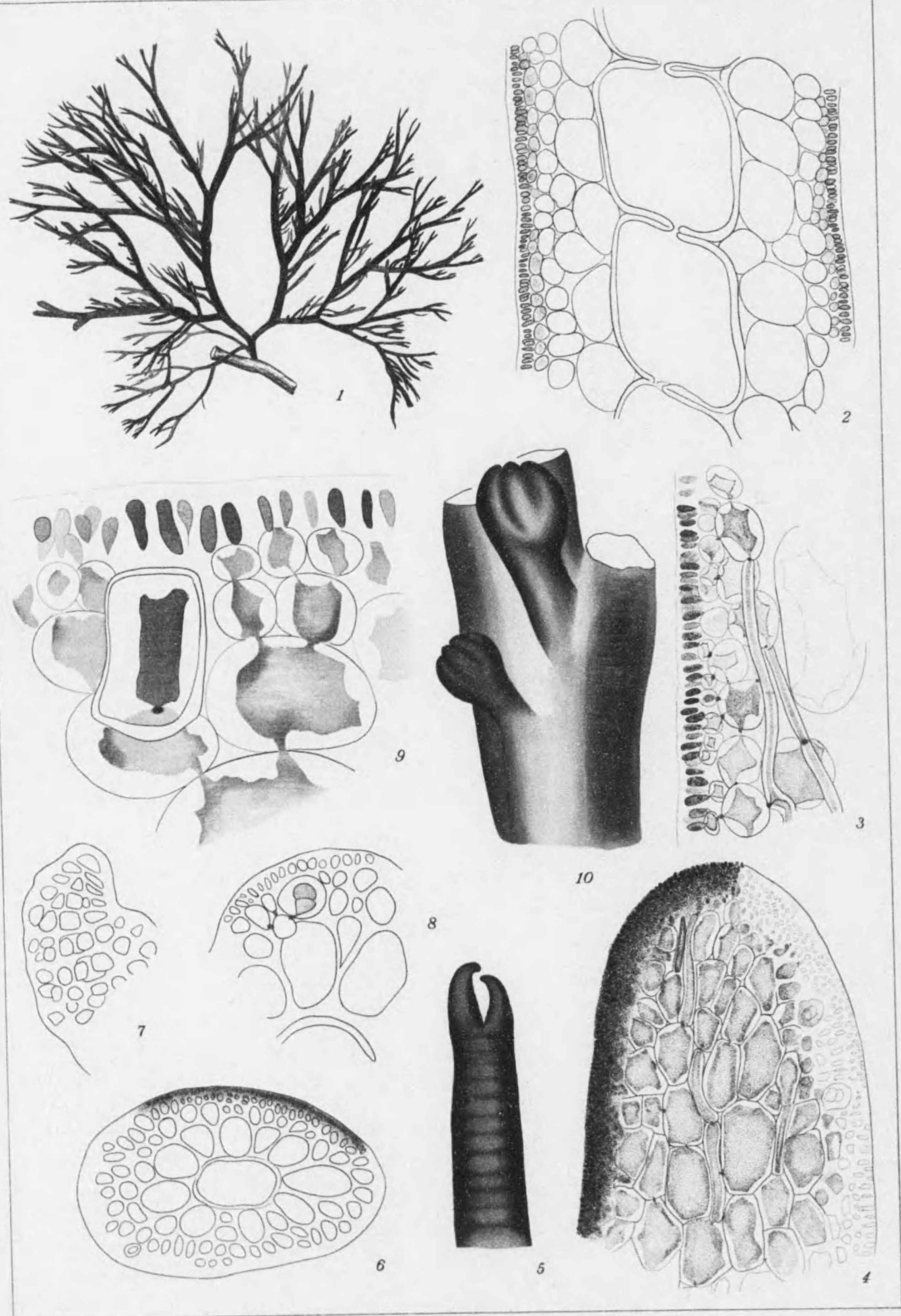
PL. CCLXVIII. Fig 1: frond of *Plumariella Yoshikawai* Okam., $\frac{1}{1}$.—Fig. 2: portion of frond viewed from the surface, $\frac{100}{1}$.—Fig. 3: cross-section of the upper portion of stem, $\frac{110}{1}$.—Fig. 4: portion of optical section of branch to show filamentous cells around the central axis, slightly magd.—Fig. 5-7: simple or branched pinnulae formed from the basal cells of pinnae, $\frac{500}{1}$; in fig. 7 dotted line shows the cells on other side.—Fig. 8: pinna viewed from the flank, $\frac{500}{1}$; the arrow indicates a pinna consisting of 3 cells, from the basal cell of which one pinnula made of one cell arises on the right side, the other made of 4 cells, on the left; from the cell next above every one-celled pinnula arises on both sides; the largest cell shows one of the cells making the rachis of the pinna.—Fig. 9-10: pinna bearing tetraspores; 9, $\frac{240}{1}$; 10, $\frac{500}{1}$.—Fig. 11: cystocarp, slightly magd.

Ceramium crassum Okam. sp. nov.

Nom. Jap.: *Futo-igisu*.

PL. CCLXIX.

Diagn. Frond epiphytic, thick, filamentous, divaricately branched in patent and dichotomous manner, tapering to slightly incurved apices, furnished with mostly secund, simple or branched, short, proliferations which may grow up to branches; with articulations of the central axis



Ceramium crassum Okam. sp. nov. ふといぎす.

subequal to or shorter than the diam., thickly corticated with roundish and filamentous cells, and invisible through cortical layer; *tetraspores* immersed and scattered; *cystocarps* shortly pedicelled and involucrated.

Hab.: on *Sargassum* or *Capopeltis* between tide marks; Tyoshi, Enoshima.

Fronde epiphytic on other algae, thick-filamentous or almost cylindrical, a little tapering like stem toward the base, for a short distance divaricately branched in patent and dichotomous manner, gradually becoming narrower upward, and ending in slightly incurved forks. Every segment is furnished with mostly secund or irregularly inserted, short proliferations, which are either simple or once or twice or many times forked, tapering to both ends, and some of them may grow up to normal branches; sometimes almost destitute of proliferation. Fronds attain a height of 4-12 cm. with the thickness of 0.5-0.7 mm. Proliferations are 3-15 mm. long. The central axis is made of thick-walled cells having a wide calibre, the length of which is subequal to the diameter in the main portion, gradually becoming shorter upward, and is thickly covered by 4-5 layers of cortical cells, gradually becoming smaller outward, and cortication is so thick that the axis is invisible through the cortical layer. Among the infra-cortical cells some become much elongated and filiform, taking an appearance like rhizoidal cells.—*Tetrasporangia* immersed within the cortical layer, being scattered over the surface of branches. *Cystocarps* shortly pedicelled with short finger-like involucres.

That *Ceramium crassum* Okam. has a close affinity with a form of *Ceram. rubrum* is beyond any doubt, chiefly differing from it by having a thick cortical layer. It is interesting to find filiform, rhizoid-like cells in the present plant in connection with *Ceramium hypnaeoides* (J. Ag.) Okam. (= *Camphylaephora hypnaeoides* J. Ag.), which I reduced to the specific rank by taking the cells considered to be rhizoid by Schmitz and Hauptfleisch as primarily formed filamentous cells. By the presence of those rhizoid-like cells as well as by sickle-shaped swelling of the terminal por-

tion of branches those authors maintained *Campylaeophora* in accordance with J. Agardh.

PL. CCLXIX. Fig. 1: Frond of *Ceramium crassum* Okam. sp. nov., in nat. size.—Fig. 2: longitudinal section of the middle portion of frond, $100/1$.—Fig. 3: portion of a longitudinal section to show two filamentous infra-cortical cells, $245/1$.—Fig. 4: portion of a longitudinal section cut tangentially through the infracortical layer, to show the structure of the layer, $245/1$.—Fig. 5: surface view of a ramulus, $28/1$.—Fig. 6: cross-section of a branch bearing tetraspore, $48/1$.—Fig. 7: apical cell, $500/1$.—Fig. 8-9: tetraspores; 8, $100/1$; 9, $500/1$.—Fig. 10: cystocarps, $21/1$.

Griffithsia japonica Okam. Sp. nov.

Nom. Jap.: *Kazashigusa*.

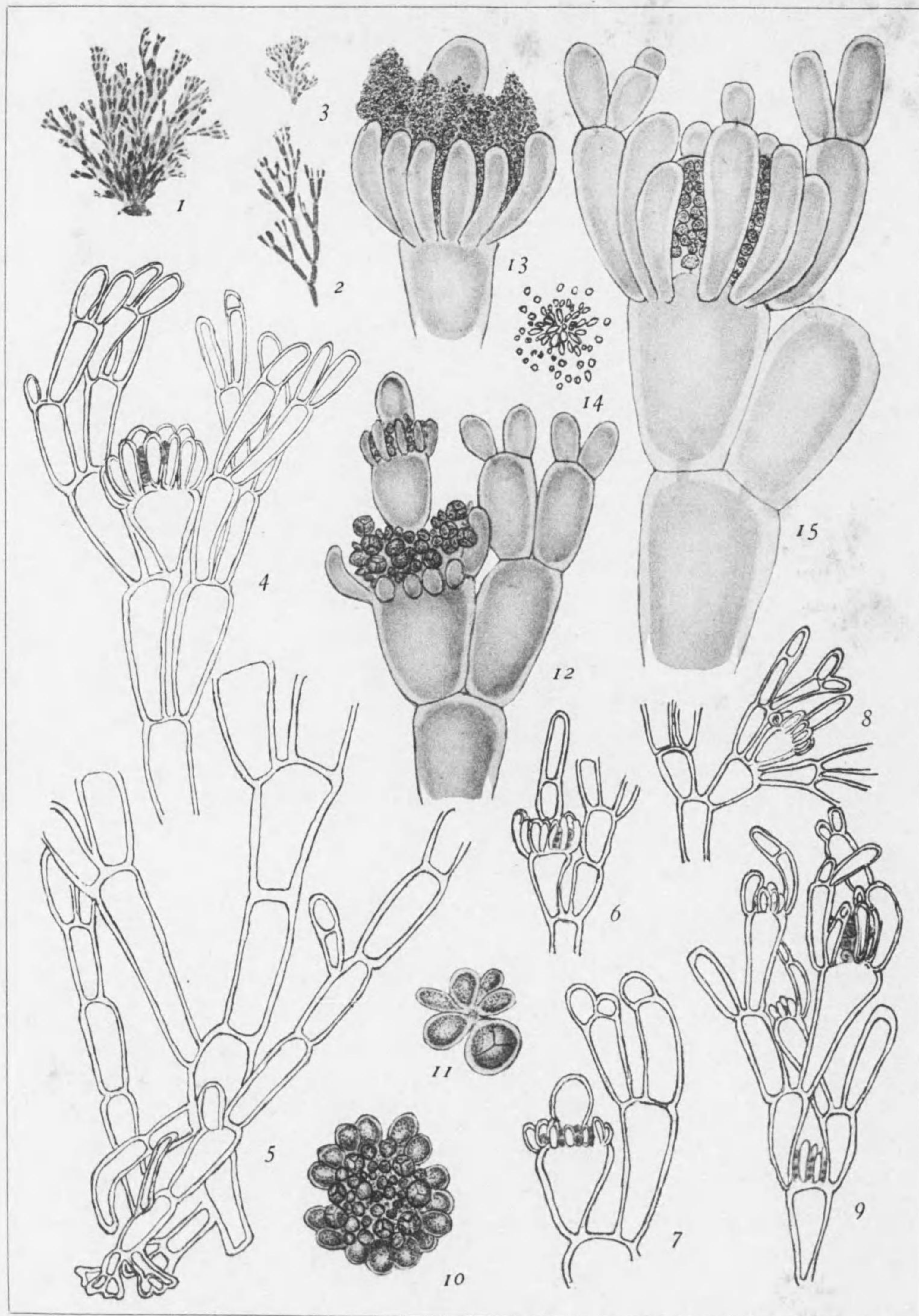
PL. CCLXX.

Griffithsia Schousboei Mont.; Yendo Notes on algae new to Jap., II, p. 289. (Bot. Mag. Tokyo, Vol. 28, n. 333, 1914).

Diagn. Frond erect, dichotomo-fastigiate, flabellate, with articulations intercepting 1-2 segments, subcylindrical below, subclavate or cylindrical and more or less cuneate above, 4-6 times as long as the diam. in the lower articulations, 2-3 times in the upper ones; *tetraspores* densely clustered in whirl around the shoulder of the cell or cells next to the apex of short lateral joint with simple, one-celled incurved involucre, some of which develop to branches; *antheridia* densely clustered as in tetraspores; *cystocarps* terminating lateral articulation, surrounded by simple or branched involucre.

Hab.: on various algae between tide marks extending to sublittoral zone; Kyushu to Matsushima.

Frond 3-4 cm. high, caespitose, erect, 0.5-0.7 mm. thick, repeatedly dichotomous, flabellato-fastigiate, expanding in a plane in the fresh



Griffithsia japonica Okam. sp. nov.

かざしぐさ

state, with articulations intercepting 1-2 segments. Articulations subcylindrical below (320-340 μ in diameter), emitting root-like filiform branches, by which the plant attaches to the substratum by forming disc-like expansion on their extremities, and also attaching to each other by discs. Upper articulations subclavate or subcylindrical, often a little widening upward and tapering to their lower extremities, sometimes becoming more pyriform. Length of articulations 4-6 times as long as diam. in the lower articulations, 2-3 times in the upper and measures 575-920 μ .—*Tetraspores* densely clustered in a whirl around the shoulder of the cell or cells, second or third from the apex of a short lateral branch, and surrounded by incurved involucre. Often the terminal cell drops off and tetrasporic clusters seem to terminate the lateral branch. Involucres of tetraspores are mostly simple and one-celled, but one or two of them often develop to normal branches which bear tetraspores in turn. *Antheridia* densely clustered or loosely tufted around the shoulder of the cell next to the apical one of lateral branches, surrounded by simple (or sometimes branched as in the case of cystocarp?) involucre. *Cystocarps* 2-3 together formed on the apex of a short lateral articulation surrounded by a whirl of subcylindrical, simple and one-celled or once forked involucre. Number of involucre amounts to 16. *Colour* rosy red. *Substance* soft and thin-membranaceous and the plant firmly adheres to paper in drying.

Yendo remarks in his *l.c.* that he identified a *Griffithsia* to be *Gr. schousboei* Mont. after having studied the authentic specimen of that species. His plant is same as ours, and at first I thought the plant in question to be that species in accordance with him; but, consulting its literature, there is none which mentions that some of involucre develop to normal branches. Considering, on the one hand, that the present plant is in far remote waters from the type locality, and on the other, that I could not find any paper reporting the occurrence of *G. schousboei* or its variety in the Pacific Ocean, as far as I am aware, I think better to

take the present plant as a distinct species. If not a new species, a variety?

PL. CCLXX. Fig. 1-3: fronds of *Griffithsia japonica* Okam. n. sp., $1/1$; 2, portion of fig. 1; 3, small fructified fronds dredged at Misaki.—Fig. 4-5: upper (fig. 4) and lower (fig. 5) portions of the same tetrasporic frond, $2^3/1$.—Fig. 6-9: different forms of tetraspore-bearing articulations of one and the same frond; in fig. 6, spores formed verticillately on the shoulder of the third cell from the apex; in fig. 7-8, formed on the second cell from the apex; in fig. 9, one or two of involucre develop to normal branches; 6, 8, $1^4/1$; 7, $4^8/1$; 9, $2^1/1$.—Fig. 10: tetrasporic clusters seen from above after having dropped off apical cell, $4^8/1$.—Fig. 11: tetraspores, $10^0/1$.—Fig. 12-15: three kinds of fruits get at the same time and same place in fronds having the same size as fig. 3, magd.; 12, tetraspores formed around the second and third joints from apex; 13, antheridia formed around the shoulder of the second joint; 14, antherozoids, $6^80/1$; 15, cystocarp.

Halymenia Agardhii De Toni

ぬらぐさ 岡村命名

第 266 圖版, 1-2 圖

體ハ下部急ニ極メテ短キ莖ノ如キ部分ト成リ, 正シク叉狀ニ分レテ直立シ, 扇狀ヲナシ, 枝皆同一ノ高サニ終ル, 8-10 cm. 高シ. 枝ハ少距離ニ (10-15 mm. 距リテ) 叉狀ニ分岐シ, 殆ド隙間ノ如キ狭キ腋ヲ以テ立ツ. 各部ハ分岐點ノ下ニ少シク楔形ニ擴ガリ, 殊ニ中央部及下部ノモノニ於テ然リトス, 而シテ相次グ枝ハ其前位ノモノ、約半分ノ幅ヲ有ス. 最末位ノ枝ハ殆ド圓柱狀ニシテ鈍圓ニ終リ或ハ二裂ス. 體ハ圓柱狀ニシテ極メテ粘滑多肉ナリ. 各部ノ幅ハ其最モ廣キ部分ニテ 10-20 mm. アリ (乾燥品ニテ). 體ノ内部ハ此屬ニ固有ナル星狀ノ細胞ノ緩ク錯綜セルモノヨリ成リ, 外部ハ叉狀ニ分岐セル 2-3 層ノ細胞列ト1層ノ皮層細胞トヲ以テ成ル; 此故ニ皮膜ハ甚ダ薄シ. 四分胞子囊ハ圓クシテ皮層ニ散在ス. 質ハ軟カキ膜質ニシテ粘滑多肉ナリ, 乾燥スルトキハ固ク紙ニ附着ス.

産地: 打揚品ナリ. 長崎縣, 肥前口ノ津, 志摩, 紀州日高(岡本).

分布: Borneo.

數個ノ措葉アルノミ.¹⁾ 初メ予ハ *Halymenia fastigiata* ナラント考ヘタレドモ其太西洋ニ産スル所ヨリ餘リニ分布上遠隔スルヲ以テ疑ヲ懷クニ到レリ. 本種ハ *H. Agardhii* De Toni ニ酷似スルモノ、如クナレドモ信據スベキ標品ナキヲ以テ比較スルノ便ナシト雖モ暫ク此種ナリト断定ス.

第 266 圖版, 1-3 圖. 1: *Halymenia Agardhii* De Toni ぬらぐさ, ノ四分胞子アル體ト其基部, $1/1$.—2-3: 體ノ断面ノ一部ニシテ皮部ノ構造ト星狀ノ細胞トヲ示ス; 3ニハ1個ノ四分胞子アリ; 2, $\times 500$. 3, $\times 245$.

1) 鮮時ノ状態ハ採集者ニ就テ知ルコトヲ得タリ.

Erythrymenia Schmitz 1894

まるばぐさ屬

GRATELOUPIACEÆ むかでのり科

體ハ圓形、膜狀ニシテ縁邊ニ粗キ鋸齒ヲ有ス、内部ハ主トシテ縦ニ走レル絲ヨリ成リ絲ハ所々長楕圓形ニ膨大シ又不規則ニ走ル絲狀細胞ヲ伴ナフ、外部ハ 3-4 層ノ屢々叉狀ニ分岐セル細胞列ヨリ成リ漸次外方ニ小ナリ、四分孢子ハ知ラレズ、囊果ハ小サキ點々ニシテ體ノ表面ニ散在シ、發生及構造トモ Grateloupia ニ同ジ。

原産地ハ亞弗利加ニシテ今 1 屬 1 種ノミナリ、一屬ノ名ハ Erythros (赤)ト hymen (膜)トヨリ成ル。

Erythrymenia obovata Schmitz

まるばぐさ 岡村命名

第 266 圖版, 4-12 圖

體ハ稍厚キ膜質ニシテ、殆ド圓形或ハ少シク横ニ廣ガリ基部淺ク腎臟形ヲナスカ又ハ左右等シク平坦ニシテ極メテ短カキ莖(長サ 3 mm., 幅辛フジテ 1 mm.) ヲ有シ、小サキ盤狀根ヨリ立チ、滑澤ニシテ略ボ平坦又ハ少シクウネリタリ、縁邊ハ少シク厚ク其厚クナレル部分ノ兩縁ニ粗ラキ鋸齒ヲ有シ、齒ハ又縁邊ニ近キ體ノ表面ヨリ縁邊ニ並行シテ斷續セル列ヲナシテ隆起ス、體ハ大ナルモノニ於テ長サ 15 cm. 幅 17 cm. アリ、體ノ内部ハ専ラ縦走セル絲狀細胞ト不規則ニ走レル絲トヨリ成リ其處此處ニ球根狀ニ長楕圓形又ハ不規則ノ形セル膨レヲナシ、外部ハ數回叉狀ニ連ナリテ縦ニ列セル 3-4 層ノ皮層細胞ヨリ成リ、漸次外方ニ小ナリ、膨レタル部分ニハ少シク鐵色ガ、リタル乳汁狀ノ内容物ヲ含ム、四分孢子囊ハ不明ナリ、囊果ハ體ノ表面ニ小サキ點狀ヲナシテ散布ス、助細胞及仁ノ構造發達トモ Grateloupia ニ異ナラズ、色ハ赤シ、質ハ滑ナル硬キ薄キ

革質ニシテ乾燥スルトキハ紙ニ附着スルコト充分ナラズ。

産地：打揚品(多分深處ノモノナラン)、相州江ノ島、城ヶ島(森氏)。

分布：亞弗利加, The Kowie.

本種ヲ查定スルニ當リ予ハ幸ニ原種ノ姉妹標品ナル南阿ノ The Kowie ニテ Dr. H. Becker ノ採集セル標本ヲ藏スルヨリ之ト比スルノ便ヲ得タリ、Becker ノ原品ハ倒卵形ニシテ本邦ノモノヨリ更ニ粗大ナル齒ヲ有シ本邦ノモノハ稍薄ク齒モ亦小ニシテ弱シ、是レ本種ノ分布上北ニ倚レル爲ナルベシ、體ノ構造ハ幾分 Erythrophyllum ニ類スル所アリ、本種ハ Mazza ニヨレバ屬ノ位置不明トシテ Rhodymeniaceae ニ編入サレタレドモ(今 Schmitz ノ原論文ヲ見ル能ハザルヲ以テ知ルヲ得ザレドモ多分 Schmitz ガ Rhodymeniaceae ニ編入シタルモノナルベシ)予ノ囊果ノ研究ニヨリテ Grateloupiaceae ニ入ルベキモノトス。

第 266 圖版, 4-12 圖。4: Erythrymenia obovata Schmitz, まるばぐさ, ノ體(江ノ島), 1/1.—5: 縁邊ノ一部, 1/1.—6: 縁邊ニ近キ表面ヨリ齒狀突起ノ出ル狀, 1/1.—7: 皮層ノ構造ヲ示ス横斷面ノ一部, 500/1.—8: 體ノ横斷面; α, 體ノ中央部, 500/1.—9: 體ノ縦斷面; α, 體ノ中央部, 500/1.—10: 囊果ヲ有スル體, 1/1.—11: 助細胞, 200/1.—12: 囊果, 120/1.

圖譜第四卷七集 141 頁ニ記載シタル Phyllophora intricata Okam., 第 182 圖版, 1-8 圖, ノ學名ハ誤ニシテ其記載ニモ亦多少改善ヲ加フベキモノアルヲ以テ更ニ下ノ如ク記載ヲ新ニス。

Rhodymenia intricata (Okam.) Okam.

まさごしばり 岡村命名

第 182 圖版 1-8 圖; 第 267 圖版。

體ハ 5-10 cm. 長ク、圓形ニ擴ガリ、平臥シ又ハ少シク斜上シ、莖アリ又ハ之ヲ缺キ、體ノ下部又ハ概ネ下部ノ縁邊及表面ヨリ出ル絲狀ノ匍匐スル枝ニ作ラレタル小サキ盤狀根ヲ以テ岩石ニ附着ス、各部ハ扁平ニ壓セラレ、不規則ニ叉狀ニ

分岐ス。體形幾分變化多ク、通常叉狀ナレドモ時トシテハ稍羽狀ニ分枝スルコトアリ。枝ハ圓キ腋ヲ以テ廣開ス、而シテ根ノ如キ盤ヲ作り又ハ單ニ互ニ癒合シ其相接スル所ニ於テ癒着シ、又往々枝ノ先端ニサヘ盤狀附着器ヲ作りテ岩石等ニ附着シ、體ノ上部ノ縁邊及表面ヨリ出ル絲狀又ハ多少廣キ部分ニ附着器ヲ作りテ以テ枝ノ互ニ癒着スルコトヲ助ク。各部ノ幅ハ2-5 mm. アリテ、或モノハ幅廣キ絲狀又ハ葉狀ヲナシ又極端ナルモノハ絲狀ヲナス(第182圖版, 6圖)。枝端ハ鈍圓、籠狀、舌狀又ハ尖銳ナリ。四分胞子ハ枝ノ頂端下ニ卵圓形又ハ長橢圓形ノ群ヲ形成ス。囊果ハ小ニシテ球狀-半球狀ヲナシ枝ノ上部ノ縁邊ニ近ク又ハ縁邊ニ近キ兩面ニ形成セラレ果孔ヲ有ス。色ハ紫紅色。質ハ軟キ軟骨様ニシテ乾燥スルトキハ紙ニ附着セズ。

產地：潮線間ノ低潮線ニ近キ岩石ニ生ズ。東京灣大貫、上總東金、伊豫高濱(八木氏)、紀州瀬戸(八木氏)、伊豆大島、相州城ヶ島、江ノ島、磐城、越後能生。果實：—6-8月。

囊ニハ囊果ヲ見ル能ハザリシ故唯體形ニヨリテ *Phyllophora* トシタレドモ今屬ヲ確ムルヲ得タルヲ以テ *Phyllophora intricata* Okam. ハ異名トシ隨テ現在ニテハ本邦ニハ *Phyllophora* ノ存在ハ不明ナリ、遠藤氏ノ Notes on Algae IV (植物學雜誌, 1916, p. 59) = *Phyllophora palmettoides* J. Ag. トシタルモノハ多分本種ナルベシ。

第267圖版。1: 四分胞子ヲ有スル *Rhodymenia intricata* (Okam.) Okam., まさごしばり(伊豆大島), $\frac{1}{4}$.—2: 囊果アルモノ, $\frac{1}{4}$.—3: 實ナクシテ稍羽狀ヲナセルモノ(東金産), $\frac{1}{4}$.—4: 體ノ横断面ノ一部、薄キ皮層ヲ有スル部分, $\frac{600}{4}$.—5: 厚キ皮部ヲ有スル部分, $\frac{200}{4}$.—6: 四分胞子群, $\frac{7}{4}$.—7: 四分胞子群ヲ通ジテ横斷シタル面、廓大。8: 四分胞子ヲ有スル皮層ノ一部, $\frac{600}{4}$.—9: 囊果ヲ有スル體(上總大貫), $\frac{1}{4}$.—10-11: 囊果, $\frac{7}{4}$.—12: 囊果ノ縦断面, $\frac{200}{4}$.—13: 同上, $\frac{100}{4}$.—14: 仁ノ基部, $\frac{600}{4}$.

Plumariella いとしのぶ屬(新屬)

CERAMIACEAE いぎす科

體ハ絲狀ニシテ直立シ、羽狀、對生ニシテ枝皆同一ノ面ニ擴ガリ、扁壓、厚ク皮層ヲ被ムリ、枝及小枝ノ上部ハ常ニ全ク皮層ヲ被ムルコトナシ。皮層細胞ハ最末位ノ一列ノ細胞ヨリ成レル羽枝ノ基部ノ一個若クハ數個ノ細胞ヨリ起レル單條又ハ分岐セル小羽枝ノ細胞ヨリ成リ、小羽枝ハ羽枝ノ存スル面ノ兩側ニ出ヅ。成長點細胞ハ水平ノ面ヲ以テ分裂ス。中軸ノ内部ハ絲狀ノ細胞ヲ以テ、外部ハ皮層細胞ヲ以テ厚ク圍繞セラル。四分胞子囊ハ短キ關節セル羽枝ノ頂端ニ形成セラレ枝ノ兩側ニ沿フテ宛モ皮層下ヨリ出タル如キ觀ヲ呈シ、十字様ニ分裂ス。囊果ハ枝ノ側面ニ座シ、無柄ニシテ數條ノ指狀ナル苞ヲ以テ圍繞セラル。

本植物ハ形狀及枝態等ニ於テ *Euptilota articulata* (J. Ag.) Schm., いそしのぶ, 183圖版及 *Plumaria elegans* (Bonn.) Schm. ニ酷似スレドモ皮部形成ノ方法ノ二様ノ代表的植物ナル *Ptilota* 及 *Plumaria* ト其方法ニ於テ甚シク異ナレリ。*Ptilota* ニテハ常態ノ方法即チ關節細胞ノ分裂ニヨツテ皮層細胞ヲ作り、*Plumaria* 及 *Euptilota* ニテハ根様細胞(rhizoid)トシテ之ヲ作ル。今本植物ニテハ皮層細胞ハ最末位ナル羽枝ノ基部ノ1個又ハ數個ノ細胞ヨリ起レル小羽枝ノ細胞ヨリ形成セラル。此小羽枝ハ對生セル羽枝ノ存スル平面ノ兩側ニ出デ、上方即チ羽枝ノ軸ノ頂端ノ方ニ向キ、下方ニ向クコトナシ、而シテ羽枝ノ軸ノ方ニ屈曲シテ密ニ之ヲ抱擁シ之ニ密着シテ分裂シテ皮層細胞ヲ形成ス。之ニ依テ本植物ハ皮層形成ノ又一ノ type ヲ爲スモノナリト云フベシ。本植物ト親縁ナルモノ、中ニ *Plumaria Eatoni* (Dickie) Schmitz (= *Ptilota Eatoni* Dick.) アリテ十字様ノ四分胞子ヲ有ス；其性質ニヨリテ De Toni ハ之ヲ別屬トシテ *Plumariopsis* ノ新屬ヲ設ケタリ。本植物モ亦十字様ノ四分胞子ヲ有スレドモ皮部形成ノ方法ト異ナルコトハ Askenasy 'Gazelle' 37頁, 9圖版, 6-7圖ニ示シタル記載及圖說ニテ知ラル。 *Plumariopsis* モ亦皮部ノ構成ハ *Plumaria* ニ同ジ。

Plumariella Yoshikawai Okam. 新種

いとしのぶ 岡村命名

第268圖版

性質： 屬ノ處ニ記シタルモノニ同ジ。 體ハ7-10 cm. ノ高サアリ。

產地： 大風ノ後打揚ゲタリ。 伊豆大島(吉川春壽)。

第268圖版。 1: Plumariella Yoshikawai Okam., 新種, いとしのぶ, ノ體, 自然大。—2: 體ノ一部ヲ表面ヨリ見タルモノ, $^{100}/_1$ 。—3: 莖ノ上部ノ横斷面, $^{100}/_1$ 。—4: 枝ノ内部ヲ透視シタル縱斷面ノ一部ニシテ中軸ノ周圍ニ絲狀細胞アルヲ示ス, 廓大。—5-7: 羽枝ノ基部細胞ヨリ單條又ハ分岐セル小羽枝ヲ形成スル狀, $^{500}/_1$; 7圖ノ點線ハ反對ノ側ニアル細胞ヲ示ス。 8: 一ツノ羽枝ヲ側面ヨリ見タルモノ, $^{500}/_1$; 矢ハ3個細胞ヨリ成レル羽枝ヲ示スモノニシテ其基部ノ細胞ヨリ1個細胞ニテ成レル小羽枝ハ右側ニ出デ, 4個細胞ニテ成レル小羽枝ハ左側ヨリ出ヅ, 而シテ次ノ上ノ細胞ヨリ兩側ニ各1個細胞ニテ成レル小羽枝ノ出ルヲ見ル; 最モ大ナル1細胞ハ羽枝ノ軸ヲ爲セル細胞ノ一ヲ示ス。—9-10: 四分胞子ヲ有スル羽枝; 9, $^{200}/_1$; 10, $^{500}/_1$ 。—11. 囊果, 稍廓大。

Ceramium crassum Okam. 新種

ふといぎす 岡村命名

第269圖版

性質： 他ノ海藻上ニ附着シ, 太キ絲狀ニシテ分岐シ, 廣開シ, 頂端少シク内方ニ屈曲シテ細ク, 概ネ偏在セル單條又ハ分岐セル短キ副枝ヲ有シ, 副枝ハ往々枝トナル; 中軸ノ關節ハ其直徑ニ等シク或ハ短ク, 厚ク皮層ヲ被ムリテ外部ヨリハ透視スルコト能ハズ。—四分胞子囊ハ枝ノ皮層中ニ埋リテ散在ス。 囊果ハ短柄ヲ有シ, 苞ヲ存ス。

產地： 潮線間ニ在ル Sargassum, Carpometis 等ノ上ニ附着ス; 江ノ島, 房州。

上總, 銚子。

體ハ他ノ海藻上ニ附着シ, 太キ絲狀又ハ略ボ圓柱狀ニシテ, 基部ノ方ニ少シク細ク成リ少距離ノ間莖狀ヲナシ, 又狀ニ分岐シテ廣開シ, 漸次上方ニ細ク成リ, 頂端ハ輕ク内方ニ屈曲セル又枝ヲナス。 各部ハ概ネ偏在セル又ハ不規則ニ出タル短カキ副枝ヲ有ス; 副枝ハ單條又ハ1-2回又ハ數回又狀ヲナシ, 兩端ノ方ニ細ク, 其中或ハ枝ニ伸ブモノアリ; 又時トシテ全ク副枝ナキモアリ。 體ノ高サ4-12 cm., 太サ0.5-0.7 mm. アリ。 副枝ハ3-15 mm. 長シ。 中軸ハ太クシテ厚キ壁ヲ有スル細胞ヨリ成リ主部ノ關節ノ長サハ稍其直徑ニ等ク, 漸次上方ニ短ク成リ, 4-5層ヨリ成レル皮層細胞ヲ以テ厚ク蔽ハレ, 皮層細胞ハ漸次外方ニ小サク成リ, 皮層ノ厚キ爲メ中軸ハ之ヲ透視スル能ハズ。 皮下層ノ細胞中或モノハ甚シク長ク成リテ絲狀ヲ成シ, 恰モ根様絲ノ如キ觀ヲ爲スモノアリ。 四分胞子囊ハ皮層中ニ埋リシ枝ノ表面ニ散在ス。 囊果ハ短柄ヲ有シ短カキ指狀ノ苞ヲ有ス。

本植物ガ Ceramium rubrum ノ或型種ト親縁アルコトハ疑ヲ容ル、所ニアラズト雖モ, 主トシテ厚キ皮層ヲ有スルヲ以テ之ト異ナリトス。 本植物ノ皮下層細胞中ニ根様絲ノ如キ絲狀ノ細胞ヲ有スルコトハ Ceramium hypnaeoides (J. Ag.) Okam., 茲このり, ト關聯シテ興味多キコトハス。 Schmitz 及 Hauptfleisch ハ該植物ノ體中ニ在ル絲狀ノ細胞ヲ rhizoid (根様細胞) ト考ヘタレドモ其ハ初メヨリ存スル細胞ノ絲狀ニ成リタルモノニシテ決シテ二次的ニ作ラレタル rhizoid ニ非ルヲ以テ予ハ Campylaephora 屬ヲ廢シテ Ceramium 屬ニ外ナラズトセリ。 兩氏ハ茲このりノ枝端ノ鎌狀ニ膨大スルコトハ, rhizoid ト思ヘル絲狀細胞アルコトハヲ以テ J. Agardh ノ說ニ從ヒ Campylaephora ノ存在ヲ認メタルモノナリ。

第269圖版。 1: Ceramium crassum Okam., ふといぎす, ノ體, $^{1}/_1$ 。—2: 體ノ中央部ノ縱斷面, $^{100}/_1$ 。—3: 縱斷面ノ一部ニシテ2條ノ絲狀ナル皮下細胞ヲ示ス, $^{200}/_1$ 。—4: 體ノ表面ニ並行シテ縱斷シタル斷面ニシテ皮層ノ構造ヲ示ス, $^{200}/_1$ 。—5: 小枝ノ表面, $^{200}/_1$ 。—6: 四分胞子ヲ有スル枝ノ横斷面, $^{400}/_1$ 。—7: 頂細胞, $^{500}/_1$ 。—8-9: 四分胞子; 8, $^{100}/_1$; 9, $^{500}/_1$ 。—10: 囊果, $^{200}/_1$ 。



Griffithsia japonica Okam. 新種

かざしぐさ 岡村命名

第270 圖版.

性質：體ハ直立シ、叉狀ニシテ扇狀ヲナシ枝皆直立シ、關節ハ1-2節ヲ距テ、分岐シ、下部稍圓柱狀、上部ハ稍棍棒狀又ハ圓柱狀ニシテ多少楔形ヲナシ、下部ノ關節ハ直徑ノ4-6倍長ク、上部ノモノハ其2-3倍長シ；四分胞子ハ側面ニ出ル短キ關節ノ頂端ノ次又ハ其次ナル關節ノ肩ノ周圍ニ密ニ輪生シ、單條ニシテ1個細胞ヨリ成レル屈曲セル苞ヲ存ス；苞ノ或モノハ枝トナリテ伸長ス；精子器ハ四分胞子ト同様ニ密集ス；囊果ハ側面ヨリ出ル關節ノ頂端ニ形成セラレ單條又ハ分岐セル苞ヲ以テ圍繞セラル。

產地：潮線間ナル諸海藻上ニ附着シ漸深帶ニ及ブ。長崎縣、伊豫高濱（八木氏）、三河日出、伊豆大島、相州三崎、江ノ島、銚子、常陸湊、磐城九面、松島灣。

體ハ3-4cm、高ク、叢生シ、直立シ、0.5-0.7mm、太ク、數回密ニ叉狀ニ分岐シ、扇狀ニシテ枝皆直立シ、新鮮ナルモノハ同一面上ニ擴ガリ、1-2節毎ニ叉狀ニ分ル。下部ノ關節ハ稍圓柱狀（直徑320-340 μ ）ニシテ根ノ如キ絲狀ノ枝ヲ出シ其先端ニ盤狀附着部ヲ作りテ他物ニ附着シ又互ニ附着ス。上部ノ關節ハ稍棍棒狀又ハ稍圓柱狀ニシテ、往々上方ニ少シク廣ク下方ニ細ク成リ、時トシテ洋梨果狀ヲナス。關節ノ長サハ下部ノモノニ於テ直徑ノ4-6倍、上部ノモノニテ其2-3倍ヲ有シ、575-920 μ アリ。四分胞子ハ側面ニ出ル短キ關節ノ頂端ヨリ第二又ハ第三ノ關節ナル細胞ノ肩ノ周圍ニ輪生シ、内側ノ方ニ屈曲セル苞ヲ以テ圍繞セラル。頂細胞ハ往々脱落シ爲ニ四分胞子ノ集リハ側枝ノ頂端ニ形成セラレタル如キ觀ヲ呈スルコトアリ。四分胞子ノ苞ハ多クハ單條ニシテ1個細胞ヨリ成レドモ其1-2條ハ往々常態ノ枝トナリテ伸長シ更ニ四分胞子ヲ生ズルニ至ル。精子器ハ四分胞子ト同ジク側面ニ出ル枝ノ頂細胞ノ次ナル細胞ノ肩ノ周圍ニ密集シ又ハ緩ク叢狀ヲナシ單條（或ハ時ニ囊果ノ苞ノ如ク分岐スル歟？）ノ苞ヲ以テ圍繞セラル。囊果ハ側面ニ出ル短キ關節ノ頂端ニ2-3個形成セラレ、圓柱

狀ニシテ單條ナル1個細胞ヨリ成レル又ハ一回分岐セル苞ヲ以テ圍繞セラル。苞ノ數ハ16條ニ達ス。色ハ鮮紅色ナリ。質ハ柔キ薄キ膜質ニシテ體ハ乾燥スルトキハ紙ニ密着ス。

遠藤氏ハ其 Notes on Algae New to Japan, II, p. 278 (植物學雜誌, 28卷, 333號, 278頁)ニ於テ之ヲ Griffithsia ヲ研究シ之ヲ Gr. Schousboei Mont. ノ原標本ト比較シテ該種ナリトセリ。氏ノ該種ナリトシタルモノハ即チ予ノ此處ニ記ス處ノモノナリ。予ハ始メ氏ノ說ニ從ヒ該種ナリト思惟シタレドモ其原產地ナル太平洋、地中海等ト餘リニ分布ノ遠キト且余ノ力ノ及ブ限リ G. Schousboei ノ文獻ニ徴シタルモ四分胞子ノ苞ガ枝トナリテ伸長スルコトヲ記シタルモノナク又一方ニハ太平洋中ニ該種又ハ其變種ダモ産スルコトノ文獻ナキヲ以テ本種ハ之ヲ新種トスルモ可ナリト斷定セリ。果シテ新種ナラザレバ或ハ一變型ト見ルベキ歟。

第270 圖版。1-3: *Griffithsia japonica* Okam., 新種, かざしぐさノ體, 自然大; 2: 1圖ノ一部; 3, 三崎ニテ穫タル小サキ實アル體。—4-5: 四分胞子アル同一體ノ上部(4圖)ト下部(5圖), $\frac{25}{1}$ 。—6-9: 同一體ノ四分胞子ヲ有スル關節ノ種々ノ形: 6圖ハ頂端ヨリ三番目ノ細胞ノ肩ニ胞子ノ輪生スルモノ, 7-8圖、頂細胞ヨリ二番目ノ細胞ニ成レルモノ; 9圖、一、二ノ苞ノ常態ノ枝ニ發育セルモノ; 6, 8, $\frac{14}{1}$; 7, $\frac{48}{1}$; 9, $\frac{21}{1}$ 。—10: 頂細胞ノ脱落シタル四分胞子ノ集リヲ上ヨリ見タルモノ, $\frac{48}{1}$ 。—11: 四分胞子 $\frac{100}{1}$ 。—12-15: 同時ニ同所ニ於テ得タル第1圖ニ示シタルト同ジ程ノ大サノモノニ見タル3種ノ果實ヲ有シタル個體, 廓大; 12, 頂端ヨリ二番目三番目ノ關節ノ周圍ニ四分胞子ヲ形成シタルモノ; 13, 二番目ノ節ノ肩ノ周圍ニ精子器ヲ形成シタルモノ; 14, 精子, $\frac{60}{1}$; 15, 囊果。

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著作者兼發行者 岡村金太郎
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